David Schaeffer Engineering Ltd.
120 Iber Road, Suite 103
Stittsville, ON K2S 1E9
613-836-0856
dsel.ca

ADEQUACY OF SERVICES REPORT

FOR

BARRHAVEN CONSERVANCY DEVELOPMENT CORPORATION

BARRHAVEN CONSERVANCY <u>EAST PHASE 5</u>

CITY OF OTTAWA

PROJECT NO.: 20-1180

DECEMBER 2022 – 1ST SUBMISSION

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1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained to update an Adequacy of Services Report (AES) in support of the Barrhaven Conservancy "Phase 5" development area on behalf of Barrhaven Conservancy Development Corporation (BCDC). This area (being referred to as "Phase 5") is part of a previously approved draft plan of subdivision within the greater Barrhaven Conservancy development area (City file no. D07-16-20-0021).

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 site is located north of the Jock River, east of Highway 416, west of Greenbank Road (and the Kennedy-Burnett Stormwater Facility), and south of both McKenna Casey Drive and Strandherd Drive.

The focus of this report is for the ***Conservancy East (Phase 5)*** draft plan area consisting of vacant land that is located east of the existing Foster Ditch, which bisects the overall BCDC landholdings, and west of Borrisokane Road. The subject lands are an approximately 19.4 ha irregular parcel including parts of 3288, and 3300 Borrisokane Road. Of this, approximately 13.82 ha in area (including right-of-ways environmental areas and open space) are considered in the servicing review with the proposed updated development draft plan ***Figure 2B*** provided in the ***Drawings*** section of this report for reference. Also provided is Figure 2A which illustrates the portion of the prior approved draft plan and the "Phase 5" area being revised. The development area is planned to be developed with a mix of detached single homes, townhomes, park blocks, open spaces and a road network.

The Conservancy East Phase 5 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 updated development plan area can be supported by municipal services.

1.1 Existing Conditions

The ***Conservancy East (Phase 5)*** property is relatively flat with the existing elevations ranging from ~91.5 m in the north to 91 m in the south. All existing flows are either overland to the Jock River or conveyed to the Jock River by way of the Foster Ditch and Borrisokane Road ditches which is adjacent to 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 2-4 development east of Borrisokane Road were previously undertaken for the approval of those phases of the development area.

A pre-consultation with the local MECP office has not yet been completed for the balance of the Conservancy development area until the functional design details and requirements have been finalized 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 approvals are the Environmental Compliance Approval (ECA) for the South Nepean Collector sanitary trunk sewer as well as sanitary sewer ECA for the Conservancy development area east of Borrisokane Road. The documents are 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)
(MECP	Environmental Compliance Approval	# 4357-CHMQEM (Sept. 1, 2022)	Sanitary and storm sewer approvals for Conservancy lands east of Borrisokane Road
MECP	Permit to take Water	#5633-C2RQPL (May 26, 2021)	Water taking from Building Excavation, Site Servicing, SWMW, In-Water Works, Ponded Surface Water
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 and LIDs 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 Fraser-Clarke Watercourse)	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	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)

➢ 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 East, Ottawa, Ontario
  Paterson Group, September 24, 2019 (Project No. PG5036-1)
  (Geotechnical Report)

- Environmental Impact Statement for Barrhaven Conservancy East
  Kilgour & Associates Ltd., July 29, 2020
  (Kilgour EIS)

- Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River): Water Distribution System Analysis, Stantec, June 2, 2022
  (Stantec Hydraulic Analysis - East)

- Adequacy of Services Report for Barrhaven Conservancy Development Corporation, Barrhaven Conservancy East
  David Schaeffer Engineering Ltd., July 2021
  (DSEL East FSR)

- Design Brief for Barrhaven Conservancy East – Phase 2, 3, & Jock River
  David Schaeffer Engineering Ltd., June 2022
  (DSEL East Design Brief)

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. Work is ongoing. 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).

There are future trunk watermains proposed in the vicinity of the subject property (i.e. along Greenbank Road) which will provide water service to development lands to the east and south of Conservancy East. These services will be further extended to provide the requisite water supply to the development area.

3.2 Water Supply Servicing Design

Stantec Consulting Limited was retained to perform a hydraulic assessment for the Conservancy East Lands. The ***Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation (Stantec Hydraulic Analysis)*** prepared by Stantec (March 2021) previously supported the advancement of the Conservancy East lands east of Borrisokane road. Subsequently, as part of the detailed design for the approved phases east of Borrisokane Road, Stantec prepared an updated study "***Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River): Water Distribution System Analysis*** (June 2022 – ***Stantec Hydraulic Analysis - East***) which is enclosed in ***Appendix B*** for reference. Note that phasing references have changed for the development area and the "Phase 4" area referenced in the Stantec study represents the "Phase 5" which is the subject of this updated draft plan – See Figure 1-2 of the ***Stantec Hydraulic Analysis – East*** study for reference. As well, the layout analyzed in the Stantec analysis differs slightly but is not expected to impact the serviceability.
The analysis reviewed the system requirements of the development area on the west and east sides of Borrisokane Road but only the detailed design of the areas east of Borrisokane Road were advanced to detailed design.

The proposed water servicing layout is presented in ***Figure 3***.

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 established in the boundary condition request found in ***Appendix B*** as prepared by Stantec. Based on anticipated unit configurations and separations the City's fire flow cap of 10,000 L/min for single dwellings and traditional townhomes as outlined in *ISDTB-2014-02* does not apply and separation of fire areas with units of ordinary construction, as well as architectural elements, are required to meet target fire flows. The fire flows are calculated in accordance with the Fire Underwriters Survey's Water Supply for Public Fire Protection Guideline (1999). Detailed FUS calculations can be found in the Stantec reporting.

3.2.2 Boundary Conditions

To support the preparation of a hydraulic analysis for the subdivision, boundary conditions were provided by the City of Ottawa for the anticipated water demands and are summarized in the following table. See ***Appendix B*** for full details of the boundary condition request submitted.

Table 2B: Boundary Conditions (from *Stantec Hydraulic Analysis – East* report)

HGL (m) - Zone SUC Servicing Conditions			
Demand Scenario	**Two Connections (5)**		
	Connection 1 (1)	**Connection 2 (2)**	
AVDY	150.0	150.0	
PKHR	144.2	144.0	
AVDY +FF	138.7	135.1	
MXDY +FF	137.0	133.2	
Demand Scenario	**Two Connections with Upgrades (4)**		
	Connection 1 (1)	**Connection 2 (2)**	
AVDY	149.5	149.5	
PKHR	144.1	144.1	
AVDY +FF	138.6	139.8	
MXDY +FF	136.8	138.1	
Demand Scenario	**Three Connections (5)**		
	Connection 1 (1)	**Connection 2 (2)**	**Connection 3 (3)**
AVDY	149.5	149.5	149.5
PKHR	144.5	144.4	142.0
AVDY +FF	138.6	135.1	137.4
MXDY +FF	137.1	133.4	134.8

(1) Ground elevation at Connection 1 (Chapman Mills Drive) = 92.80 m
(2) Ground elevation at Connection 2 (Danson Gardens Grv / Darjeeling Ave) 91.80 m
(3) Ground elevation at Connection 3 (Flagstaff Dr) 92.10 m
(4) Upgrades to existing water distribution required to increase HGL at Connection 2; upsize existing 203mm diameter watermain on Danson Gardens Grv to a 305mm watermain
(5) For scenarios where ultimate conditions will include three connections, the boundary conditions for two connections (without upgrades) were used when only connections 1 and 2 are in place (i.e. for modelling Phases 2 and 3.

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***.

Table 2C: Water Demand Estimate

	Unit Count Conservancy East	**Pop (1)**		**AVDY(2) (L/s)**	**OWD(3) (L/s)**	**MXDY(4) (L/s)**	**PKHR(5) (L/s)**
Single Family	782	2,659		8.62	9.49	21.55	47.38
Townhouse	606	1,636		5.30	0	13.25	29.17
Totals	***1,388(6)***	***4,296***		13.92	9.49	34.80	76.55

(1) Population per unit is 3.4 for Single Family and 2.7 for Townhomes
(2) AVDY = Average Day
(3) OWD (outdoor water demand) = 1,049 L/unit/day for Singles
(4) MXDY = Maximum Day
(5) PKHR = Peak Hour
(6) Total unit count may vary slightly from final layouts but are estimated to be within +/-2.5%.
(7) See Stantec Hydraulic Analysis in ***Appendix B*** for details.

3.3 Summary of Hydraulic Modeling Analysis

A watermain analysis has been prepared to confirm that the network is sized adequately, which is the greater of maximum day plus fire and maximum hour. City review comments on the current ***Stantec Hydraulic Analysis - East*** note that 'Option B' is the preferred system configuration (sizing and layout for three connections) and those results are presented below. For full details of the assessments refer to the ***Stantec Hydraulic Analysis - East,*** enclosed in ***Appendix B.***

System Pressures

The modeling indicates that the development can be adequately serviced by the proposed watermain network. Modeled service pressures for the development are summarized the following table. The detailed pipe and junction tables are contained in the ***Stantec Hydraulic Analysis***, enclosed in ***Appendix B.***

Table 2D: Summary of Available System Pressures

	AVDY Maximum Pressure		**Peak Hour Demand Minimum Pressure**	
	kPA	psi	kPA	psi
Option B – 3 Connections	559	81.14 (J55, J60)	482	69.83 (J103)
Note: See model results in the Appendix D of the ***Stantec Hydraulic Analysis*** *memo (buildout of all phases).*				

The generally accepted best practice is to design new water distribution systems to operate between 350 kPa (50 psi) and 480 kPa (70 psi) as outlined in the City of Ottawa Design Guidelines. Where pressures exceed 80psi pressure reducing valves (PRV) shall be implemented as per the Ontario Building Code.

Available Fire Flows

The minimum allowable pressure under fire flow conditions is 140 kPa (20 psi) at the location of the fire. A summary of the available fire flows is presented in the following table. The detailed fire flow reports are found in the ***Stantec Hydraulic Analysis - East*** enclosed in ***Appendix B***.

Table 2E: Summary of Available Fire Flows

	Required Fire Flow (L/s)	**Minimum Available Flow (L/s)**	**Junction ID**
Option B – 3 Connections	217	250	J86, J87
Note: See model results in the Appendix D of the ***Stantec Hydraulic Analysis – East*** *memo (buildout of all phases). Exception is the phase west of Borrisokane Road where the anticipated cul-de-sac fire flow node can be managed by procedures noted in ISDTB-2018-02 (See Section 3.2 of Stantec report)*			

As shown in the above table, the model predicts the network will be able to provide all required fire flows. Detailed results are included in the ***Stantec Hydraulic Analysis - East***, enclosed in ***Appendix B***.

System Reliability

Various major watermain failure scenarios were reviewed by Stantec. Some scenarios resulted in potential reliability issues which have been resolved in the updated watermain layout with additional looping in the northwest area of the design. See discussion in Section 3.3 of the ***Stantec Hydraulic Analysis -East***.

3.4 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, being constructed as part of Phase 2-4 approvals, will facilitate servicing to the Conservancy East Phase 5 lands via watermain extension along the future Chapman Mills Drive extension and through the Claridge “Burnett Lands” development area. 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)***.

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. The wastewater servicing plan can be seen in ***Drawing 4***.

The prior report proposed 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 sanitary design sheet for the lands east of Borrisokane Road is provided in ***Appendix C*** for reference. Within that design sheet the area and flows from the lands west of Borrisokane Road are highlighted where flows enter that development area at the westward stub from MH10A. That design sheet projected a flow of 77.81 L/s. Based on the updated Phase 5 draft plan, and updated concept plans for the

Conservancy West development area (west of the Foster Ditch), the flows shown at the eastern limit of Phase 5 (see Phase 5 design sheet in ***Appendix C***) is now ~68.96 L/s at MH 532A. As such, downstream systems are sufficient and no negative impacts given that flows are lower than the previously projected 77.81 L/s.

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 continues to confirm that the expansion of the drainage areas from the ***2019 Novatech SNC Memo*** to include the entirety of the subject property has no negative impacts. 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, Borrisokane Road roadside ditches, are the main stormwater conveyances within the Conservancy East Phase 5 property that convey stormwater to the Jock River.

5.2 Proposed Stormwater Management Strategy

As documented in the previous AES, various stormwater strategies were discussed within the Master Infrastructure Review (MIR) prepared in parallel with the AES. 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 update for Phase 5 Alternative 1 continues to be advanced as per the evaluation provided in the MIR and per discussions with the City of Ottawa on July 20, 2021. This alternative:

- 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). 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)***.
- All proposed units will be equipped with sump pumps due to local constraints;
- A treatment train approach to attain an Enhanced Level of Protection (80% total suspended solids (TSS) removal) per MECP guidelines consisting of:
  - Deep sump catchbasins;
  - The incorporation of infiltration-type LIDs within the right-of-way extending out from catchbasin locations (see ***Figure 5*** in the ***Figures & Drawings*** section). Future detailed grading will allow for the determination of suitable locations in order to yield optimal benefit from this LID. See Section 5.7 for additional LID discussion.

- Multiple oil and grit separators (OGS) units to provide TSS treatment with outlets that are above the 2-year event summer water levels on the Jock River;
- The storm systems will discharge the treated stormwater at multiple outlets located along the southern natural heritage corridor, connecting via channels. Discharge locations are demonstrated in the ***Storm Tributary Area*** plan in the ***Figures & Drawings*** section

- An on-site road network designed to maximize the available storage within right-of-ways for the 100-year design event, where possible; and
- An overland flow route designed to safely convey stormwater runoff flows in excess of the on-site road storage.

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 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 (similar to prior phases):

- 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);
- All proposed units will be equipped with sump pumps due to local constraints;
- A treatment train approach to attain an Enhanced Level of Protection (80% total suspended solids (TSS) removal) per MECP guidelines consisting of:
    - Deep sump catchbasins to reduce catchbasin sump sediment re-suspension and optimize TSS removal;
    - Multiple oil and grit separators (OGS) units to provide TSS treatment with outlets that are above the 2-year event summer water levels of the Jock River;
    - The incorporation of infiltration-type LIDs within the right-of-way extending out from catchbasin locations (see ***Figure 5*** in the ***Figures & Drawings*** section). The future detailed grading will allow for the determination of preferred locations in order to yield optimal benefit from this LID. See Section 5.7 for additional LID discussion;

- The storm systems will discharge the treated stormwater at multiple outlets (2) located along the natural heritage corridor, connecting to the Foster Ditch via channels to support hydration of the wetlands and ultimately outletting to the Jock River. Discharge locations are demonstrated in ***Drawing 3***;
- 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

5.3.1 Treatment Train Approach

JFSA previously (June 2021 memo) prepared a review of various potential stormwater quality treatment options that were investigated for the development. These included options, and combinations of options, as summarized in the following updated table. Each of the options has an expected total suspended sediment (TSS) removal capability, varying from 5% to 88%. This review assessed how the required Enhanced Level of Protection (80% TSS removal) could be achieved when the options are used in a treatment train approach, consistent with the expected requirements of the upcoming MECP *Consolidated Linear Infrastructure* policy.

Table 1: Quality Control Alternatives – Treatment Train to achieve 80% TSS Removal

Selection and comparison of alternatives

Method	TSS Removal	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8
Street Sweeping (Monthly)	5%								
Street Sweeping (Weekly)	10%								
Street Sweeping (Weekly with Elgin Eagle)*	88%	x							
Curb Cut with Grass Swales	75%			X					
Curb Cut with Infiltration Trenches	80%								
Catchbasin Inserts (CB Shield)*	27%		X		X	X		X	
Deep Sump Catch Basin	25%				X		X		X
Infiltration/ Filtration Trenches**	80%				X	X	X		
Infiltration at CBs, per MOE Table 3.2 (22.5m³/ha)	70%								X
OGS*	50%			X					X
JellyFish*	85%							X	
SWM Pond (Wet Pond)	80%		X						
		=======	=======	=======	=======	=======	=======	=======	=======
	Overall Performance	88.0%	85.4%	87.5%	89.1%	85.4%	85.0%	89.1%	**88.8%**

Treatment Train Overall Performance = 1 - (1- TSS Removal Rate Method 1) x (1- TSS Removal Rate Method 2) x (1- TSS Removal Rate Method 3 x ...)

*) TSS Removal as documented by ETV Canada
**) includes the use of Etobicoke infiltration or filtration systems or other permutations of the same

The above table provides a summary of the TSS removal for the various methods that were considered. An option of infiltration LID measures located at catchbasin locations has been added as a method, and to Alternative 8 (see further discussion regarding this method below). The options, and combinations of options, have been assessed and shown to meet or exceed the required 80% TSS target.

For the development area, the updated Alternative 8 option demonstrates an estimated TSS removal of 88.8% for that particular treatment train approach which has been discussed with City staff for the approval of prior phases and will be the design being advanced. For the determination of the TSS removal of 70% for the infiltration LID at catchbasins, 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.

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 22.5 m^3/ha is determined for the development area pro-rated from the above table based on an overall imperviousness of ~62.5%. Similar to prior phases it is anticipated that the extent of the site area for Conservancy East Phase 5 can be managed with the proposed LID. For prior phases it is noted that approximately 140 lineal meters of LID per hectare of area to be treated was required. With approximately 9.0 ha of area to be treated (which excludes rear yards similar to the prior phase) this equates to 140x9.0= ~1,260 m extent of LID required. Phase 5 has approximately 1,800 m of roadway to incorporate the LID infrastructure therefore sufficient roadway is available for use.

5.3.2 Oil-Grit Separator Units (OGS)

As shown on ***Drawing 3***, two (2) OGS units at locations along the southern boundary of the property, discharging to the Jock River via the existing Foster Ditch. 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 4: 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 prior to discharge to the Jock River via naturalized wetlands 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 5: 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 9 – OGS9 (3)	7.21	0.72	212	CDS Model 4045-8
Area 10 – OGS10(3)	6.61	0.70	212	CDS Model 4045-8

(1) Providing at minimum 80% TSS removal for a Fine Distribution
(2) See ***Drawing 3*** for OGS unit locations
(3) NOTE: the OGS numbering of OGS9 and OGS10 have been used to maintain consistency with prior functional servicing reports circulated in relation to this development area.

The above OGS units will achieve required quality controls within the treatment train and, along with other elements, will have additional beneficial TSS mitigation.

5.3.3 Groundwater

Paterson Group has reviewed the anticipated long term groundwater condition for the development area. Paterson drawing PG5036-10A in ***Appendix D*** demonstrates the long term groundwater elevation across the Conservancy East Phase 5 development area. The lowest elevation of 88.70 is below the trunk sewer profiles shown in ***Drawing No. 5*** in the ***Drawings*** section and would be below any infiltration-type LID proposed within the development area.

5.4 Proposed Minor System

The subject property will be serviced by an internal gravity storm sewer system that will 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.

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 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 within the subject property. The following table summarizes the standards 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 6: 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 0.67 and 0.80 for the development areas, 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 7: Minor System Trunk Sewer Outlets

Area/Outlet # (from east to west)	Trunk Sewer Outlet Headwall	Peak Flow (L/s)
9 (HW9)[(1)]	1050 mm diameter @ 0.20%	894
10(HW10) [(1)]	1050 mm diameter @ 0.11%	739
(1) NOTE: the OGS numbering of OGS9 and OGS10 have been used to maintain consistency with prior functional servicing reports circulated in relation to this development area.		

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*** 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 5 – Preliminary HGL Analysis (December 1, 2022)* in ***Appendix D*** for details/results. The analysis has been evaluated for various scenarios for the Jock River (as per prior City requirements) in order to assess the appropriate HGL boundary condition:

- 100-year rainfall event on the development and a 5-year spring water level on the Jock River;:or
- 5-year rainfall event on the development and a 100-year spring water level on the Jock River (deemed to be the critical event).

The HGL results in JFSA's Table 1 demonstrate that the worst case scenario freeboard to the ground surface ranges from 0.64m to 0.90m for the critical event noted above. The HGL is shown on the profile ***Drawing 5*** for reference.

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 (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 Conservancy East (Phase 2-4) this site 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 East Phase 5 Lands the grade raise restriction varies between 1.4 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 LID techniques proposed above are most suitable due to the existing clay soils and high groundwater levels. The long term groundwater anticipated is demonstrated on Paterson Drawing *PG5036-10A* in ***Appendix D*** as previously noted. The proposed LID infiltration measure noted in Section 5.2 will contribute some infiltration 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.

5.8 Existing Watercourses

5.8.1 Foster Ditch

The Foster Ditch borders the western boundary of the Conservancy East Phase 5 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 3200 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.

5.9 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. A vertical structural face of fill was not seen as a desirable or practical outcome and a berm was thus constructed. As-builts for the top of berm 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 the berm as constructed corresponds to the approved JFSA 100-year floodplain line and the current top of berm corresponds to the as-built top of berm.

5.10 Stormwater Servicing Conclusions

The Phase 5 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 (two). A proposed treatment train arrangement of 1.0 m deep sump catchbasins, 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 channels within the natural heritage corridor where flows will be conveyed to the Foster Ditch 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 East (Phase 5) development area at this time and demonstrates that the HGL is maintained below the ground surface with freeboards ranging from 0.64 m to 0.90 m. 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 layouts, 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 East phase 5 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 wetland facilities, 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 East lands as follows:

- *Geotechnical Investigation – Proposed Residential Development, Conservancy Lands East* (Paterson Group, September 24, 2019);

The existing ground surface across the site is relatively level with approximate ground surface elevation varying between 91.5 m and 91.0 m. The subsurface profile generally consists of an approximate 50 mm to 460 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 1.4 m in the north area of the phase and 1.8 m in the south. Figure PG5036-2 '*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 area.

- 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, being constructed as part of Phase 2-4 approvals, will facilitate servicing to the Conservancy East Phase 5 lands via watermain extensions along the future Chapman Mills Drive extension and through the Claridge “Burnett Lands” development area. Detailed modelling will confirm phasing of the extensions of trunk watermains and verify sizing of the local watermain network.

- 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 continues to confirm that the expansion of the drainage areas from the ***2019 Novatech SNC Memo*** to include the entirety of the subject property has no negative impacts. 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.

- 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 the Foster Ditch which will convey flows to the Jock River. Prior to discharge from the development, any first flush stormwater will have passed through a treatment train of measures in order to provide the appropriate level of Enhanced quality control. The treatment train consists of deep sump catchbasins, LID infiltration trench at catchbasin locations and an end-of-line OGS unit. It is anticipated that quantity control will not be required for discharges to the Jock River.

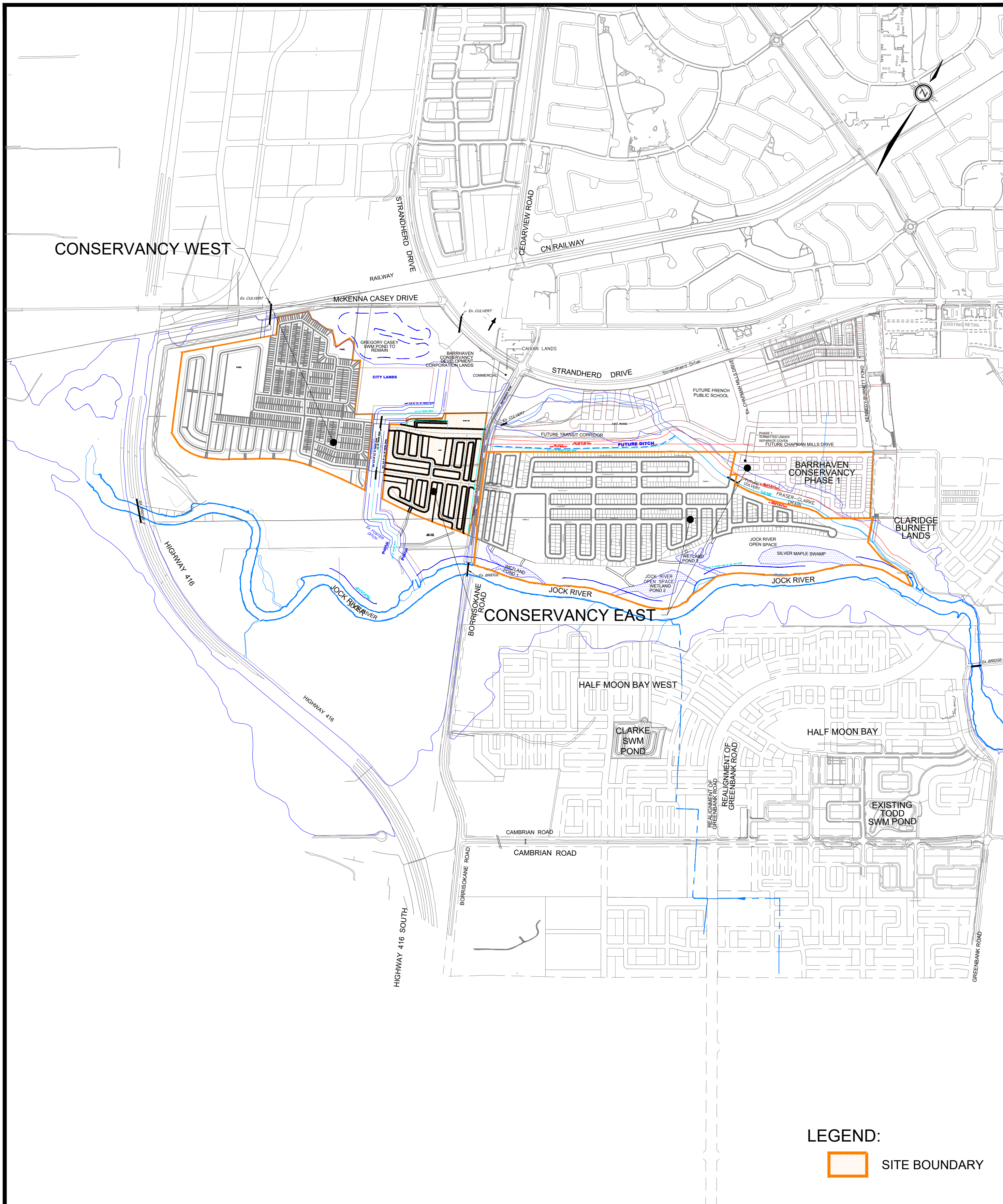
- A preliminary Hydraulic Grade Line (HGL) modelling analysis has been completed at this time and demonstrates that the HGL is maintained below the ground surface. Another detailed HGL review will be completed for the proposed system at the detailed design level.

- Sump pumps are proposed to be installed for all units within residential blocks and lots;
- The proposed servicing and grading plans are anticipated 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: Kevin L. Murphy, P.Eng.

FIGURES & DRAWINGS



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BARRHAVEN CONSERVANCY EAST PHASE 5

KEY PLAN

CITY OF OTTAWA

DATE:	DECEMBER 2022
SCALE:	1:20000
PROJECT No.:	20-1180 A-5
FIGURE:	1

SCHEDULE OF LAND USE		
LAND USE	BLOCK(S)	AREA (Sq. m)
SINGLES (DETACHED)	1 TO 8, (BOTH INCLUSIVE), 20, 21, 24, 25, 26, 27, 29, 30, 31, 33, 35, 36, 39, 40, 41, 43, 45, 47, 48 AND 50 TO 99, (BOTH INCLUSIVE)	219,615.4
TOWNHOME	9 TO 19, (BOTH INCLUSIVE), 22, 23, 28, 32, 34, 37, 38, 42, 44, 46, 49 AND 135	66,745.4
REAR LANE TOWNHOME	100 TO 103, (BOTH INCLUSIVE) AND 106 TO 109, (BOTH INCLUSIVE)	27,698.3
WALKWAYS	104, 105, 110 TO 116, (BOTH INCLUSIVE) AND 134	1,815.1
OPEN SPACE	118, 119 AND 121	4,021.3
BUS LANE	132	8,651.3
FUTURE DEVELOPMENT	120	9,218.2
PARK	117, 122, 123 AND 133	42,832.3
NATURAL HERITAGE SYSTEM	124, 125 AND 126	52,086.5
JOCK RIVER OPEN SPACE	127, 128 AND 129	237,125.6
STREET WIDENING	130 AND 131	5,989.5
STREETS	STREET '1' TO STREET '37', (BOTH INCLUSIVE)	176,962.4
LANES	LANE '1' TO LANE '3', (BOTH INCLUSIVE)	4,890.3
TOTAL:		857,651.6

FIGURE 2A
2021 APPROVED DRAFT PLAN

SCHEDULE OF LAND USE

LAND USE	BLOCK(S)	AREA (Sq. m)
SINGLES (DETACHED)	1 TO 7, (BOTH INCLUSIVE), 20, 21, 24, 25, 26, 27, 29, 30, 31, 33, 35, 36, 39, 40, 41, 43, 45, 47, 48, 50 TO 76, (BOTH INCLUSIVE), 78 TO 99, (BOTH INCLUSIVE), AND 115	215,112.5
TOWNHOME	8 TO 11, (BOTH INCLUSIVE), 22, 23, 28, 32, 34, 37, 38, 42, 44, 46, 49, 114, 121 AND 131	54,578.7
BACK-TO-BACK TOWNHOME	12 TO 14, (BOTH INCLUSIVE), AND 16	10,524.5
REAR LANE TOWNHOME	15, 100, 101, 102, 103, 106, 107, 108 AND 109	26,421.2
WALKWAYS	17, 77, 104, 105, 111, 112, 113, 129 AND 132	1,510.5
OPEN SPACE	119 AND 130	3,413.8
BUS LANE	18 AND 116	12,894.2
FUTURE DEVELOPMENT	120	8,233.9
PARK	19, 117, 122 AND 123	44,118.1
NATURAL HERITAGE SYSTEM	124, 125 AND 126	56,283.3
JOCK RIVER OPEN SPACE	127 AND 128	236,996.6
STREET WIDENING	110 AND 118	5,989.5
STREETS	'1' TO '39', (BOTH INCLUSIVE)	174,229.7
LANES	'1 TO '5', (BOTH INCLUSIVE)	7,345.1
TOTAL:		**857,651.6**

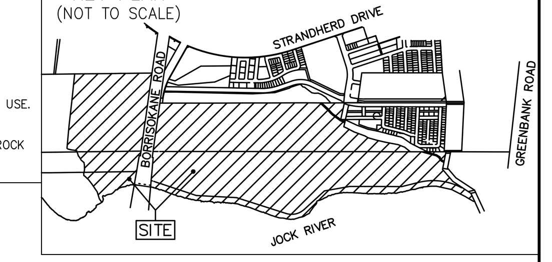
SUBJECT TO THE CONDITIONS, IF ANY, SET FORTH IN OUR LETTER DATED......................,THIS DRAFT PLAN IS APPROVED BY THE CITY OF OTTAWA UNDER SECTION 51 OF THE PLANNING ACT THIS .... DAY OF ...., 2022.

LILY XU, MCIP, RPP, MANAGER DEVELOPMENT REVIEW-SOUTH
PLANNING, REAL ESTATE AND ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

ADDITIONAL INFORMATION AS REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 2001

(A)(B)(E)(F)(G)(J) AND (L) - AS SHOWN ON THIS PLAN.
(C) - AS SHOWN ON THIS DRAFT AND KEY PLAN
(D) - LAND TO BE USED IN ACCORDANCE WITH THE SCHEDULE OF LAND USE.
(H)(K) - FULL MUNICIPAL SERVICES
(I) - OFFSHORE MARINE DEPOSITS OF CLAY, SILTY CLAY AND SILT, BEDROCK OTTAWA FORMATION, LIMESTONE

KEY PLAN
(NOT TO SCALE)



DRAFT PLAN OF SUBDIVISION
PART OF LOTS 13 AND 14 CONCESSION 3 (RIDEAU FRONT) PART OF LOTS 13 AND 14 CONCESSION 4 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF NEPEAN
CITY OF OTTAWA
SCALE 1:1500

J.D. BARNES LIMITED
© COPYRIGHT 2022
METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

OWNER'S CERTIFICATE
BARRHAVEN CONSERVANCY DEVELOPMENT CORPORATION, BEING THE REGISTERED OWNER OF THE SUBJECT LANDS HEREBY AUTHORIZES J. D. BARNES LIMITED TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION FOR APPROVAL.

DATE

FRANK CAIRO
PRESIDENT
'I HAVE THE AUTHORITY TO BIND THE CORPORATION'

SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ARE CORRECTLY SHOWN.

DATE

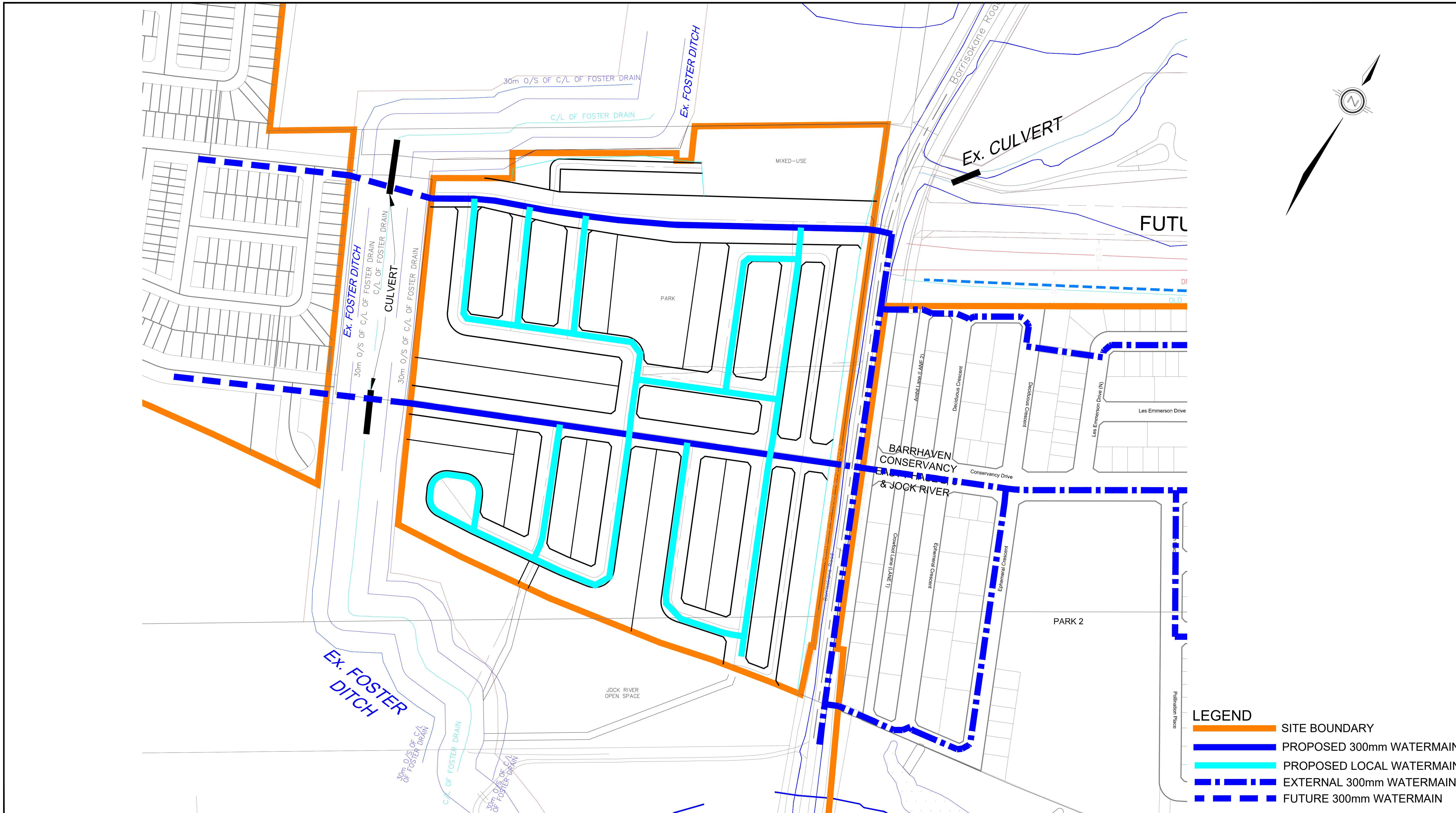
FOR REVIEW
C.M. FOX
ONTARIO LAND SURVEYOR

FIGURE 2B
2022 PROPOSED REVISED DRAFT PLAN

J.D.BARNES LIMITED — SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
62 STEACIE DRIVE, SUITE 103, KANATA, ON K2K 2A9
T: (613) 731-7244 F: (613) 254-8659 www.jdbarnes.com

DRAWN BY: NS	CHECKED BY: CF	REFERENCE NO.: 16-10-127-00-DP
FILE: G:16-10-127\00\Drawings\Draft Plan\Overall?-10-127-00DraftPlanC.dgn		DATED: 12/1/2022

JDB V.2022.11



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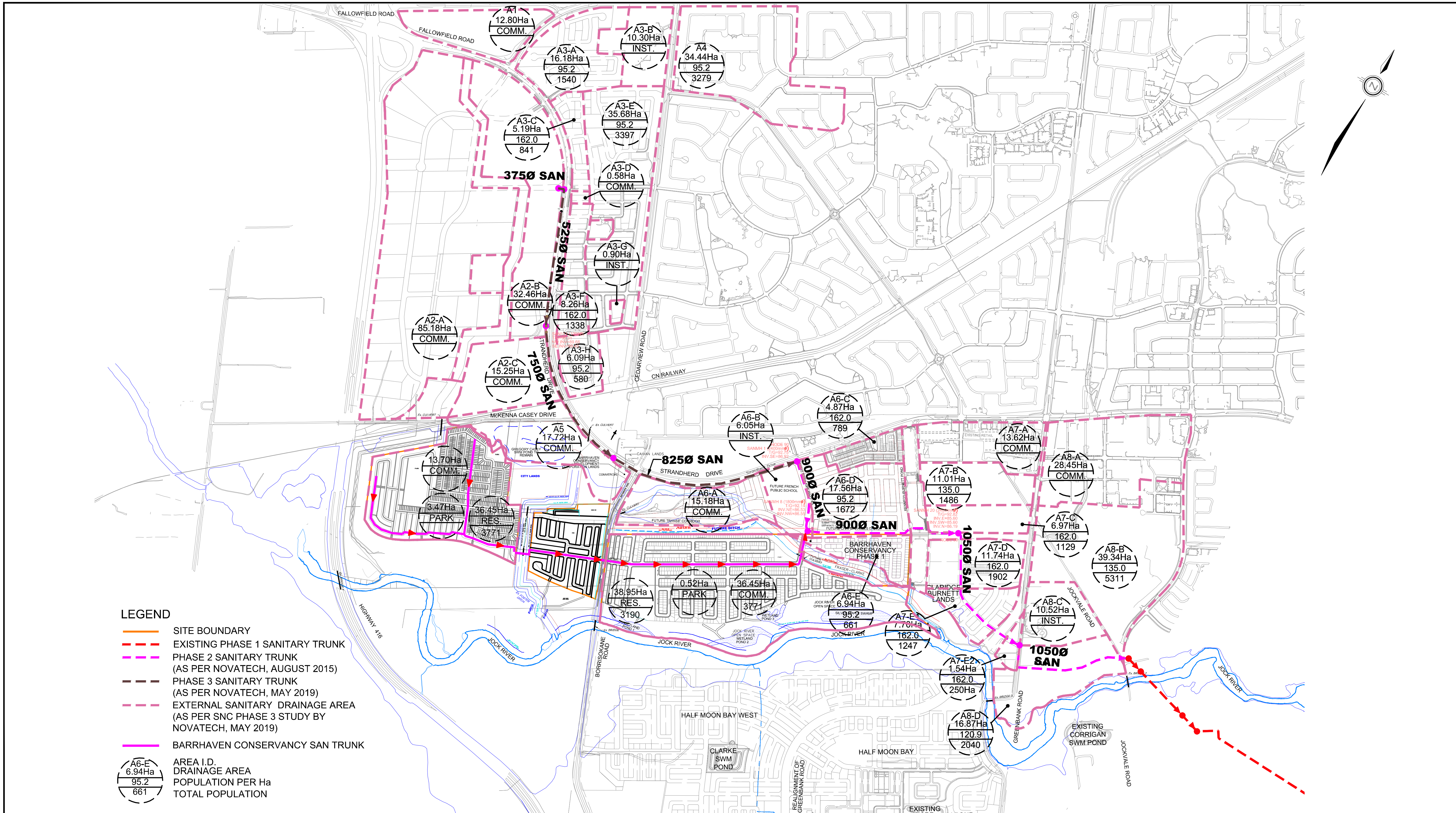
BARRHAVEN CONSERVANCY EAST PHASE 5
WATERMAIN SERVICING PLAN
CITY OF OTTAWA

PROJECT No.:	20-1180 A-5
SCALE:	1:3000
DATE:	DECEMBER 2022
FIGURE:	3



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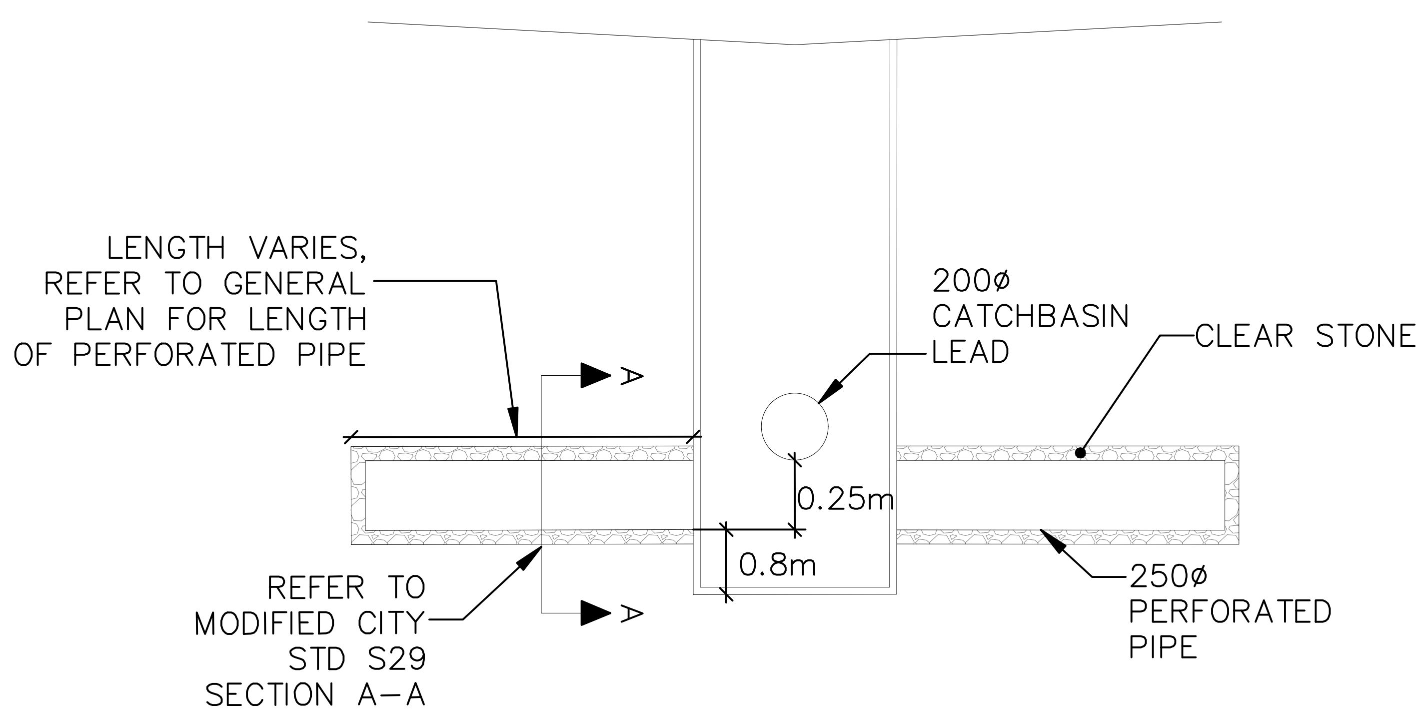
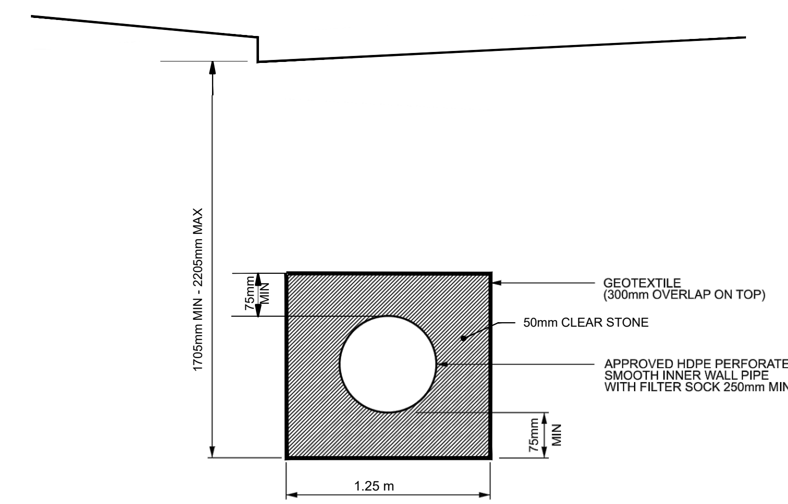
BARRHAVEN CONSERVANCY EAST PHASE 5
EXTERNAL SANITARY SERVICING
CITY OF OTTAWA

PROJECT No.:	20-1180 A-5
SCALE:	1:18000
DATE:	DECEMBER 2022
FIGURE:	4





SECTION A–A: MODIFIED CITY STD S29

SCALE: N.T.S.

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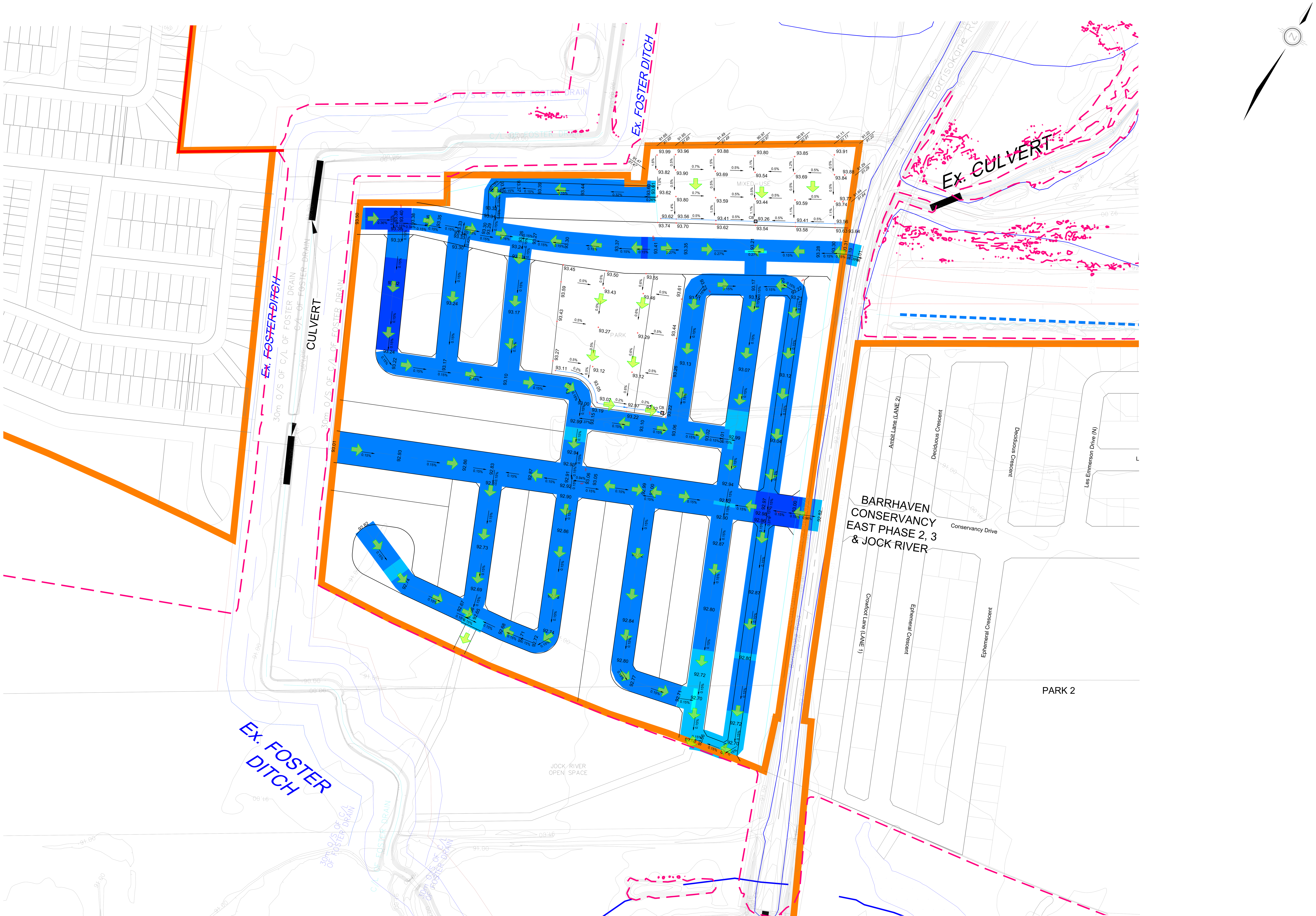
BARRHAVEN CONSERVANCY EAST PHASE 5
FILTRATION SYSTEM DETAILS
CITY OF OTTAWA

PROJECT No.:	20-1180 A-5
SCALE:	NTS
DATE:	DECEMBER 2022
FIGURE:	5



LEGEND

Symbol	Description
	SITE BOUNDARY
	STORM OVERLAND FLOW ARROW
192.85	PROPOSED CENTERLINE ELEVATION
193.50 / 193.50	PROPOSED ELEVATION / EXISTING ELEVATION
244.50	EXISTING CONTOUR ELEVATION
	2019 RVCA APPROVED FLOODLINE BOUNDARY
	PROPOSED FLOODLINE PER MARCH 2021 RVCA APPLICATION

CUT-FILL DEPTH ALONG CENTER LINE:

CUT DEPTH (m)		FILL DEPTH (m)	
0.00~0.50:		0.00~0.50:	
0.50~1.00:		0.50~1.00:	
1.00~1.50:		1.00~1.50:	
1.50~2.00:		1.50~2.00:	
>2.00		>2.00	

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BARRHAVEN CONSERVANCY EAST PHASE 5
CONCEPTUAL GRADING PLAN
CITY OF OTTAWA

PROJECT No. :	20-1180 A-5
SCALE:	1:1000
DATE:	DECEMBER 2022
DRAWING No.	1

LEGEND

SITE BOUNDARY	STORM MANHOLE
STORM TRUNK SEWER	SANITARY MANHOLE
STORM LOCAL SEWER	
SANITARY TRUNK SEWER	
SANITARY LOCAL SEWER	
EXTERNAL SANITARY TRUNK SEWER	
PROPOSED 300mm WATERMAIN	
PROPOSED LOCAL WATERMAIN	
FUTURE 300mm WATERMAIN	
FUTURE 300mm WATERMAIN	
EXTERNAL 300mm WATERMAIN	

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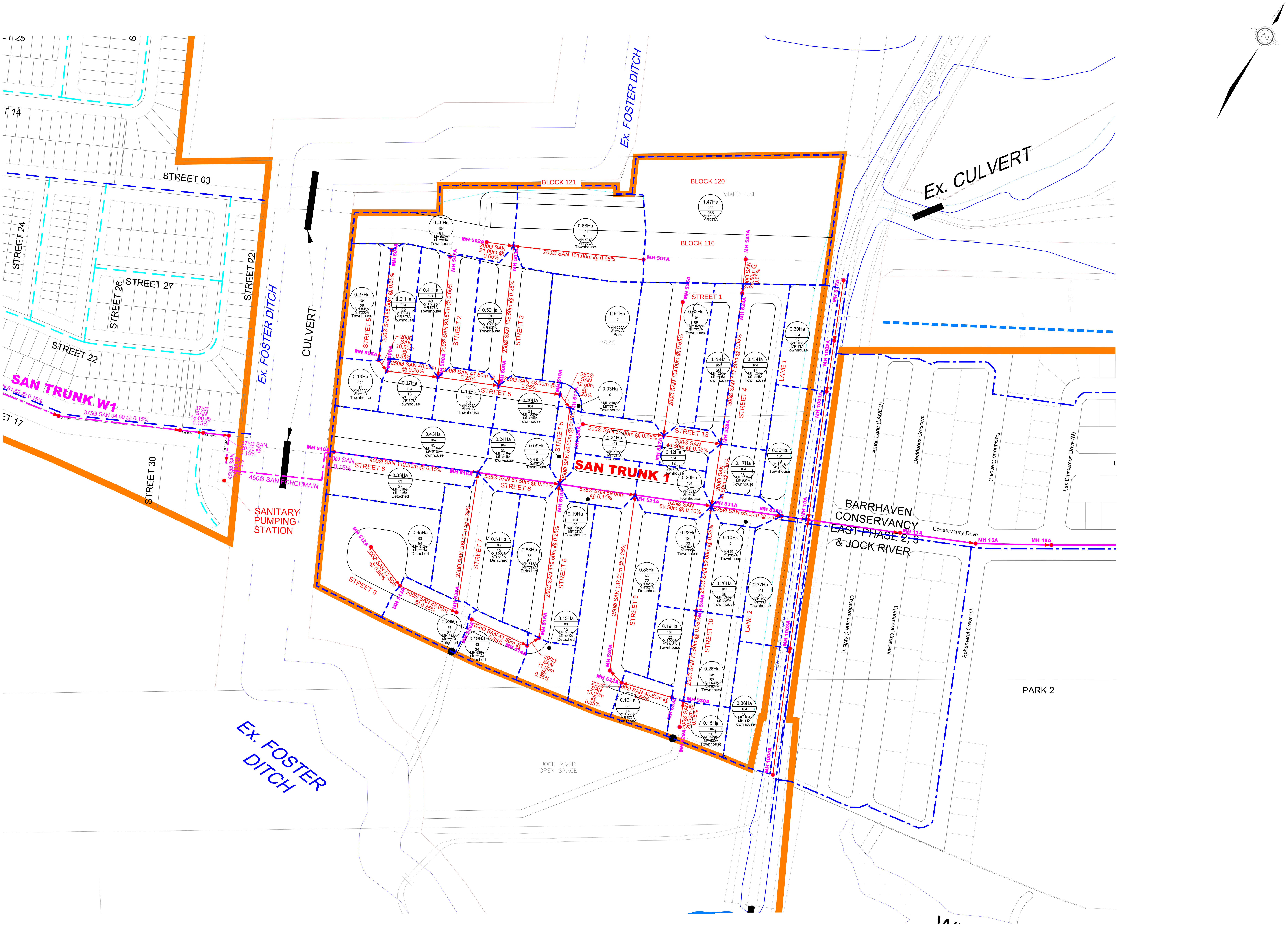
BARRHAVEN CONSERVANCY EAST PHASE 5
CONCEPTUAL SERVICING PLAN
CITY OF OTTAWA

PROJECT No. :	20-1180 A-5
SCALE:	1:1000
DATE:	DECEMBER 2022
DRAWING No.	2



LEGEND

SITE BOUNDARY
SANITARY TRUNK SEWER
SANITARY LOCAL SEWER
EXTERNAL SANITARY TRUNK SEWER
SANITARY MANHOLE
SANITARY TRIBUTARY AREA

0.19Ha / 104 / 20 / MH 505A / Townhouse: AREA IN HECTARES, POPULATION PER HECTARE, POPULATION, AREA TYPE

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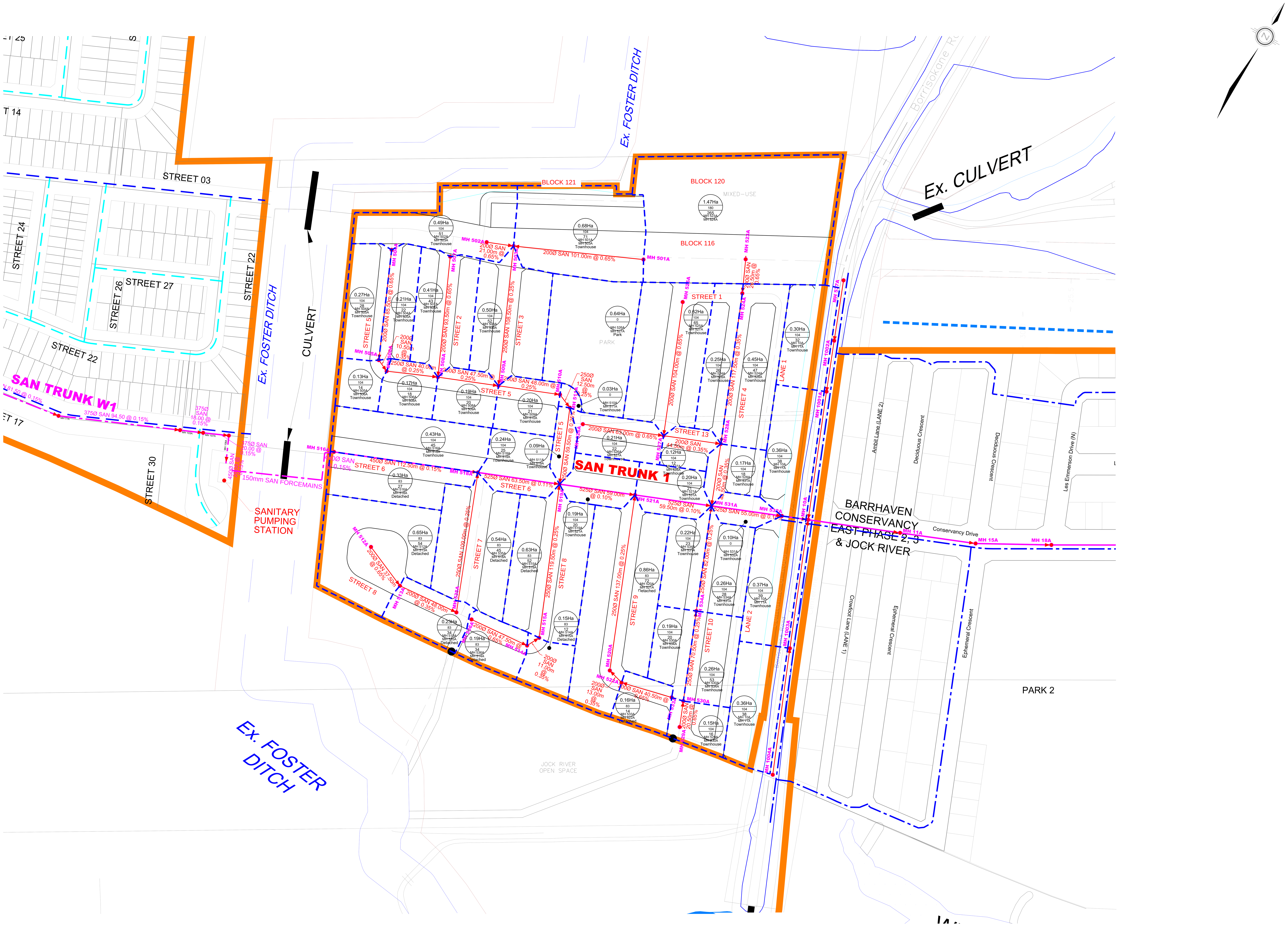
BARRHAVEN CONSERVANCY EAST PHASE 5

SANITARY TRIBUTARY AREA

CITY OF OTTAWA

PROJECT No. :	20-1180 A-5
SCALE:	1:1000
DATE:	DECEMBER 2022
DRAWING No.	4



LEGEND

SITE BOUNDARY	
SANITARY TRUNK SEWER	
SANITARY LOCAL SEWER	
EXTERNAL SANITARY TRUNK SEWER	
SANITARY MANHOLE	
SANITARY TRIBUTARY AREA	

0.19Ha / 104 / 20 / MH 505A / Townhouse — AREA IN HECTARES, POPULATION PER HECTARE, POPULATION, AREA TYPE

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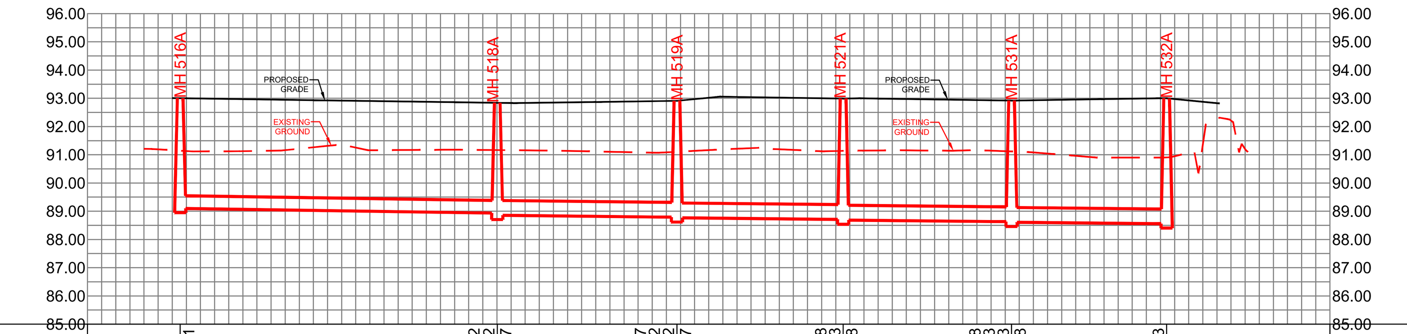
BARRHAVEN CONSERVANCY EAST PHASE 5

SANITARY TRIBUTARY AREA

CITY OF OTTAWA

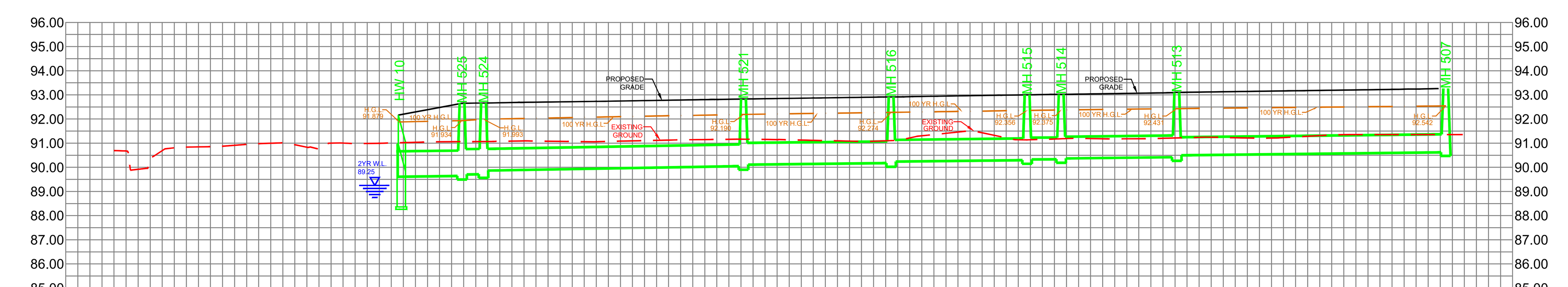
PROJECT No. :	20-1180 A-5
SCALE:	1:1000
DATE:	DECEMBER 2022
DRAWING No.	4

SAN TRUNK 1



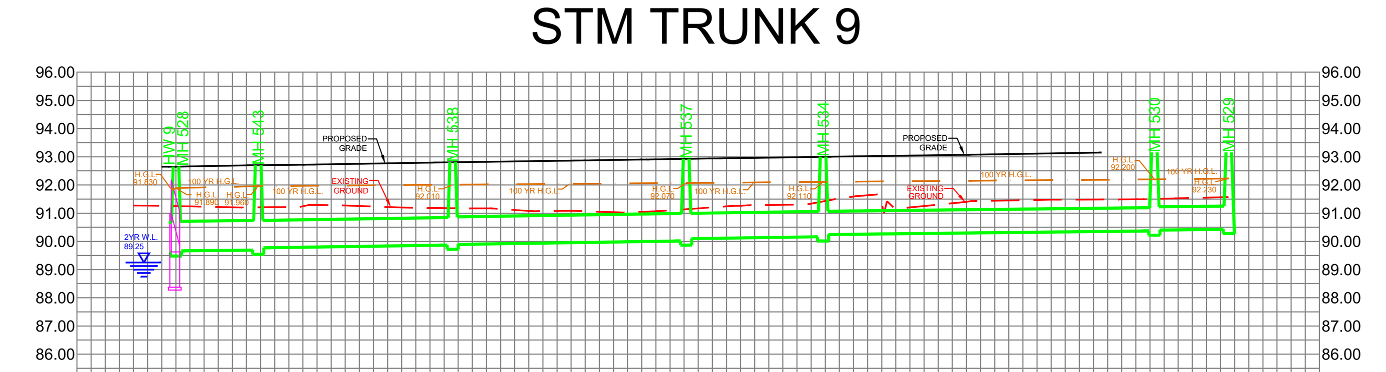
CENTERLINE CHAINAGE	PROPOSED GRADES	SANITARY INVERT
0+002.821	93.005	E 89.101
		450Ø SAN 112.5 @ 0.15%
0+115.113	92.838	W 88.932 S 89.132 E 88.857
		525Ø SAN 63.5 @ 0.11%
0+178.754	92.910	W 88.787 SW 89.042 NE 89.042 SE 88.767
		525Ø SAN 59.0 @ 0.10%
0+237.629	92.990	NW 88.708 S 88.963 SE 88.688
		525Ø SAN 59.5 @ 0.10%
0+297.267	92.920	NW 88.628 S 88.883 NE 88.933 SE 88.608
		525Ø SAN 55.0 @ 0.10%
0+352.192	93.000	NW 88.553

STM TRUNK 10



CENTERLINE CHAINAGE	PROPOSED GRADES	STORM INVERT
0+105.428	92.692	N 89.609
		1050Ø STM 32.0 @ 0.11%
0+134.333	92.650	S 89.644 W 89.704
		1050Ø STM 8.0 @ 0.11%
0+143.245	92.660	E 89.713 N 89.863
		900Ø STM 110.0 @ 0.17%
0+251.040	92.830	S 90.050 E 90.110
		900Ø STM 58.0 @ 0.11%
0+312.267	92.914	W 90.174 N 90.234
		900Ø STM 56.5 @ 0.11%
0+368.664	93.000	S 90.296 NW 90.326
		900Ø STM 8.5 @ 0.11%
0+382.788	93.020	SE 90.335 W 90.365
		900Ø STM 51.0 @ 0.11%
0+430.740	93.100	E 90.421 NW 90.496
		750Ø STM 114.5 @ 0.11%
0+542.267	93.260	SE 90.622

STM TRUNK 9



CENTERLINE CHAINAGE	PROPOSED GRADES	STORM INVERT
0+000.896	92.650	S 89.631
		1050Ø STM 4.5 @ 0.20%
0+005.040	92.651	N 89.622 N 89.661
		1050Ø STM 29.0 @ 0.11%
0+034.180	92.702	S 89.693 N 89.768
		975Ø STM 69.0 @ 0.15%
0+103.037	92.804	S 89.872 N 89.892
		975Ø STM 83.0 @ 0.15%
0+185.746	92.925	S 90.017 N 90.092
		900Ø STM 48.5 @ 0.15%
0+234.245	93.002	S 90.165 N 90.240
		825Ø STM 117.0 @ 0.11%
0+351.571	93.150	S 90.369 NW 90.399
		825Ø STM 26.5 @ 0.11%
0+377.916	93.150	SE 90.428

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BARRHAVEN CONSERVANCY EAST PHASE 5
SANITARY AND STORM TRUNK PROFILES
CITY OF OTTAWA

PROJECT No. :	20-1180 A-5
SCALE:	1:1500
DATE:	DECEMBER 2022
DRAWING No.	5

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

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 4357-CHMQEM
Issue Date: September 1, 2022

Barrhaven Conservancy Development Corporation
2934 Baseline Road, Suite 302
Ottawa, Ontario
K2H 1B2

Site Location: Barrhaven Conservancy East - Phase 2, 3 & Jock River
Part of Lots 13 & 14 (Rideau Front)
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:

the establishment of wastewater infrastructure Works located in the City of Ottawa, consisting of the following:

- **sanitary sewers** on Les Emmerson Drive (N)(from Station 0+000.000 to Station 0+720.000), Les Emmerson Drive (S) (from Station 0+000.000 to Station 0+660.000), Conservancy Drive (from Station 0-010.000 to Station 0+973.545), Peninsula Road (from Station 0+010.058 to Station 0+703.797), Sapling Grove (from Station 0+000.000 to Station 0+528.245), Canoe Street (from Station 0+000.000 to Station 0+491.136), Deciduous Crescent (from Station 0+002.000 to Station 0+328.189), Ephemeral Crescent (from Station 0+000.000 to Station 0+492.987), Mineral Street (from Station 0+242.832 to Station 0+000.000), Pollination Place (from Station 0+002.985 to Station 0+433.904), Gallium Crescent (from Station 0+002.728 to Station 0+321.940), Syringa Court (from Station 0+000.000 to Station 0+332.328), Anemone Mews (from Station 0+242.833 to Station 0+059.755), Ainsworth Crescent (from Station 0+002.715 to Station 0+353.228), Ecology Lane (from Station 0+205.411 to Station 0+007.658), Meander Way (from Station 0+002.747 to Station 0+333.559), Elation Heights (from Station 0+000.000 to Station 0+380.000), Jollity Crescent (from Station 0+001.794 to Station 0+221.612), Euphoria Crescent (from Station 0+000.000 to Station 0+170.000), and on Borrisokane Road (from Station 0+168.736 to Station 0+507.126), all discharging to the existing South Nepean Collector sanitary sewer; and

- **storm sewers** on Les Emmerson Drive (N) (from Station 0+002.919 to Station 0+718.915), Les Emmerson Drive (S) (from Station 0-002.269 to Station 0+676.895), Conservancy Drive (from Station 0+020.468 to Station 0+961.195), Peninsula Road (from Station 0-001.986 to Station 0+705.797), Sapling Grove (from Station 0-010.000 to Station 0+526.245), Canoe Street (from Station 0+000.000 to Station 0+493.136), Deciduous Crescent (from Station 0+004.500 to Station 0+324.827), Ephemeral Crescent (from Station 0-002.063 to Station 0+495.738), Mineral Street (from Station 0+244.847 to Station 0+002.015), Pollination Place (from Station 0+000.000 to Station 0+424.262), Gallium Crescent (from Station 0+000.000 to Station 0+325.307), Syringa Court (from Station 0-001.985 to Station 0+334.348), Anemone Mews (from Station 0+244.843 to Station 0+001.982), Ainsworth Crescent (from Station 0+000.000 to Station 0+354.443), Ecology Lane (from Station 0+207.411 to Station 0+006.523), Meander Way (from Station 0+016.643 to Station 0+335.359), Elation Heights (from Station 0+000.000 to Station 0+381.539), Jollity Crescent (from Station 0+003.277 to Station 0+220.000), Euphoria Crescent (from Station 0+003.400 to Station 0+157.175), Lane 1 (Crowfoot Lane) (from Station 0-002.000 to Station 0+201.525), and on Lane 2 (Ambit Lane) (from Station 0+002.000 to Station 0+127.5060), proposed storm sewers collect flows from the subdivision and discharge to the Jock River and the Fraser-Clarke Watercourse which is an existing tributary to the Jock River;

the modification of a section of the Fraser-Clarke Watercourse to accommodate stormwater outflows from Phase 2 of the Barrhaven Conservancy East Subdivision development, for the collection and transmission of stormwater runoff for all storm events up to and including the 100-year storm event, discharging to the Jock River, consisting of the following:

- **approximately 950 metres long modified channel,** located along the northern boundary of the Barrhaven Conservancy East Phase 2, 3 & Jock River, having a channel gradient of 0.09% and 3:1 side slopes, complete with low flow path and riffle-pool sequences and erosion protection structures, including two (2) 2.4 metre by 1.2 metre box culverts under the future Canoe Street crossing, discharging to the Jock River;

the establishment of stormwater management Works to serve the Barrhaven Conservancy East – Phase 2, 3 & Jock River development, located in the City of Ottawa, for the collection, transmission, treatment and disposal of stormwater runoff from a total catchment area of 44.17 hectares, to provide Enhanced Level protection and to provide on-site retention of 22.5 cubic metres per hectare, discharging to proposed storm sewers, consisting of the following:

- **subsurface infiltration trenches (catchment area 41.81 hectares),** located on-site within proposed roadways, having a total length of 3,514 metres, a width of 1.75 metres, a base area of 6,150 square metres, a maximum allowable storage depth of 0.40 metres and a maximum available storage volume of 1,087 cubic metres, comprised of a 75 millimetre deep clear stone layer overlying a geotextile non-woven filter fabric, complete with a 250 millimetre diameter perforated storm sub-drain installed in the clear stone layer, installed at select street catch basin manhole locations;

the establishment of stormwater management Works to serve Steeves & Rozema Enterprises Limited, located in the City of Sarnia, consisting of the following:

- **oil and grit separator (catchment area 5.52 hectares):** one (1) oil and grit separator (OGS1), CDS Model PMSU4040-8 or Equivalent Equipment, located within the Canoe Street right-of-way, providing a Predicted Net Annual Load Removal Efficiency of 83%, having a sediment storage capacity of 4,270 litres, an oil storage capacity of 1,970 litres, a total storage volume of approximately 10,910 litres, and a maximum treatment rate of 170 litres per second, receiving inflow from the storm sewer located within the Canoe Street right-of-way, discharging via a 975 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 5.59 hectares):** one (1) oil and grit separator (OGS2), CDS Model PMSU4040-8 or Equivalent Equipment, located within Servicing Block 767, providing a Predicted Net Annual Load Removal Efficiency of 82.1%, having a sediment storage capacity of 4,270 litres, an oil storage capacity of 1,970 litres, a total storage volume of approximately 10,910 litres, and a maximum treatment rate of 170 litres per second, receiving inflow from the storm sewer located within the Block 767 and Meander Way right-of-way, discharging via a 975 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 6.77 hectares):** one (1) oil and grit separator (OGS3), CDS Model PMSU4045-8 or Equivalent Equipment, located within the Ainsworth Crescent right-of-way, providing a Predicted Net Annual Load Removal Efficiency of 82.4%, having a sediment storage capacity of 4,270 litres, an oil storage capacity of 2,149 litres, a total storage volume of approximately 11,510 litres, and a maximum treatment rate of 212 litres per second, receiving inflow from the storm sewer located within the Ainsworth Crescent right-of-way, discharging via a 975 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 8.42 hectares):** one (1) oil and grit separator (OGS5), CDS Model PMSU5640-10 or Equivalent Equipment, located within Servicing Block 766, providing a Predicted Net Annual Load Removal Efficiency of 81.7%, having a sediment storage capacity of 6,672 litres, an oil storage capacity of 2,869 litres, a total storage volume of approximately 17,070 litres, and a maximum treatment rate of 255 litres per second, receiving inflow from the storm sewer located within Block 766 and the Gallium Crescent right-of-way, discharging via a 1050 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 5.46 hectares):** one (1) oil and grit separator (OGS6), CDS Model PMSU3035-8 or Equivalent Equipment, located within Servicing Block 765, providing a Predicted Net Annual Load Removal Efficiency of 80.0%, having a sediment storage capacity of 4,270 litres, an oil storage capacity of 1,493 litres, a total storage volume of approximately 10,210 litres, and a maximum treatment rate of 108 litres per second, receiving inflow from the storm sewer located within Block 766 and the Pollination Place right-of-way, discharging via a 900 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 5.05 hectares):** one (1) oil and grit separator (OGS7), CDS Model PMSU4040-8 or Equivalent Equipment, located within the Ephemeral Crescent right-of-way, providing a Predicted Net Annual Load Removal Efficiency of 82.3%, having a sediment storage capacity of 4,270 litres, an oil storage capacity of 1,970 litres, a total storage volume of approximately 10,910 litres, and a maximum treatment rate of 170 litres per second, receiving inflow from the storm sewer located within the Ephemeral Crescent right-of-way, discharging via a 900 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 4.52 hectares):** one (1) oil and grit separator (OGS8), CDS Model PMSU4040-8 or Equivalent Equipment, located within Servicing Block 744, providing a Predicted Net Annual Load Removal Efficiency of 82.1%, having a sediment storage capacity of 4,270 litres, an oil storage capacity of 1,970 litres, a total storage volume of approximately 10,910 litres, and a maximum treatment rate of 170 litres per second, receiving inflow from the storm sewer located within the Borrisokane Road right-of-way, discharging via a 1200 millimetre diameter outlet pipe to an outlet channel on Block 774 and connecting to the Jock River;

- **oil and grit separator (catchment area 1.63 hectares):** one (1) oil and grit separator (OGS12), CDS Model PMSU2025-5 or Equivalent Equipment, located within Servicing Block 317, providing a Predicted Net Annual Load Removal Efficiency of 81.1%, having a sediment storage capacity of 1,668 litres, an oil storage capacity of 439 litres, a total storage volume of approximately 3,330 litres, and a maximum treatment rate of 45 litres per second, receiving inflow from the storm sewer located within the Les Emmerson Drive right-of-way, discharging via a 600 millimetre diameter outlet pipe to an outlet channel connecting to the Fraser-Clarke watercourse;

- **oil and grit separator (catchment area 1.21 hectares):** one (1) oil and grit separator (OGS13), CDS Model PMSU2020-5 or Equivalent Equipment, located within the Deciduous Crescent right-of-way, providing a Predicted Net Annual Load Removal Efficiency of 80.1%, having a sediment storage capacity of 1,668 litres, an oil storage capacity of 376 litres, a total storage volume of approximately 3,150 litres, and a maximum treatment rate of 31litres per second, receiving inflow from the storm sewer located within the Deciduous Crescent right-of-way, discharging via a 600 millimetre diameter outlet pipe to an outlet channel connecting to the Fraser-Clarke watercourse;

including erosion/sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the submitted application and supporting documents listed in Schedule "A" forming part of this Approval.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this entire document and any schedules attached to it, and the application;

2. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

3. "District Manager" means the District Manager of the appropriate local District Office of the Ministry, where the Works are geographically located;

4. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19, as amended;

5. "Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and performance standards of the approved named equipment.

6. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

7. "Owner" means Barrhaven Conservancy Development Corporation, and includes its successors and assignees;

8. "OWRA" means the *Ontario Water Resources Act, R.S.O. 1990, c. O.40* , as amended;

9. "Works" means the sewage Works described in the Owner's application, and this Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITIONS

1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. Except as otherwise provided by these Conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

3. Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.

4. Where there is a conflict between the documents listed in Schedule "A" and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

5. The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. EXPIRY OF APPROVAL

1. This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

2. In the event that completion and commissioning of any portion of the Works is anticipated to be delayed beyond the specified expiry period, the Owner shall submit an application of extension to the expiry period, at least twelve (12) months prior to the end of the period. The application for extension shall include the reason(s) for the delay, whether there is any design change(s) and a review of whether the standards applicable at the time of Approval of the Works are still applicable at the time of request for extension, to ensure the ongoing protection of the environment.

3. CHANGE OF OWNER

1. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

    a. change of Owner;

    b. change of address of the Owner;

    c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act,* R.S.O. 1990, c.B17 shall be included in the notification to the District Manager; or

d. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the *Corporations Information Act,* R.S.O. 1990, c. C39 shall be included in the notification to the District Manager.

2. In the event of any change in ownership of the Works, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager and the Director.

3. The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

4. OPERATION AND MAINTENANCE

1. If applicable, any proposed storm sewers or other stormwater conveyance in this Approval can be constructed but not operated until the proposed stormwater management facilities in this Approval or any other Approval that are designed to service the storm sewers or other stormwater conveyance are in operation.

2. The Owner shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the Works do not constitute a safety or health hazard to the general public.

3. The Owner shall undertake an inspection of the condition of the Works, at least once a year, and undertake any necessary cleaning and maintenance to ensure that sediment, debris and excessive decaying vegetation are removed from the Works to prevent the excessive build-up of sediment, oil/grit, debris and/or decaying vegetation, to avoid reduction of the capacity and/or permeability of the Works, as applicable. The Owner shall also regularly inspect and clean out the inlet to and outlet from the Works to ensure that these are not obstructed.

4. The Owner shall construct, operate and maintain the Works with the objective that the effluent from the Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam or discoloration on the receiving waters.

5. The Owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the Owner's administrative office for inspection by the Ministry. The logbook shall include the following:

   a. the name of the Works; and

   b. the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed and method of clean-out of the Works.

6. The Owner shall prepare an operations manual prior to the commencement of operation of the Works that includes, but is not necessarily limited to, the following information:

    a. operating and maintenance procedures for routine operation of the Works;

    b. inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

    c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;

    d. contingency plans and procedures for dealing with potential spills and any other abnormal situations and for notifying the District Manager; and

    e. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

7. The Owner shall maintain the operations manual current and retain a copy at the Owner's administrative office for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

5. TEMPORARY EROSION AND SEDIMENT CONTROL

1. The Owner shall install and maintain temporary sediment and erosion control measures during construction and conduct inspections once every two (2) weeks and after each significant storm event (a significant storm event is defined as a minimum of 25 mm of rain in any 24 hours period). The inspections and maintenance of the temporary sediment and erosion control measures shall continue until they are no longer required and at which time they shall be removed and all disturbed areas reinstated properly.

2. The Owner shall maintain records of inspections and maintenance which shall be made available for inspection by the Ministry, upon request. The record shall include the name of the inspector, date of inspection, and the remedial measures, if any, undertaken to maintain the temporary sediment and erosion control measures.

6. REPORTING

1. One (1) week prior to the start-up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.

2. The Owner shall, upon request, make all reports, manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

3. The Owner shall prepare a performance report within ninety (90) days following the end of the period being reported upon, and submit the report(s) to the District Manager when requested. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be prepared to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

   a. a description of any operating problems encountered and corrective actions taken;

   b. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works, including an estimate of the quantity of any materials removed from the Works;

   c. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

   d. a summary of all spill or abnormal discharge events; and

   e. any other information the District Manager requires from time to time.

7. RECORD KEEPING

1. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation, maintenance and monitoring activities required by this Approval.

Schedule "A"

1. Application for Environmental Compliance Approval, dated August 9, 2022 and received on August 17, 2022, submitted by Barrhaven Conservancy Development Corporation;

2. Transfer of Review Letter of Recommendation, dated August 17, 2022 and signed by Jeff Shillington, P.Eng., Senior Poject Manager, Development Review, City of Ottawa , including the following supporting documents:

   a. Final Plans and Specifications prepared by David Schaeffer Engineering Ltd.

   b. Pipe Data Form - Watermain, Storm Sewer, Sanitary Sewer, and Forcemain Design Supplement to Application for Approval for Water and Sewage Works.

   c. Hydraulic Design Sheets prepared by David Schaeffer Engineering Ltd.

   d. Stormwater Management Report prepared by David Schaeffer Engineering Ltd.

   e. Design brief, calculations and specifications prepared by David Schaeffer Engineering Ltd.

3. Email received on August 25, 2022 from Jeff Shillington, City of Ottawa.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted. This condition is also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included as regular inspection and necessary removal of sediment and excessive decaying vegetation from the Works are required to mitigate the impact of sediment, debris and/or decaying vegetation on the treatment capacity of the Works. The Condition also ensures that adequate storage is maintained in the Works at all times as required by the design. Furthermore, this Condition is included to ensure that the Works are operated and maintained to function as designed.

5. Condition 5 is included as installation, regular inspection and maintenance of the temporary sediment and erosion control measures is required to mitigate the impact on the downstream receiving watercourse during construction until they are no longer required.

6. Condition 6 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

7. Condition 7 is included to require that all records are retained for a sufficient time period to adequately evaluate the long-term operation and maintenance of the Works.

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me and the Ontario Land 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 ("the Notice") shall state:

a. 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;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. 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:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act* Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.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 1st day of September, 2022

A. Ahmed

Aziz Ahmed, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

RR/
c: District Manager, MECP Ottawa District Office
Clerk, City of Ottawa (File No. D07-16-20-0021)
Jeff Shillington, P.Eng., Senior Poject Manager, Development Review, City of Ottawa
Kevin Murphy, David Shaeffer Engineering Ltd.

APPENDIX B

WATER SUPPLY

Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River): Water Distribution System Analysis

Final Report

June 2, 2022

Prepared for:

David Schaeffer Engineering Ltd.

Prepared by:

Stantec Consulting Ltd.

Revision	Description	Author		Quality Check		Independent Review	
0	Final	TAW	20211213	JS	20211214	KA	20211216
1	Final	TAW/AMG	20220512	AMG	20220516	AP	20220518
2	Final	TAW/AMG	20220602	AMG	20220602	AP	20220602

Prepared by ____
(signature)
Thomas Westwood, M.Eng., P.Eng.

Prepared by ____
(signature)
Alexandre Mineault-Guitard, M.Sc.A., ing., P.Eng.

Reviewed by ____
(signature)
Alexandre Mineault-Guitard, M.Sc.A., ing., P.Eng.

Approved by ____
(signature)
Ana Paerez, P.Eng.

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1.0 INTRODUCTION

To support David Schaeffer Engineering Ltd (DSEL) with their conceptual design submission for the Barrhaven Conservancy East development lands (Phases 2, 3, 4 and Jock River), Stantec Consulting Ltd (Stantec) was requested to provide engineering services to complete a water distribution system analysis for this proposed development located within the City of Ottawa's (City) South Urban Community (SUC). The purpose of the analysis is to confirm associated watermain sizing and redundancy needs.

For this assignment, Stantec's scope of work included the following tasks:

1) Reviewing background information and establishing updated water demands for the Conservancy East development area based on the most current draft plan;
2) Preparing and submitting a boundary condition request to the City;
3) Preparing a stand-alone hydraulic model of the distribution system within the Conservancy East lands using boundary conditions provided by the City. The backbone watermain planning model used for previous planning-level analyses will be used as a base;
4) Assessing Fire Underwriters Survey (FUS) fire flow requirements;
5) Setting up and running model simulations for average day (AVDY), peak hour (PKHR), and maximum day (MXDY) plus fire flow demands to identify watermain sizing and redundancy needs required for the water distribution system within the development lands to meet design criteria; and,
6) Documenting the approach used, findings and recommendations from the analysis.

1.1 STUDY AREA

The study area, referred to as the Barrhaven Conservancy East development lands, is located in the City's southwestern suburban neighbourhood of Barrhaven. The lands are situated between Strandherd Dr to the north, the Jock River to the south, Fraser-Clark Drain to the east, and bisected by Borrisokane Rd through the western portion. Based on the current site plan provided by DSEL (dated October 13, 2021) and additional sub-phasing information (dated March 9, 2022), the proposed development is to be subdivided into four (4) phases, which are further described in **Section 1.2**. The proposed development will comprise a total of 782 single family home (SFH) units and 606 townhouse (MLT) units (consisting of a combination of rear-lane, back-to-back and standard townhouse units) for a total estimated population of 4,295 persons.

Based on a previously completed serviceability study for these lands (Stantec Consulting Ltd., 2021), this residential community, which is currently situated adjacent to Pressure Zone 3SW (previously known as

Zone BARR), is ultimately planned to be serviced by the future Zone SUC. In 2015, the City embarked on a large initiative to reconfigure the pressure zones servicing Barrhaven and the southern reaches of Ottawa (i.e., SUC). The City has indicated that the pressure zone reconfiguration is planned to be completed by the second quarter (Q2) of 2024.The purpose of the zone reconfiguration was to improve reliability and efficiencies, and to provide increased pumping capacity for future growth. As such, these development lands are to be serviced by two connections to the existing distribution network, both of which are currently part of Zone 3SW and will ultimately be part of Zone SUC. These include the following locations as shown in **Figure 1-1**:

1) The existing 305 mm stub extending from Chapman Mills Dr (east of Kennedy-Burnett Pond); and
2) The T-junction on the existing 203 mm watermain at Danson Gardens Grv and Darjeeling Ave.

Both connections would require crossing the Kennedy-Burnett Pond and the Fraser-Clarke Drain.

The City has also suggested that a third connection be considered, which is also illustrated in **Figure 1-1**. This potential third connection is located south of the Jock River, at a future 305 mm stub at the intersection of Flagstaff Dr and Borrisokane Rd, and would require crossing the Jock River to service the proposed development lands. The serviceability of the development lands using this third connection is also analyzed herein.

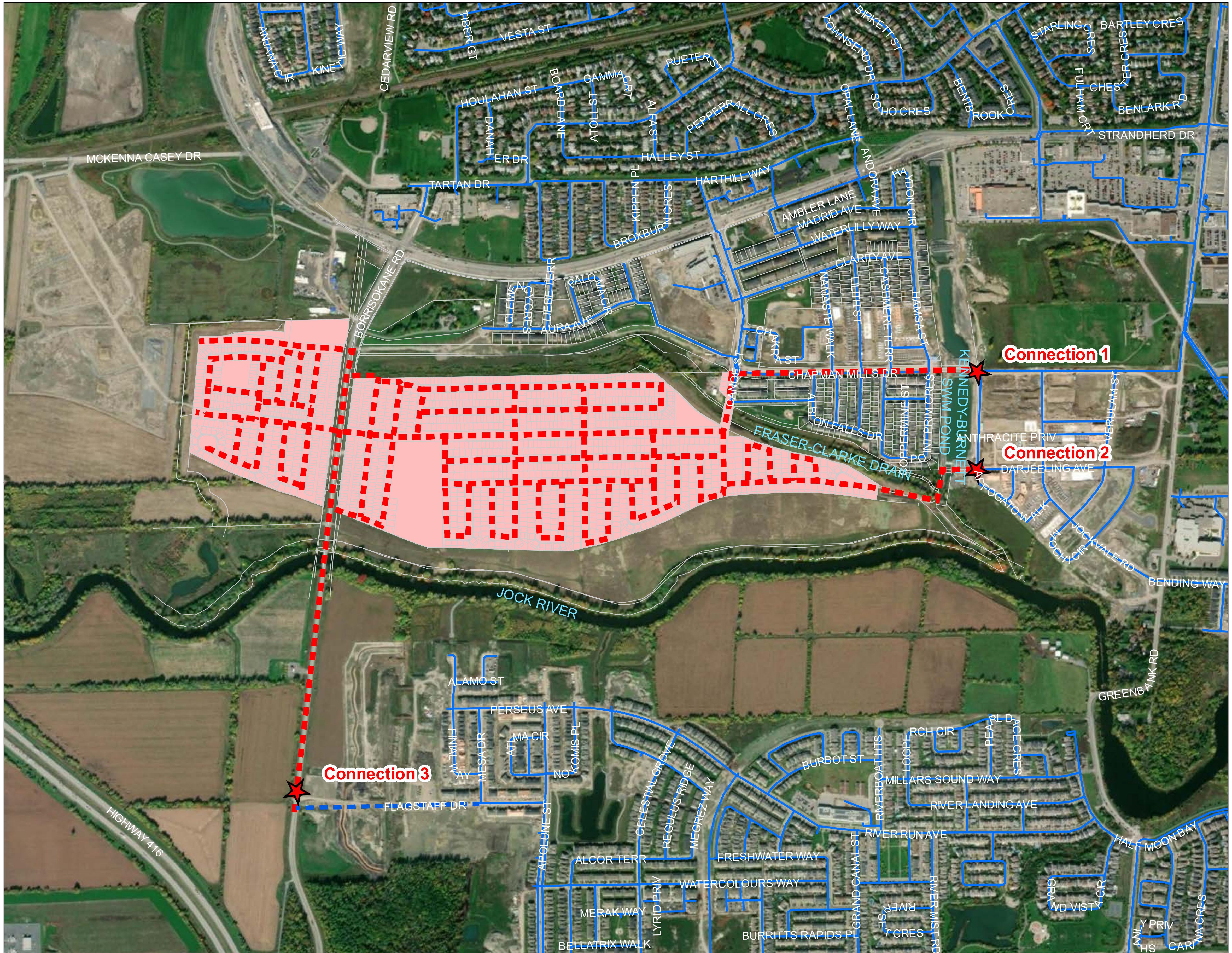
1.2 PHASING OF BARRHAVEN CONSERVANCY EAST

For the purpose of this assessment, development within Barrhaven Conservancy East, as shown in **Figure 1-2**, is assumed to occur in the following phasing order:

1) Phase 2 – Comprising 240 SFH units, 98 MLT units and two park areas. The townhouses in this phase are a combination of rear-lane and standard townhouse units. Phase 2 will consist of three (3) subphases:
    - Phase 2A – Comprising 102 SFH units and one park area.
    - Phase 2B – Comprising 129 SFH units.
    - Phase 2C – Comprising 9 SFH units, 98 MLT units and one park area.
2) Phase 3 – Comprising 128 SFH units and 197 MLT units. As with Phase 2, these townhouses are a combination of rear-lane and standard townhouse units. Phase 3 will consist of two (2) subphases:
    - Phase 2D – Comprising 42 SFH units and 47 MLT units.
    - Phase 2E – Comprising 86 SFH units and 150 MLT units.

3) Phase 4 - Comprising 86 SFH units, 311 MLT units and one park area. As with Phase 2 and 3, the townhouses in this phase are a combination of rear-lane and standard townhouse units, with additional blocks of back-to-back townhouses; and,
4) Jock River – Comprising 328 SFH units.

As previously mentioned, the development area will ultimately be serviced by the pressure Zone SUC, once the reconfiguration is complete (planned in Q2 of 2024). As such, the analysis and proposed watermain sizing and layout documented in this report only considers the Zone SUC servicing conditions.



Stantec

Legend

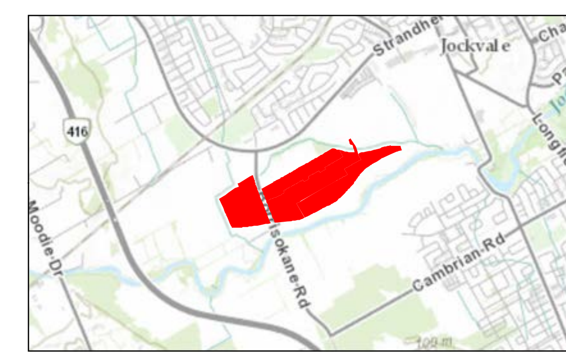
- Barrhaven Conservancy East Lands
- Property Line
- Existing Distribution Watermain
- Future Distribution Watermain
- Connection Location
- Future Watermain to Service Barrhaven Conservancy East Lands

N

0 180 360 metres

(At original document size of 11x17)
1:10,000

Notes
1. Coordinate System: NAD 1983 CSRS MTM 9
2. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

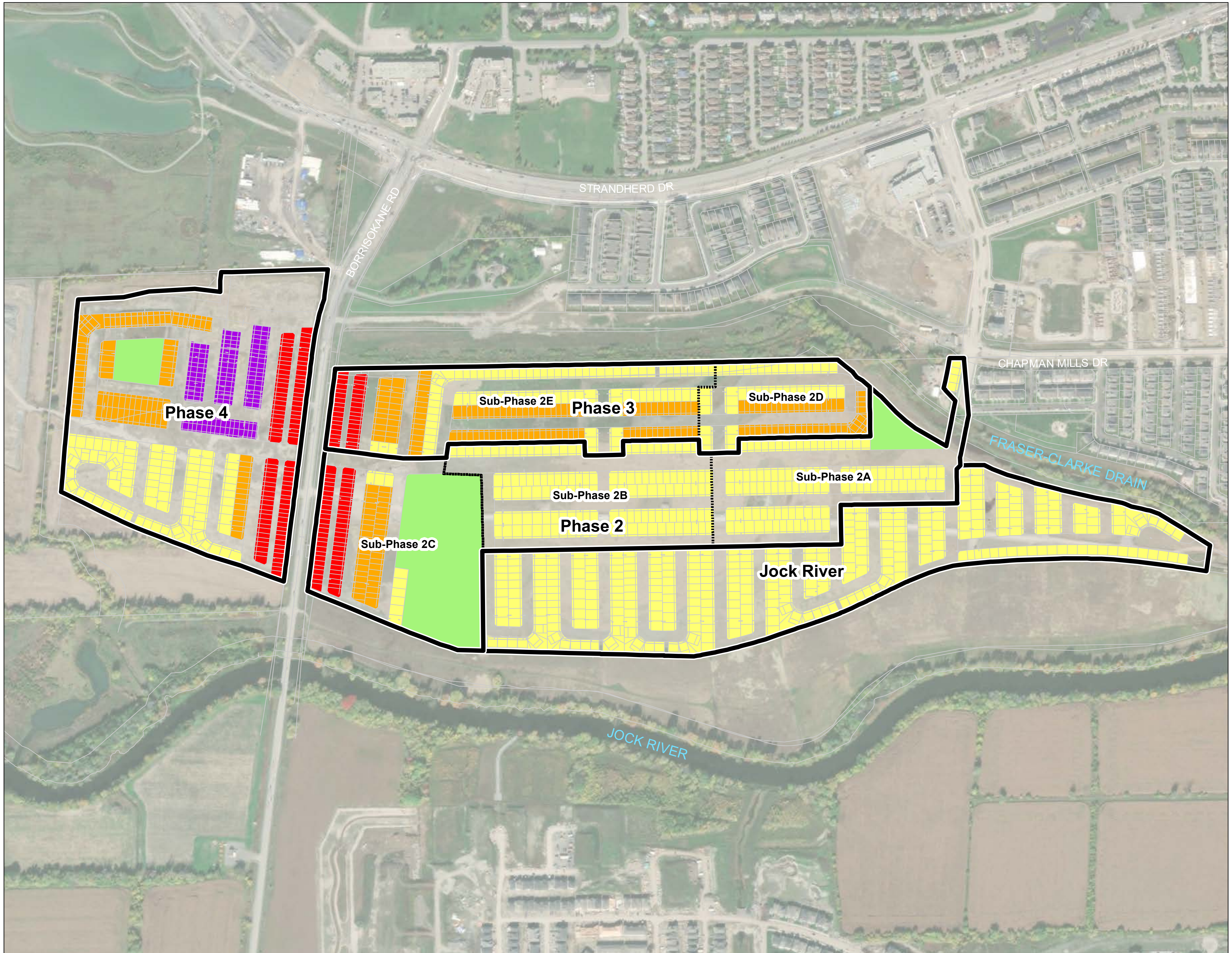


Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
1-1

Title
Connections to Existing Water Distribution Network



Stantec

Legend

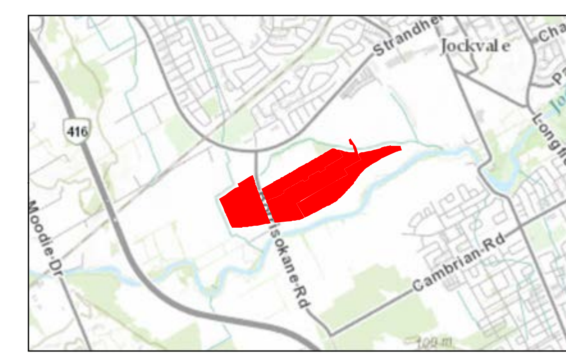
- Development Phase Boundary
- Development Sub-Phase Boundary
- Single Family Home (SFH)
- Standard Townhouse (STND TH)
- Rear-Lane Townhouse (RLTH)
- Back-to-Back Townhouse (B2B)
- Park
- Property Line

N

0 110 220 metres

(At original document size of 11x17)
1:6,000

Notes
1. Coordinate System: NAD 1983 CSRS MTM 9
2. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
1-2

Title
Phasing Plan of Barrhaven Conservancy East

2.0 HYDRAULIC ASSESSMENT

The City of Ottawa Water Design Guidelines (City of Ottawa, 2010) and criteria outlined in the 2013 Water Master Plan (WMP) were used to establish water demands, level of service and pressure objectives during normal and emergency conditions. As per the City's design guidelines and recently issued Technical Bulletin ISTB-2021-03, since this is a new development involving the design of new watermains, the design shall consider a required fire flow established using the calculation method published by the Fire Underwriters Survey (FUS).

2.1 SERVICEABILITY

2.1.1 System Pressures

As per the City's Water Design Guidelines, the desired range of pressure under average day (AVDY), maximum day (MXDY) and peak hour (PKHR) demands is 345 to 552 kPa (50 to 80 psi) and no less than 276 kPa (40 psi) at ground elevation (i.e., at street level). The maximum pressure at any point in the water distribution system should not exceed 552 kPa (80 psi); pressure reducing measures are required to service areas where pressures greater than 552 kPa (80 psi) are anticipated.

Under emergency fire conditions, the system must be able to supply appropriate fire flow while maintaining a residual pressure of 138 kPa (20 psi).

Figure 2-1 shows the elevations of each model junction based on the site's current grading plan. These range from 92.4 m to 93.5 m.

2.1.2 Fire Flows

The City requires a fire flow assessment to be completed to demonstrate that local watermains can provide the objective fire flows. The detailed FUS Guidelines (long method; 1999 Version) was used to calculate the objective fire flows. Based on site plan information provided, the following characteristics were considered in the FUS calculations:

- All townhouse units will be of typical construction (e.g., wood frame, limited combustible building contents); firewalls are to be added where required to meet the study area's target fire flow;
- Single family home units will generally be of typical (wood frame) construction except where a break in fire area is required to meet the study area's target fire flow. At such locations, units will be of ordinary construction as described in the FUS guidelines.
    - With side yard separation distances of < 3.0 m between SFH units, the current site layout would contain several large blocks of contiguous SFH units if all were to be of wood frame construction. It is our understanding that the current rearyard setback for all SFH

products will be 4.5 m, which in most locations throughout the development area results in rearyard separation distances of less than 10 m. As such, the City's cap of 10,000 L/min, as per Technical Bulletin ISDTB-2018-02, does not apply to these areas and measures such as separating fire areas with units of ordinary construction is required to meet the study area's target fire flow;

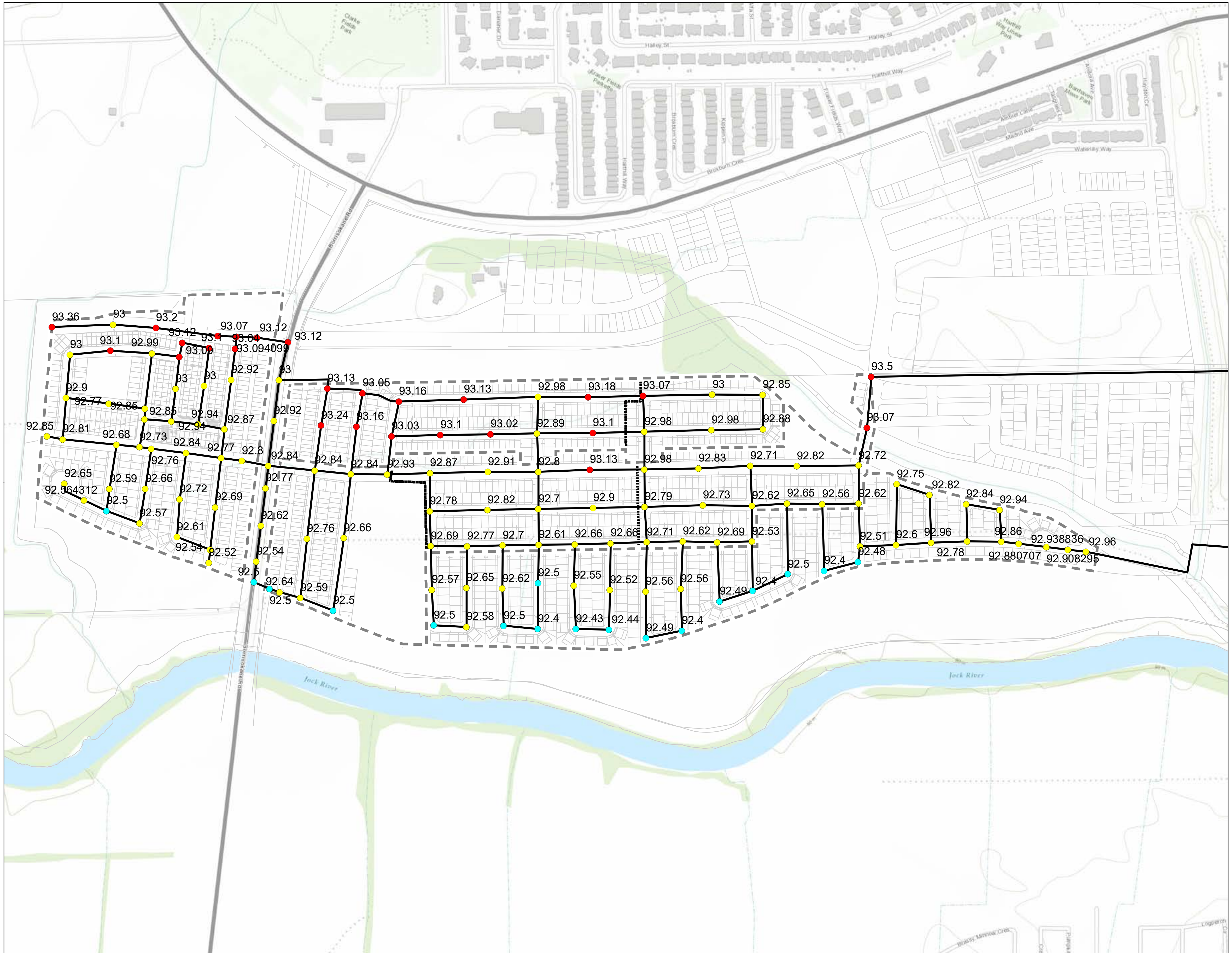
- All buildings will have 2 stories above grade (with basements more than 50% below ground level);
- Buildings are not sprinklered; and,
- Setbacks between adjacent units are greater than 3.0 m, with the exception of some proposed SFH units.
    - Per the FUS Guidelines, units with setbacks less than 3.0 m and of wood frame construction will be considered a single fire area.

Based on the latest site plan dated October 2021 and subsequent architectural changes, the required fire flow (RFF) for the governing unit design (rear-lane townhouses, RLTH) was calculated to be 13,000 L/min (217 L/s). This is based on the understanding that, as previously noted, ordinary construction SFH units will be used to separate SFH blocks into fire areas that result in RFFs no greater than 13,000 L/min. Similarly, townhouse blocks will also have firewalls to limit fire areas such that the resulting RFFs will be no greater than 13,000 L/min. The local watermains must therefore be able to provide a minimum fire flow of 13,000 L/min at a residual pressure of 20 psi. The FUS fire flow calculations for the governing unit design and to meet the target fire flow are provided in **Appendix A**.

2.1.3 Water Age

As per the City of Ottawa Design Guidelines, watermains should not be oversized as this may pose water quality degradation, assessed in terms of water age. The Design Guidelines recommend the following:

- A total travel time of 5 days or less during average day demand; and
- A maximum residence time of 8 days.



Stantec

Legend

- Development Phase Boundary
- Development Sub-Phase Boundary
- Property Line
- Future Watermain

Ground Elevation (m AD)

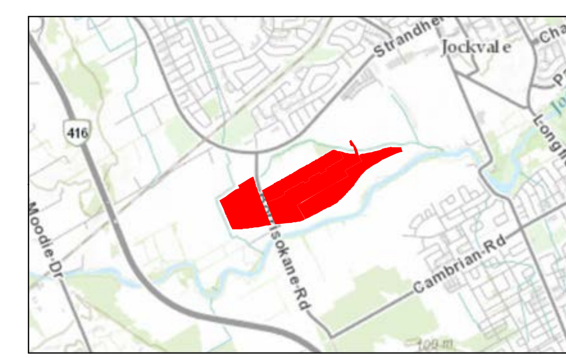
- ≤ 92.00
- 92.01 - 92.50
- 92.51 - 93.00
- \> 93.00

0 120 240 metres

(At original document size of 11x17)
1:6,500

Notes

1. Coordinate System: NAD 1983 CSRS MTM 9
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
2-1

Title
Junction Elevations

2.2 GROWTH PROJECTIONS

The estimated residential population for Barrhaven Conservancy East was estimated based on projected household sizes as per population densities (or persons per unit, PPU) specified in the City's Water Design Guidelines.

Table 2-1 shows the estimated number of units per phase of these development lands and the projected populations based on the distribution of residential types. The total number of units is estimated to be 1,388 with a residential population of 4,295 persons.

Table 2-1: Estimated Unit Counts and Populations for Barrhaven Conservancy East

Phase	Sub Phase	Unit Types	Units	PPU	Population
2	2A	Singles	102	3.4	347
		Towns	0	2.7	0
	2B	Singles	129	3.4	439
		Towns	0	2.7	0
	2C	Singles	9	3.4	31
		Towns	98	2.7	265
		Phase 2 Sub-total	*338*	-	*1,081*
3	2D	Singles	42	3.4	143
		Towns	47	2.7	127
	2E	Singles	86	3.4	292
		Towns	150	2.7	405
		Phase 3 Sub-total	*325*	-	*967*
4		Singles	86	3.4	292
		Towns	311	2.7	840
		Phase 4 Sub-total	*397*	-	*1,132*
Jock River (JR)		Singles	328	3.4	1,115
		Towns	0	2.7	0
		JR Phase Sub-total	*328*	-	*1,115*
		Total	***1,388***		***4,295***

2.3 DEMAND PROJECTIONS

Due to the size of the service area, the criteria outlined in the City's Water Design Guidelines and recently issued Technical Bulletin ISTB-2021-03 were followed to establish water demands in Barrhaven Conservancy East. As the buildout population of the proposed development is 4,925 (i.e., greater than 3,000), the City's Water Design Guidelines refer to the MECP Guidelines for consumption rates. The MECP Guidelines provide a consumption rate range of 270 L/cap/day to 450 L/cap/day. The City's Water Design Guidelines consumption rates for subdivisions of 501 to 3,000 persons fall within that range and are therefore applicable. The demand rates and peaking factors from the Water Design Guidelines and Technical Bulletin ISTB-2021-03 were applied to the population projections presented in **Table 2-1** based on land-use.

For residential land-use, SFH and MLT units were assigned an average day (AVDY) consumption rate of 280 L/cap/d. To determine maximum day (MXDY) demands, the AVDY demands were multiplied by a residential peaking factor of 2.5. Peak hour (PKHR) demands were established by multiplying MXDY demands by a residential peaking factor of 2.2. The projected AVDY, MXDY and PKHR demands were distributed to the model nodes by phase (and sub-phase) for the corresponding demand scenario.

Estimated AVDY, MXDY and PKHR demand projections are summarized in **Table 2-2**.

Table 2-2: Estimated Demand Projections for Barrhaven Conservancy East

Phase	Sub-Phase	Unit Types	AVDY (L/s)	MXDY (L/s)	PKHR (L/s)
2	2A	Singles	1.12	2.81	6.18
		Towns	0	0	0
	2B	Singles	1.42	3.55	7.82
		Towns	0	0	0
	2C	Singles	0.10	0.25	0.55
		Towns	0.86	2.14	4.72
		Phase 2 Sub-total	***3.50***	***8.75***	***19.26***
3	2D	Singles	0.46	1.16	2.55
		Towns	0.41	1.03	2.26
	2E	Singles	0.95	2.37	5.21
		Towns	1.31	3.28	7.22
		Phase 3 Sub-total	***3.13***	***7.84***	***17.24***
4		Singles	0.95	2.37	5.21
		Towns	2.72	6.80	14.97
		Phase 4 Sub-total	***3.67***	**9.17**	**20.18**
Jock River (JR)		Singles	3.61	9.04	19.88
		Towns	0	0	0
		JR Phase Sub-total	***3.61***	**9.04**	**19.88**
		Total	***13.92***	***34.80***	***76.55***

2.4 MODEL DEVELOPMENT

Innovyze's InfoWater (Suite 12.4, Update #9) was used to create a stand-alone hydraulic model of the water distribution system within the proposed development area for this analysis. The model was developed to reflect the most current site plan, including proposed watermain layout (based on proposed road alignment) and water demands.

Watermains added to the model were assigned Hazen-Williams coefficients ("C-Factors") in accordance with the City's Water Design Guidelines. These factors are listed in **Table 2-3.**

Table 2-3: Hazen-Williams Coefficients by Watermain Size

Watermain Diameter (mm)	Coefficient
152	100
203 - 305	110
350 - 600	120
> 600	130

2.4.1 Boundary Conditions

The proposed subdivision has two connection points to the existing water distribution system; the option to add a third connection point is also assessed (see **Section 1.1**). The boundary conditions provided by the City include hydraulic gradeline (HGL) values for Zone SUC servicing conditions. Values are provided in **Appendix B** and summarized in **Table 2-4**, and have been simulated in the hydraulic model using fixed head reservoirs to which HGLs have been applied for the respective demand scenarios.

Differences in HGL between connections 1 and 2 are observed under higher demand scenarios. While under AVDY and PKHR conditions, these differences are small (0.2 m or less), under MXDY+FF and AVDY+FF conditions, these differences increase to approximately 4 m. This is likely due to the fact that the Connection 1 is connected to a 305 mm diameter along Chapman Mills Dr, whereas Connection 2 is to a 203 mm diameter along Darjeeling Ave, and the two connection points are interconnected by a 203 mm diameter watermain along Danson Gardens Grv.

If the existing watermain along Danson Gardens Grv is upgraded to a 305 mm diameter watermain, the discrepancies in HGL between Connection 1 and Connection 2 decrease. A second set of boundary conditions (two connections with upgrades) reflecting these conditions was provided by the City.

Finally, a third set of boundary conditions was provided by the City, reflecting conditions with three connection points to the existing water distribution system. These boundary conditions do not consider any upgrades between Connection 1 and Connection 2, and as such the HGLs differ by 3.5 to 3.7 m under MXDY+FF and AVDY+FF conditions.

Table 2-4: HGL Boundary Conditions

HGL (m) Zone SUC Servicing Conditions			
Demand Scenario	**Two Connections[5]**		
	Connection 1 [1]	**Connection 2 [2]**	
AVDY	150.0	150.0	
PKHR	144.2	144.0	
AVDY +FF	138.7	135.1	
MXDY+FF	137.0	133.2	
Demand Scenario	**Two Connections with Upgrades[4]**		
	Connection 1 [1]	**Connection 2 [2]**	
AVDY	149.5	149.5	
PKHR	144.1	144.1	
AVDY +FF	138.6	139.8	
MXDY+FF	136.8	138.1	
Demand Scenario	**Three Connections[5]**		
	Connection 1 [1]	**Connection 2 [2]**	**Connection 3 [3]**
AVDY	149.5	149.5	149.5
PKHR	144.5	144.4	142.0
AVDY +FF	138.6	135.1	137.4
MXDY+FF	137.1	133.4	134.8

Notes:

(1) Ground elevation @ Connection 1 (Chapman Mills Dr) = 92.8 m.
(2) Ground elevation @ Connection 2 (Danson Gardens Grv / Darjeeling Ave) = 91.8 m.
(3) Ground elevation @ Connection 3 (Flagstaff Dr) = 92.1 m.
(4) Upgrades to existing water distribution required to increase HGL at Connection 2; upsize existing 203 mm diameter watermain on Danson Gardens Grv to a 305 mm diameter watermain.
(5) For scenarios where ultimate conditions will include three connections, the boundary conditions for two connections (without upgrades) were used when only Connections 1 and 2 are in place, i.e., for modelling Phases 2 and 3.

2.4.2 Proposed Watermain Sizing & Layout

Two layouts and sizing of the watermains within the proposed development are presented. The first layout (Option A) is required to service the development if only two connections to the water distribution system (Connection 1 and Connection 2) are made. The second layout (Option B) is required to service the development if a third connection (south of the Jock River) is introduced.

2.4.2.1 Option A: Watermain Sizing & Layout for Two Connections

The layout and sizing of the watermains within the proposed development for a scenario with two ultimate connections to the water distribution system are shown in **Figure 2-2**. The same layout and sizing are required with upgrades to the water distribution system along Danson Gardens Grv.

The network is proposed to consist of 152 mm, 203 mm, 305 mm, and 406 mm diameter watermains, with the 305 mm and 406 mm watermains acting as the hydraulic backbone throughout the development lands. The 406 mm diameter watermains run west from connections 1 and 2, interconnect at the east side of the development lands and continue westward across Borrisokane Rd into the Phase 4 lands. The 406 mm diameter watermains can thus serve as backbone if future developments extend further westward. Additional backbone loops added for reliability will be 305 mm watermains. The remaining local watermains will be 152 mm and 203 mm diameter watermains.

The dead-end watermain in the Phase 4 cul-de-sac is proposed to be 203 mm stepping down to 152 mm. Using the traditional "point load assumption" modelling approach to sizing new watermains, the resulting diameter that would be required to provide a fire flow of 13,000 L/min would be larger than the maximum of 152 mm specified in the City's design guidelines for dead-end watermains. As such, to optimize sizing of this watermain, the alternative procedure outlined in Appendix I (Guidelines on Coordination of Hydrant Placement with Required Fire Flow) of the City's Technical Bulletin ISDTB-2018-02 was employed. Additional nodes were added to the model network to represent hydrant locations, to which hydrant flows from Table 1 of Appendix I were applied. To achieve a fire flow of 13,000 L/min, two Class AA hydrants within 75 m (each with an assumed maximum flow capacity of 5,700 L/min) and an additional Class AA hydrant between 75 m and 150 m (with an assumed maximum flow capacity of 3,800 L/min) of the furthest unit along the cul-de-sac would provide a total fire flow of 15,200 L/min (i.e., > the RFF of 13,000 L/min). Other hydrant spacing combinations in accordance with the City's Technical Bulletin ISDTB-2018-02 can also achieve a total fire flow greater than the RFF of 13,000 L/min.

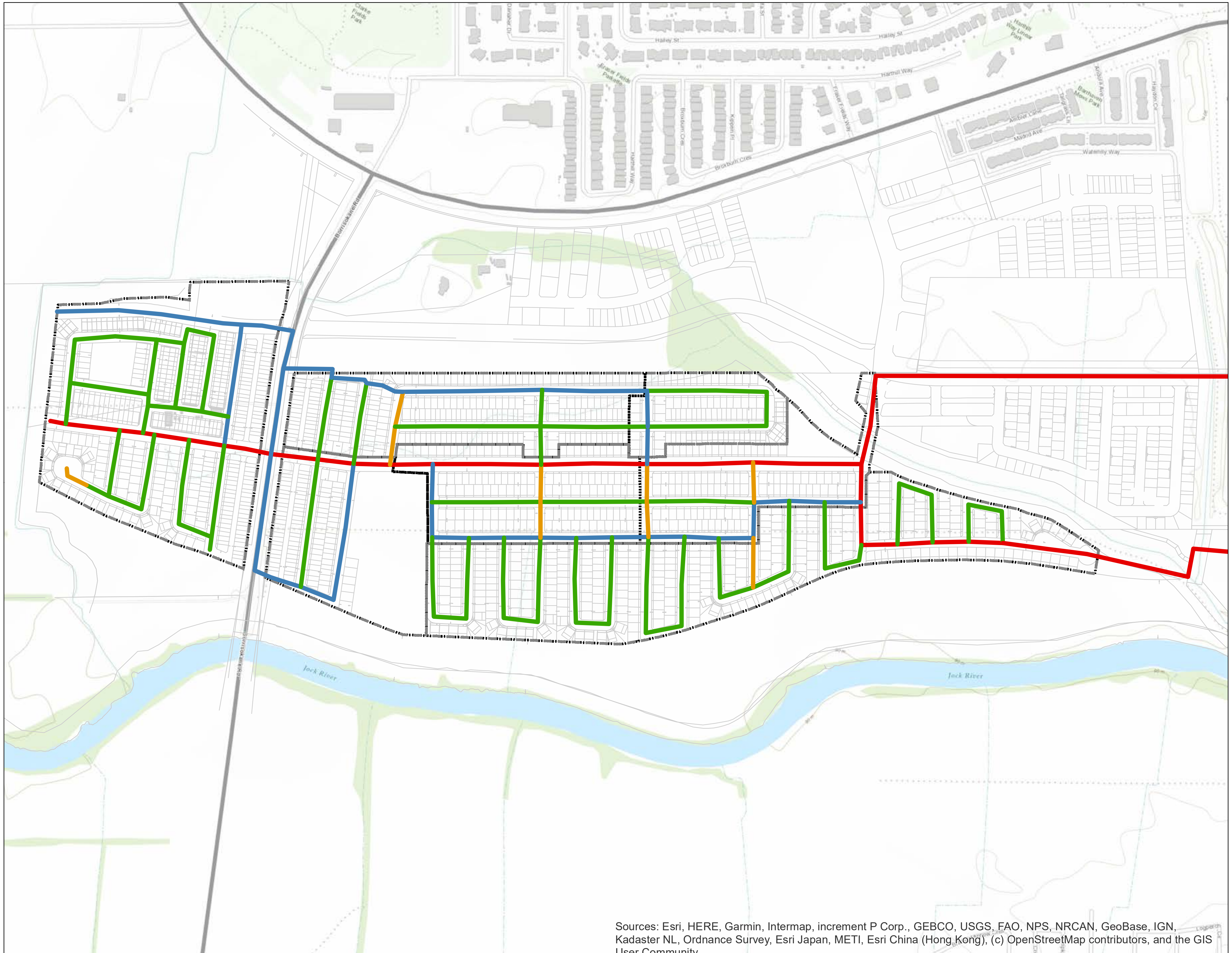
For reliability, the second backbone feed (305 mm) is redirected north then west (i.e., north of the standard and rear-lane townhouse blocks) across to the Phase 4 lands. This alignment provides reliability of service to the lands west of Borrisokane Rd in the event of a failure at the current intersection of the backbone feeds situated within the Borrisokane Rd ROW. System reliability is further discussed in **Section 3.3**. West of Borrisokane Rd, the 305 mm section of backbone will serve as a service connection to future adjacent development. There are no direct Phase 4 property service connections anticipated along this temporary dead-end section of watermain; therefore, it is recommended that this section be isolated until it is required to provide flow to adjacent future lands.

2.4.2.2 Option B: Watermain Sizing & Layout for Three Connections

The layout and sizing of the watermains within the proposed development for a scenario with three ultimate connections to the water distribution system are shown in **Figure 2-3**.

The layout of the watermains is the same as in Option A (with two connections). However, with the third connection, the entire backbone can be reduced to 305 mm diameter watermains at all three connection points and throughout the development lands. The remaining watermain sizes are unchanged from Option A, with local watermains of 152 mm and 203 mm diameter watermains.

Based on the proposed phasing, the implementation of the third connection could be delayed until the development of the Phase 4 lands, west of Borrisokane Rd.



Stantec

Legend

- Development Phase Boundary
- Development Sub-Phase Boundary
- Property Line

Proposed Watermain Diameter (mm)

- 152
- 203
- 305
- 406

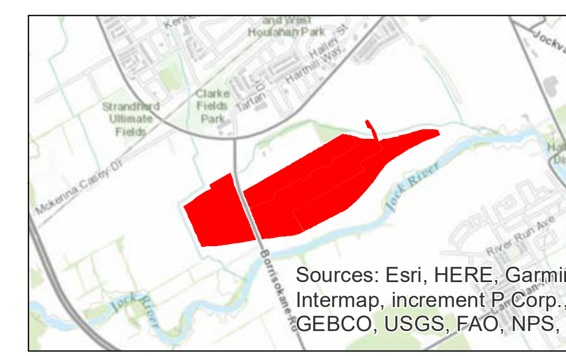
N

0 150 300 metres

(At original document size of 11x17)
1:6,500

Notes

1. Coordinate System: NAD 1983 CSRS MTM 9NAD 1983 CSRS MTM 9
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBECO, USGS, FAO, NPS, NRCAN, GeoBase , IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

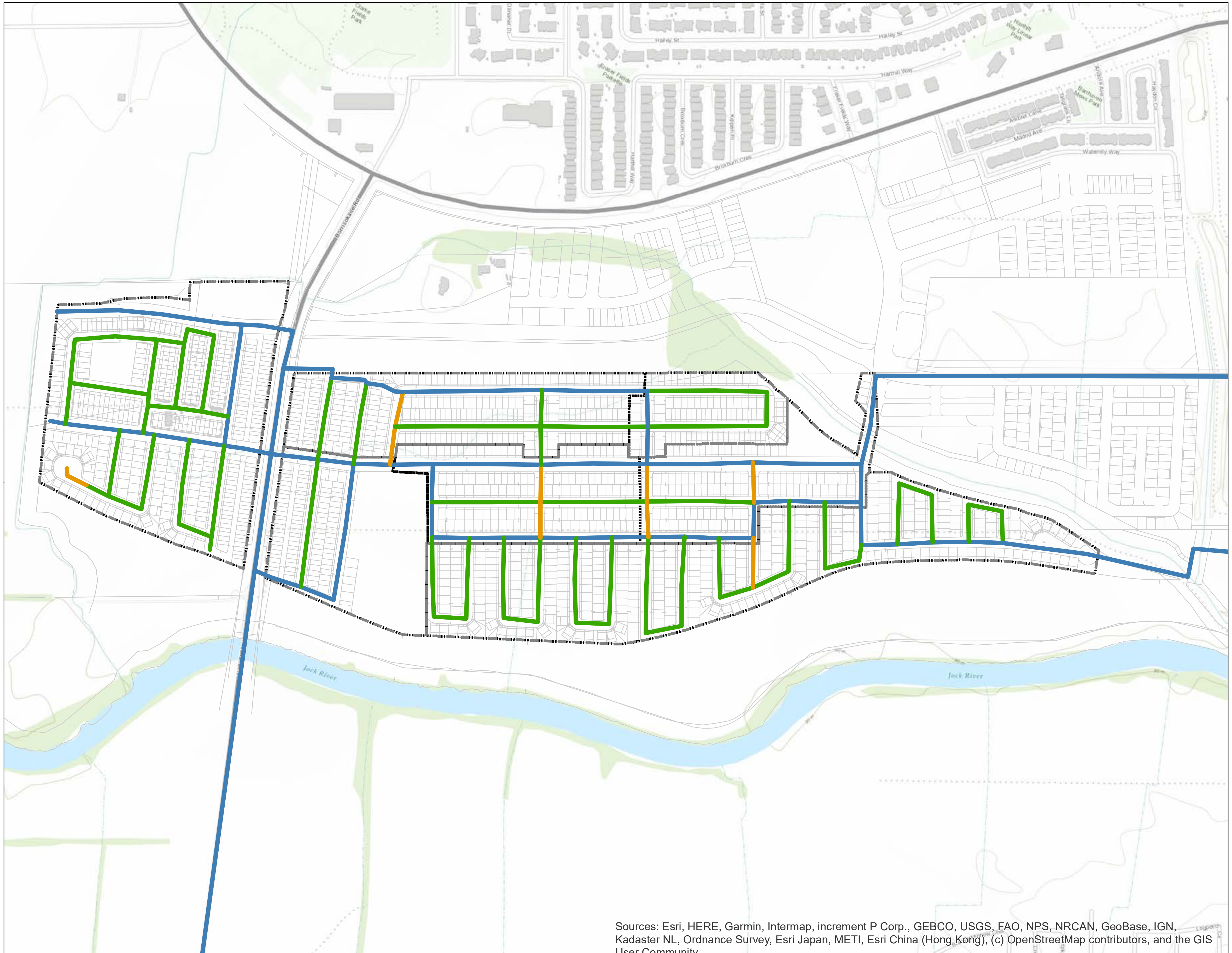


Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
2-2

Title
Proposed Watermain Sizing and Layout - Option A



Stantec

Legend

- Development Phase Boundary
- Development Sub-Phase Boundary
- Property Line

Proposed Watermain Diameter (mm)

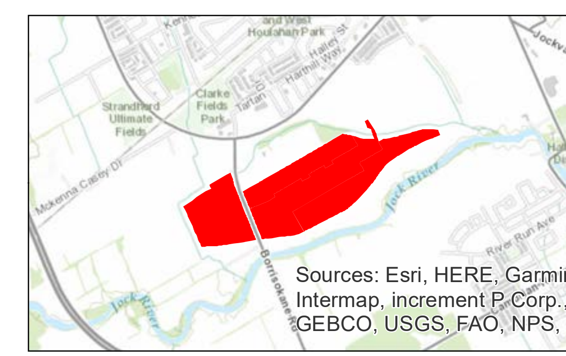
- 152
- 203
- 305

N

0 150 300 metres

(At original document size of 11x17)
1:6,500

Notes
1. Coordinate System: NAD 1983 CSRS MTM 9NAD 1983 CSRS MTM 9
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBECO, USGS, FAO, NPS, NRCAN, GeoBase , IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
2-3

Title
Proposed Watermain Sizing and Layout - Option B

3.0 HYDRAULIC MODELLING RESULTS

Hydraulic modelling was completed for interim phasing conditions and ultimate buildout conditions of the development lands, under SUC servicing conditions, to verify how the network would respond. The following sub-sections present the modelling results under AVDY, PKHR, and MXDY+FF demands, plus under emergency conditions in the event of a watermain break at key points within the proposed network. Detailed modelling results for all scenarios are provided in **Appendix D.**

3.1 AVERAGE DAY & PEAK HOUR DEMANDS

Under AVDY demands with two connections to the water distribution system, maximum modelled pressures for each interim phase and buildout conditions are 82 psi. With three connections to the water distribution system, maximum modelled pressures for each interim phase and buildout conditions are 81 to 82 psi. These maximum pressures exceed the City's maximum pressure objective of 80 psi. As per the Ontario Building Code (OBC) in areas that may be occupied, the static pressure at any fixture shall not exceed 80 psi. Where pressures do exceed 80 psi, pressure control measures such as pressure reducing valves (PRVs) shall be considered.

Under PKHR demands with two connections to the water distribution system, minimum modelled pressures for each interim phase and buildout conditions are 72 psi. With three connections to the water distribution system, minimum modelled pressures for each interim phase and buildout conditions are also 72 psi. These pressures fall within the desired pressure range of 50 to 80 psi.

3.2 MAXIMUM DAY PLUS FIRE FLOW

MXDY+FF demands were applied for the two connections and the three connections scenarios. Each phase was included sequentially to verify network response as the development phases are constructed and occupied.

With two connections to the water distribution system, available fire flow throughout each interim phase and buildout conditions were above the required 13,000 L/min throughout the network. Likewise, with three connections to the water distribution system, available fire flow throughout each interim phase and buildout conditions were above the required 13,000 L/min throughout the network. To optimize the sizing of the dead-end watermain in the Phase 4 cul-de-sac and to reduce potential water quality issues associated with a large-diameter dead-end watermain, the alternative procedure outlined in Appendix I of ISDTB-2018-02 was employed, as described in **Section 2.4.2**. As such, placing two Class AA hydrants within 75 m of the furthest unit along the cul-de-sac (each with an assumed maximum flow capacity of 5,700 L/min), and two Class AA hydrants between 75 m and 150 m (each with an assumed maximum flow capacity of 3,800 L/min), satisfies the fire flow requirement of 13,000 L/min for units along this cul-de-sac. Other hydrant spacing combinations in accordance with the City's Technical Bulletin ISDTB-2018-02 may be implemented to achieve a total fire flow greater than the RFF of 13,000 L/min.

These results show that the proposed watermain sizing and layout meet serviceability requirements with two connections to the water distribution system without requiring further upstream upgrades along Danson Gardens Grv. Nonetheless, these upgrades would still be beneficial, as they would provide consistent HGLs between the two connection points.

3.3 RELIABILITY

As per the City of Ottawa Design Guidelines, the system must be able to provide average day demand plus fire flow (AVDY+FF) while meeting serviceability requirements during a major failure (i.e., watermain break). To assess reliability and resiliency against major failures, a number of reliability scenarios were completed to confirm sufficient pressure and flow can be achieved during a major failure. These scenarios included the following and are shown in **Figure 3-1** (for Option A, with two connections) and in **Figure 3-2**: Reliability Analysis Watermain Break Locations – Option B

(for Option B, with three connections):

1) **Break Scenario 1 –** Break in the backbone watermain from Connection 1;
2) **Break Scenario 2 –** Break in the backbone watermain from Connection 2;
3) **Break Scenario 3 –** Break in backbone watermain at the northwest edge of the large Phase 2 (Phase 2C) park;
4) **Break Scenario 4 –** Break along the east-west backbone watermain, immediately west of Borrisokane Rd;
5) **Break Scenario 5 –** Break in the south backbone watermain through Phase 2 lands, immediately east of Borrisokane Rd;
6) **Break Scenario 6 –** Break in the north backbone watermain through Phase 2 lands, immediately west of Borrisokane Rd; and,
7) **Break Scenario 7** (for Option B only) – Break in the backbone watermain from Connection 3 (crossing the Jock River).

Under break scenario 1, all junctions meet their respective required fire flows, both for Option A (with two connections) and Option B (with three connections).

Under break scenario 2, all junctions meet their respective required fire flows, both for Option A (with two connections) and Option B (with three connections).

Under break scenario 3, all junctions meet their respective required fire flows, both for Option A (with two connections) and Option B (with three connections). However, under the current phasing plan, a second feed would still be required to service the Phase 2 service area west of the park area (sub-phase 2C; containing more than 50 properties) in the interim until sufficient looping can be provided through the subsequent Phase 3 (sub-phase 2E) if current phasing plans remain unchanged. It is thus recommended that sub-phase 2C be developed after sub-phase 2E, to provide sufficient looping. However, some alternatives could be considered to proceed with sub-phase 2C in accordance with the City's Design Guidelines. First, if the construction of the rear-lane townhouse units (refer to **Figure 1-2**) under sub-phase 2C are delayed until sufficient looping is provided, 55 units will remain as part of sub-phase 2C. As per the City's Design Guidelines, up to 75 units can be serviced on a temporary basis by a dead-end water (or a single feed in this case), given that all pressure and demand objectives are met, and it will be looped by a future phase within 2 years. As such, the 55 units could be serviced from the single feed, given that a second loop is provided in a timely matter (2 years). Alternatively, delaying the construction of 6 other units, in addition to the rear-lane townhouses, to avoid the creation of a vulnerable service area (i.e., less than 50 units under sub-phase 2C until sufficient looping is provided) could be considered.

Under break scenario 4, all junctions meet their respective required fire flows, both for Option A (with two connections) and Option B (with three connections).

Under break scenario 5, all junctions meet their respective required fire flows, both for Option A (with two connections) and Option B (with three connections).

Under break scenario 6, all junctions meet their respective required fire flows, both for Option A (with two connections) and Option B (with three connections).

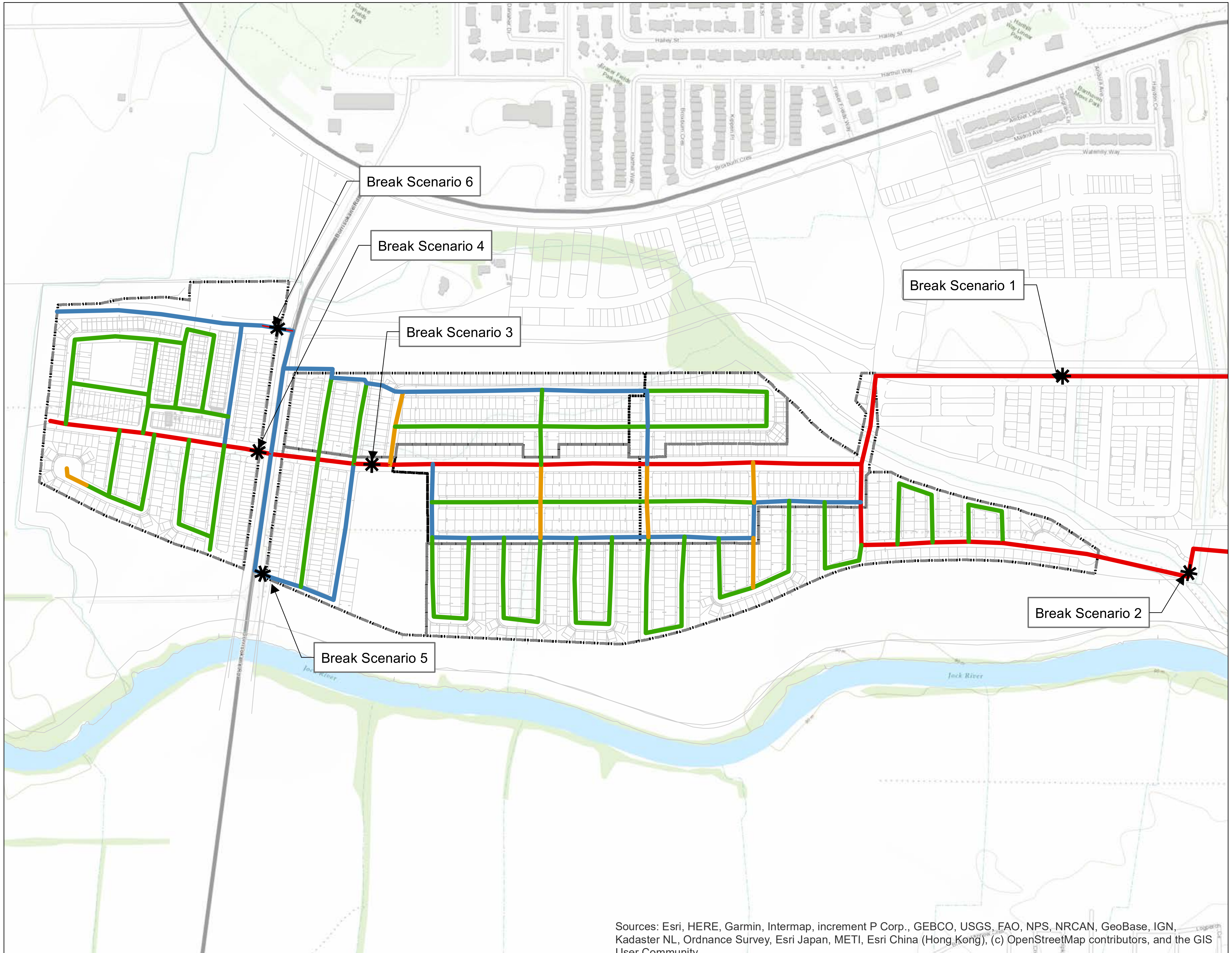
Under break scenario 7, all junctions meet their respective required fire flows. This break scenario would only occur if Option B (watermain layout with third connection across the Jock River) is selected.

3.4 WATER AGE

Water age is calculated as the total pipe volume divided by the AVDY demand. For sizing Option A (with two connections), water age is highest (1.56 days) when Phase 2 is built. The water age upon buildout is 0.67 days. For sizing Option B (with three connections), water age is highest (1.05 days) when Phase 2 is built. The water age upon buildout is 0.57 days.

It should be noted that no water age boundary conditions at the connection points were available, therefore the total water age from the source or last point of rechlorination cannot be assessed. Nonetheless, this analysis shows that the residence time of water within the development lands does not exceed the limits per the City's Design Guidelines, and as such water age issues within the development are not anticipated.

Detailed calculations are provided in **Appendix E**.



Stantec

Legend

- Development Phase Boundary
- Development Sub-Phase Boundary
- Property Line

Proposed Watermain Diameter (mm)

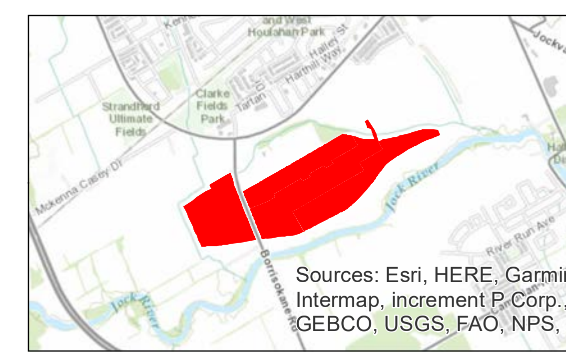
- 152
- 203
- 305
- 406
- Watermain Break Locations

0 150 300 metres

(At original document size of 11x17)
1:6,500

Notes

1. Coordinate System: NAD 1983 CSRS MTM 9NAD 1983 CSRS MTM 9
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

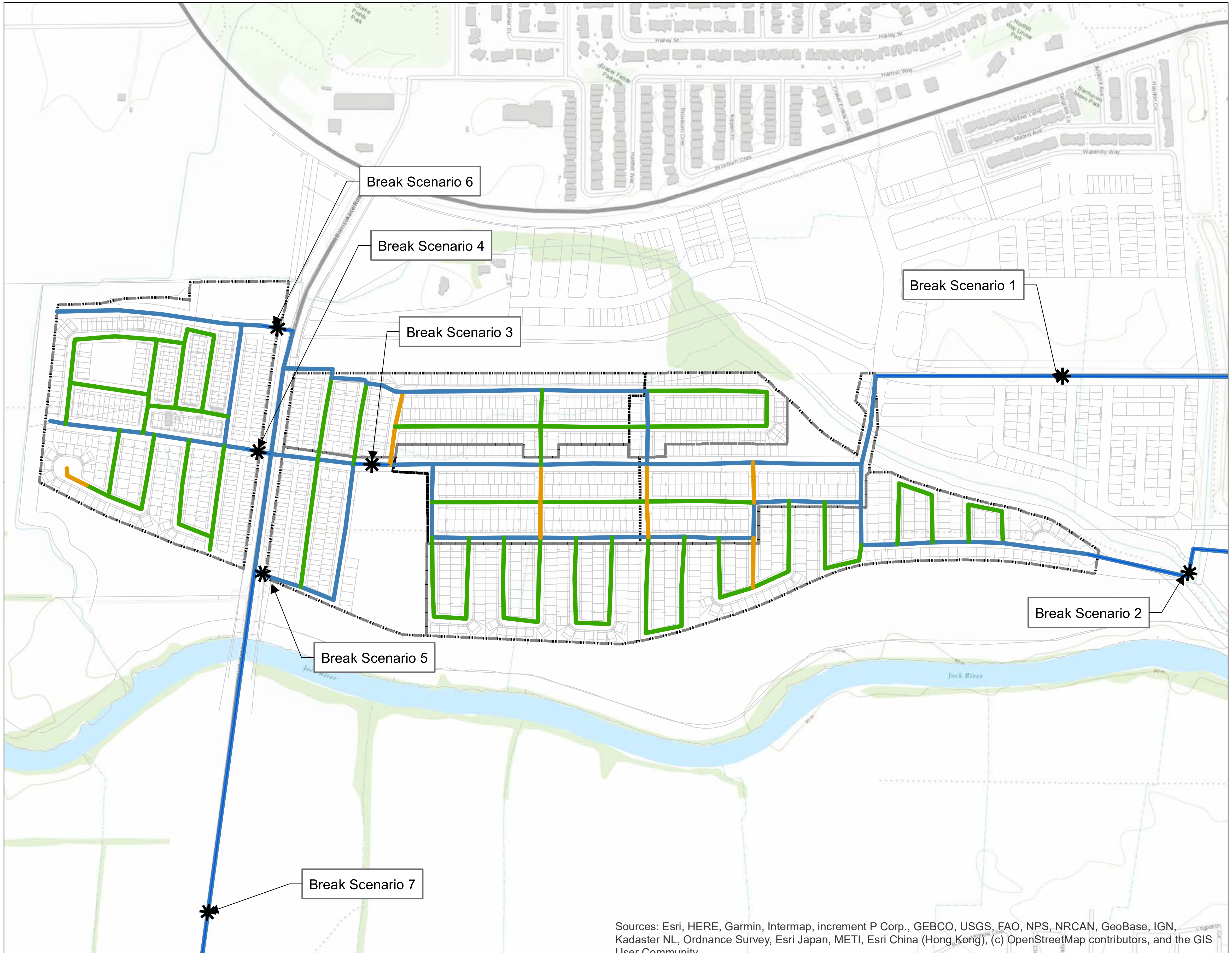


Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
3-1

Title
Reliability Analysis Watermain Break Locations - Option A



Stantec

Legend

- Development Phase Boundary
- Development Sub-Phase Boundary
- Property Line

Proposed Watermain Diameter (mm)

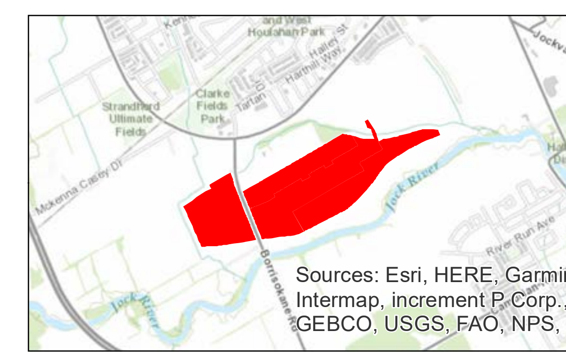
- 152
- 203
- 305
- Watermain Break Locations

0 150 300 metres

(At original document size of 11x17)
1:6,500

Notes

1. Coordinate System: NAD 1983 CSRS MTM 9NAD 1983 CSRS MTM 9
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBECO, USGS, FAO, NPS, NRCAN, GeoBase , IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
3-2

Title
Reliability Analysis Watermain Break Locations - Option B

4.0 CONCLUSION AND RECOMMENDATIONS

A water distribution system hydraulic analysis was completed for the Barrhaven Conservancy East development lands. The purpose of this analysis was to confirm associated watermain sizing and redundancy needs. Based on the hydraulic analysis, the following conclusions and recommendations were made:

- Based on the most current site plan layout, the estimated AVDY, MXDY and PKHR demand projections for the development lands are 13.92 L/s, 34.80 L/s, and 76.55 L/s, respectively.
- The required fire flow for the governing unit design (rear-lane townhouses) was calculated to be 13,000 L/min (217 L/s). This is based on the understanding that ordinary construction single-family housing (SFH) units will be used to separate SFH blocks into fire areas that result in required fire flows (RFFs) no greater than 13,000 L/min. Similarly, townhouse blocks will have firewalls to limit fire areas such that the resulting RFFs will be no greater than 13,000 L/min.
  - As the watermain sizing presented herein is based on an RFF of 13,000 L/min, the final design of the units should meet the requirements for this RFF, per the FUS Guidelines.
- Two watermain layout and sizing are proposed:
  - The first option (Option A) would involve two connections to the water distribution system; the proposed sizing is recommended to include 406 mm diameter watermains from connections 1 and 2 as the hydraulic backbone of the network, with 305 mm diameter watermains for backbone looping. Watermains along local right-of-ways would be 152 mm and 203 mm diameter watermains. The dead-end watermain in the cul-de-sac at the western extent of the development would be 152 mm diameter. The proposed layout and sizing in shown in **Figure 2-2**.
  - The second option (Option B) would involve three connections to the water distribution system, with the third connection requiring crossing the Jock River. The proposed layout within the development is similar to Option A; the proposed sizing is recommended to include 305 mm diameter watermains for the hydraulic backbone of the network. Watermains along local right-of-ways would be 152 mm and 203 mm diameter watermains. The dead-end watermain in the cul-de-sac at the western extent of the development would be 152 mm diameter. The proposed layout and sizing in shown in **Figure 2-3**.
- The serviceability of the development lands was analysed, considering that they would be serviced by the pressure zone SUC.
- As part of the currently proposed watermain layout, the backbone watermain is proposed to extend west along the northern edge of the Phase 4 lands to serve as a service connection to future adjacent development. There are no direct Phase 4 property service connections

anticipated along this temporary dead-end section of watermain; therefore, it is recommended that this section be isolated until it is required to provide flow to adjacent future lands.

- Under AVDY demand conditions, model results using boundary conditions provided by the City exceed the allowable maximum pressure of 80 psi in accordance with the City of Ottawa Design Guidelines. As per the OBC, the static pressure at any fixture shall not exceed 80 psi, in areas that may be occupied. Where pressures do exceed 80 psi, pressure control measures such as PRVs installed immediately downstream of the isolation valve to the home/building shall be considered.
- Under PKHR demand conditions, the minimum pressures are in accordance with the City's system pressure requirements.
- Under MXDY+FF demand conditions, the target required fire flow of 13,000 L/min can be achieved through the proposed network for all phases when the alternative procedure outlined in the Appendix I of ISDTB-2018-02 is applied to the dead-end watermain in the western extent of the development lands.
- If Option A (servicing with two connections) is selected, watermain upgrades along Danson Gardens Grv are recommended to provide similar HGLs at the two connection points under a fire flow scenario.
- To satisfy and improve system reliability in the event of an emergency break scenario at key points in the network, a second backbone feed was redirected north then west (i.e., north of the standard and rear-lane townhouse blocks) across to the Phase 4 lands. However, under the current phasing plan, a second feed would still be required to service the Phase 2 service area west of the park area (sub-phase 2C, containing more than 50 properties) in the interim until sufficient looping can be provided through the subsequent Phase 3 (sub-phase 2E) if current phasing plans remain unchanged. It is recommended that sub-phase 2C be developed after sub-phase 2E, to provide sufficient looping. However, sub-phase 2C could be serviced on an interim basis, from the single feed, given that the rear-lane townhouses proposed under sub-phase 2C are delayed until sufficient looping is provided. Alternatively, delaying the construction of 6 other units, in addition to the rear-lane townhouses, could be considered for sub-phase 2C, to avoid the creation of a vulnerable service area.
- A water age analysis shows that the residence time of water within the development lands does not exceed the limits per the City's Design Guidelines. No water age boundary conditions at the connection points were available, therefore the total water age from the source or last point of rechlorination cannot be assessed. As such, water age issues within the development are not anticipated.

5.0 REFERENCES

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Appendix A FUS CALCULATION

FUS Fire Flow Calculation

Calculations based on: "*Water Supply for Public Fire Protection*" by Fire Underwriters' Survey, 1999

Stantec Project #: 163401660
Project Name: Barrhaven Conservancy
Date: November 29, 2021
Data inputted by: Jasmin Sidhu, P.Eng.
Data reviewed by:

Fire Flow Calculation #: 1
Building Type/Description/Name: Residential

Notes:
Single family house (SFH) block based on draft site plan dated September 20, 2021. Area assumes largest SFH unit size.
Minimum spatial separation between the backs of adjacent units is <10m (i.e., City's cap of 10,000 L/min as per Technical Bulletin ISDTB-2018-02 does not apply).
Assumed wood frame construction.
Target fire flow = 13,000 L/min. Requires a maximum of 2 adjacent consecutive wood frame construction units.

Table A: Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Wood Frame	1.5	Wood Frame	1.5	m	
			Ordinary construction	1				
			Non-combustible construction	0.8				
			Fire resistive construction (< 2 hrs)	0.7				
			Fire resistive construction (> 2 hrs)	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	2	Single Family	2	Units	
			Townhouse - indicate # of units	1				
			Other (Comm, Ind, Apt etc.)	1				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			2	2	Storeys	
3	Enter Average Floor Area of Unit or Block of Units	Average Floor Area (A) (non-fire resistive construction):			158 Square Metres (m2)	158	Area in Square Meters (m^2)	
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x Average Floor Area of Unit x # of Units):			632	632		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						**8,000**
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	**6,800**
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler reduction	Adequate Sprinkler conforms to NFPA13	-0.3	None	0	N/A	**0**
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is not standard or N/A	0	N/A	**0**
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	**0**
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Separation Distance Between Units	Exposure Distance Between Units	Front Yard	20.1 to 30.1m	0.1	0.75	m	**5,100**
			Side Yard (Left)	0 to 3.0m	0.25			
			Rear Yard	3.1 to 10.0m	0.2			
			Side Yard (Right)	0 to 3.0m	0.25			
6	Obtain Required Fire Flow, Duration & Volume	***Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:***						**12,000**
		Total Required Fire Flow (above) in L/s:						**200**
		Required Duration of Fire Flow (hrs)						**2.50**
		Required Volume of Fire Flow (m^3)						**1,800**

Stantec

FUS Fire Flow Calculation

Calculations based on: "*Water Supply for Public Fire Protection*" by Fire Underwriters' Survey, 1999

Stantec Project #: 163401660
Project Name: Barrhaven Conservancy
Date: November 29, 2021
Data inputted by: Jasmin Sidhu, P.Eng.
Data reviewed by:

Fire Flow Calculation #: 2
Building Type/Description/Name: Residential

Notes:
Single family house (SFH) block based on draft site plan dated September 20, 2021. Area assumes largest SFH unit size.
Minimum spatial separation between the backs of adjacent units is <10m (i.e., City's cap of 10,000 L/min as per Technical Bulletin ISDTB-2018-02 does not apply).
Assumed ordinary construction (i.e., more than 2/3 of the buildings' exterior walls are made of brick of masonry veneer).
Target fire flow = 13,000 L/min. Requires a maximum of 5 adjacent consecutive ordinary construction units.

Table A: Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Wood Frame	1.5	Ordinary construction	1	m	
			Ordinary construction	1				
			Non-combustible construction	0.8				
			Fire resistive construction (< 2 hrs)	0.7				
			Fire resistive construction (> 2 hrs)	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	5	Single Family	5	Units	
			Townhouse - indicate # of units	1				
			Other (Comm, Ind, Apt etc.)	1				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			2	2	Storeys	
3	Enter Average Floor Area of Unit or Block of Units	Average Floor Area (A) (non-fire resistive construction):			158 Square Metres (m2)	158	Area in Square Meters (m^2)	
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x Average Floor Area of Unit x # of Units):			1,580	1,580		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						9,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	7,650
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler reduction	Adequate Sprinkler conforms to NFPA13	-0.3	None	0	N/A	0
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is not standard or N/A	0	N/A	0
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	0
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Separation Distance Between Units	Exposure Distance Between Units	Front Yard	20.1 to 30.1m	0.1	0.75	m	5,738
			Side Yard (Left)	0 to 3.0m	0.25			
			Rear Yard	3.1 to 10.0m	0.2			
			Side Yard (Right)	0 to 3.0m	0.25			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						**13,000**
		Total Required Fire Flow (above) in L/s:						**217**
		Required Duration of Fire Flow (hrs)						**2.75**
		Required Volume of Fire Flow (m^3)						**2,145**

FUS Fire Flow Calculation

Calculations based on: "*Water Supply for Public Fire Protection*" by Fire Underwriters' Survey, 1999

Stantec Project #: 163401660
Project Name: Barrhaven Conservancy
Date: May 10, 2022
Data inputted by: Christène Razafimaharo
Data reviewed by: Jasmin Sidhu, P.Eng.

Fire Flow Calculation #: 3
Building Type/Description/Name: Residential

Notes: *Maximum GFA for a STND TH fire area to achieve a required fire flow (RFF) of 13,000 L/min.*
Target fire flow = 13,000 L/min. Fire walls required at the back to achieve RFF.

Table A: Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Wood Frame	1.5	Wood Frame	1.5	m	
			Ordinary construction	1				
			Non-combustible construction	0.8				
			Fire resistive construction (< 2 hrs)	0.7				
			Fire resistive construction (> 2 hrs)	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	1	Townhouse - indicate # of units	5	Units	
			Townhouse - indicate # of units	5				
			Other (Comm, Ind, Apt etc.)	1				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			2	2	Storeys	
3	Enter Average Floor Area of Unit or Block of Units	Average Floor Area (A) (non-fire resistive construction):			82 Square Metres (m2)	82	Area in Square Meters (m^2)	
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x Average Floor Area of Unit x # of Units):			820	820		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						9,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	7,650
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler reduction	Adequate Sprinkler conforms to NFPA13	-0.3	None	0	N/A	0
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is not standard or N/A	0	N/A	0
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	0
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Separation Distance Between Units	Exposure Distance Between Units	Front Yard	20.1 to 30.1m	0.1	0.6	m	4,590
			Side Yard (Left)	3.1 to 10.0m	0.2			
			Rear Yard	Fire Wall	0.1			
			Side Yard (Right)	3.1 to 10.0m	0.2			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						**12,000**
		Total Required Fire Flow (above) in L/s:						**200**
		Required Duration of Fire Flow (hrs)						**2.50**
		Required Volume of Fire Flow (m^3)						**1,800**

FUS Fire Flow Calculation

Calculations based on: "*Water Supply for Public Fire Protection*" by Fire Underwriters' Survey, 1999

Stantec Project #: 163401660
Project Name: Barrhaven Conservancy
Date: September 29, 2021
Data inputted by: Tom Westwood, P.Eng
Data reviewed by: Jasmin Sidhu, P.Eng.

Fire Flow Calculation #: 4
Building Type/Description/Name: Residential

Notes: *Governing rear lane townhouse (RLTH) block based on draft site plan dated September 20, 2021. Block consists of 5 RLTH units where minimum spatial separation between the backs of adjacent units is <10m and gross floor area of block is > 600m² (i.e., City's cap of 10,000 L/min as per Technical Bulletin ISDTB-2018-02 does* not *apply).*

Table A: Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Wood Frame	1.5	Wood Frame	1.5	m	
			Ordinary construction	1				
			Non-combustible construction	0.8				
			Fire resistive construction (< 2 hrs)	0.7				
			Fire resistive construction (> 2 hrs)	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	1	Townhouse - indicate # of units	5	Units	
			Townhouse - indicate # of units	5				
			Other (Comm, Ind, Apt etc.)	1				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			2	2	Storeys	
3	Enter Average Floor Area of Unit or Block of Units	Average Floor Area (A) (non-fire resistive construction):			78 Square Metres (m2)	78	Area in Square Meters (m^2)	
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x Average Floor Area of Unit x # of Units):			780	780		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						9,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	7,650
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler reduction	Adequate Sprinkler conforms to NFPA13	-0.3	None	0	N/A	0
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is not standard or N/A	0	N/A	0
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	0
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Separation Distance Between Units	Exposure Distance Between Units	Front Yard	20.1 to 30.1m	0.1	0.7	m	5,355
			Side Yard (Left)	3.1 to 10.0m	0.2			
			Rear Yard	3.1 to 10.0m	0.2			
			Side Yard (Right)	3.1 to 10.0m	0.2			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						**13,000**
		Total Required Fire Flow (above) in L/s:						**217**
		Required Duration of Fire Flow (hrs)						**2.75**
		Required Volume of Fire Flow (m^3)						**2,145**

Stantec

FUS Fire Flow Calculation

Calculations based on: "*Water Supply for Public Fire Protection*" by Fire Underwriters' Survey, 1999

Stantec Project #: 163401660
Project Name: Barrhaven Conservancy
Date: September 29, 2021
Data inputted by: Tom Westwood, P.Eng
Data reviewed by: Jasmin Sidhu, P.Eng.

Fire Flow Calculation #: 5
Building Type/Description/Name: Residential

Notes: *Governing back-to-back townhouse (B2B TH) block based on draft site plan dated September 20, 2021. Block consists of 10 B2B TH units separated by one fire wall, resulting in a fire area comprising 5 units with no spatial separation between the backs of adjacent units and gross floor area of block is > 600m^2 (i.e., City's cap of 10,000 L/min as per Technical Bulletin ISDTB-2018-02 does not apply).*
Target Fire Flow = 13,000 L/min. Fire walls required at the back to achieve target fire flow.

Table A: Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Wood Frame	1.5	Wood Frame	1.5	m	
			Ordinary construction	1				
			Non-combustible construction	0.8				
			Fire resistive construction (< 2 hrs)	0.7				
			Fire resistive construction (> 2 hrs)	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	1	Townhouse - indicate # of units	5	Units	
			Townhouse - indicate # of units	5				
			Other (Comm, Ind, Apt etc.)	1				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			2	2	Storeys	
3	Enter Average Floor Area of Unit or Block of Units	Average Floor Area (A) (non-fire resistive construction):			78 / Square Metres (m2)	78	Area in Square Meters (m^2)	
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x Average Floor Area of Unit x # of Units):			780	780		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						9,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	7,650
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler reduction	Adequate Sprinkler conforms to NFPA13	-0.3	None	0	N/A	0
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is not standard or N/A	0	N/A	0
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	0
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Separation Distance Between Units	Exposure Distance Between Units	Front Yard	3.1 to 10.0m	0.2	0.6	m	4,590
			Side Yard (Left)	20.1 to 30.1m	0.1			
			Rear Yard	3.1 to 10.0m	0.2			
			Side Yard (Right)	20.1 to 30.1m	0.1			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						**12,000**
		Total Required Fire Flow (above) in L/s:						**200**
		Required Duration of Fire Flow (hrs)						**2.50**
		Required Volume of Fire Flow (m^3)						**1,800**

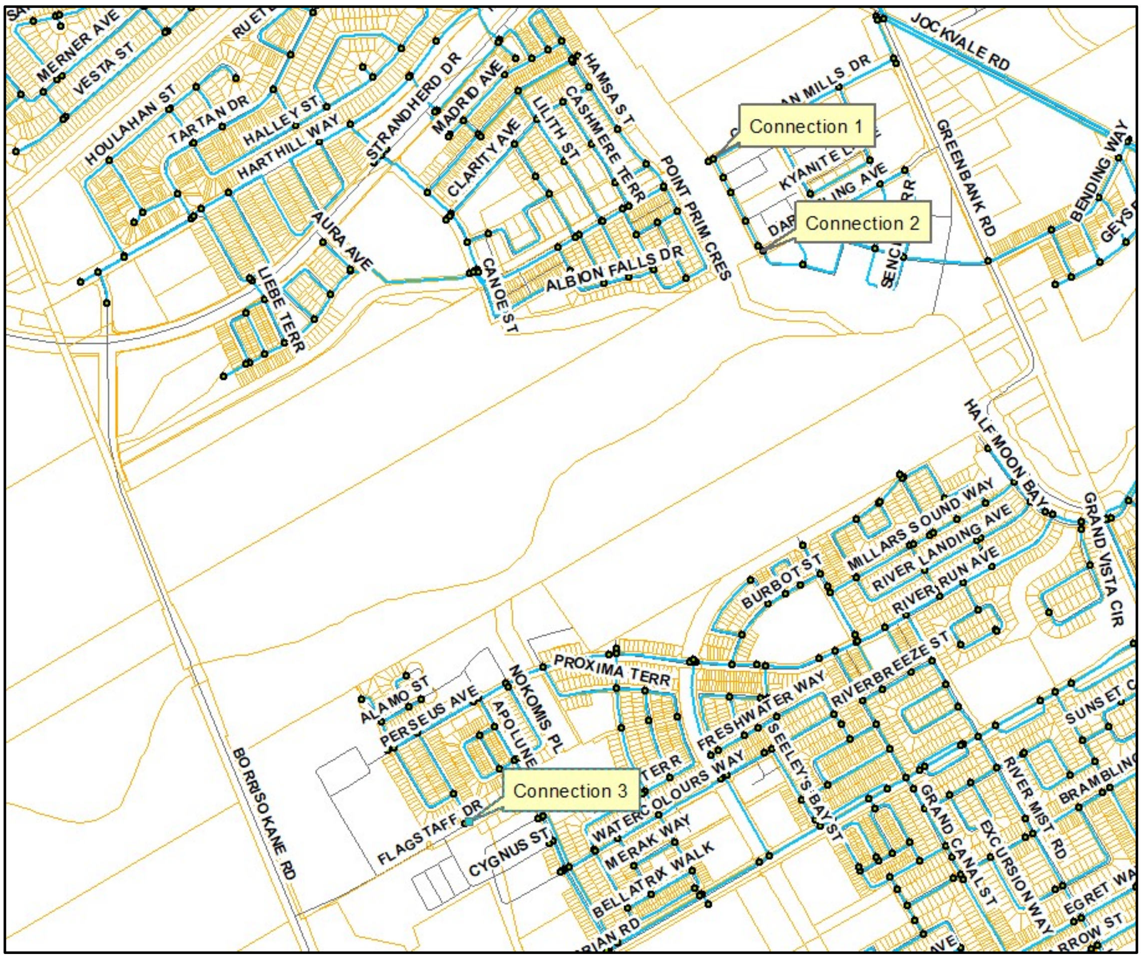
Appendix B BOUNDARY CONDITIONS

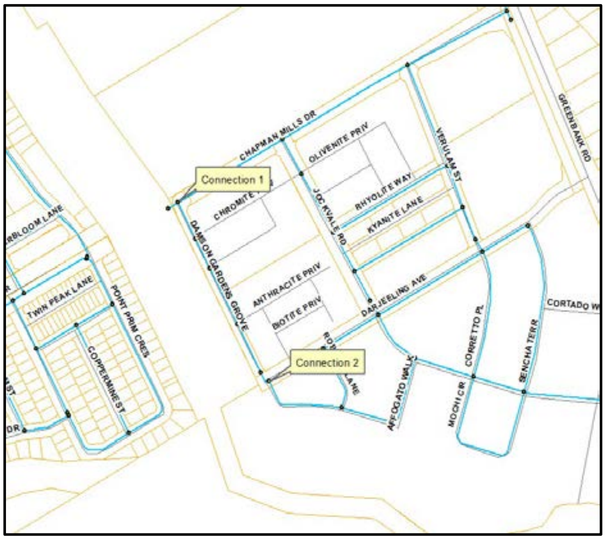
Boundary Conditions
Barrhaven Conservancy East

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	832	13.87
Maximum Daily Demand	2,080	34.67
Peak Hour	4,576	76.27
Fire Flow Demand #1	13,000	216.67

Location





Results – Existing Conditions BSDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.7	93.7
Peak Hour	142.6	70.7
Basic Day plus Fire 1	131.2	54.5

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.7	95.1
Peak Hour	142.5	72.1
Basic Day plus Fire 1	127.6	50.9

Ground Elevation = 91.8 m

Connection 3 – Flagstaff Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.6	94.5
Peak Hour	142.1	71.1
Basic Day plus Fire 1	129.9	53.7

Ground Elevation = 92.1 m

Results – Existing Conditions MXDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	157.0	91.2
Peak Hour	137.6	63.7
Max Day plus Fire 1	140.1	67.2

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	157.0	92.7
Peak Hour	137.6	65.0
Max Day plus Fire 1	136.4	63.4

Ground Elevation = 91.8 m

Connection 3 – Flagstaff Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	156.8	91.9
Peak Hour	136.9	63.7
Max Day plus Fire 1	137.7	64.8

Ground Elevation = 92.1 m

Results – SUC Zone Reconfiguration BSDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	149.5	80.7
Peak Hour	147.3	77.5
Basic Day plus Fire 1	138.6	65.1

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	149.5	82.1
Peak Hour	147.3	78.9
Basic Day plus Fire 1	135.1	61.5

Ground Elevation = 91.8 m

Connection 3 – Flagstaff Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	149.5	81.5
Peak Hour	146.9	77.9
Basic Day plus Fire 1	137.4	64.3

Ground Elevation = 92.1 m

Results – SUC Zone Reconfiguration MXDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.9	78.3
Peak Hour	144.5	73.4
Max Day plus Fire 1	137.1	62.9

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.9	79.7
Peak Hour	144.4	74.7
Max Day plus Fire 1	133.4	59.1

Ground Elevation = 91.8 m

Connection 3 – Flagstaff Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.5	78.8
Peak Hour	142.0	71.0
Max Day plus Fire 1	134.8	60.6

Ground Elevation = 92.1 m

Notes

1. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
    a. If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
    b. Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.

Disclaimer

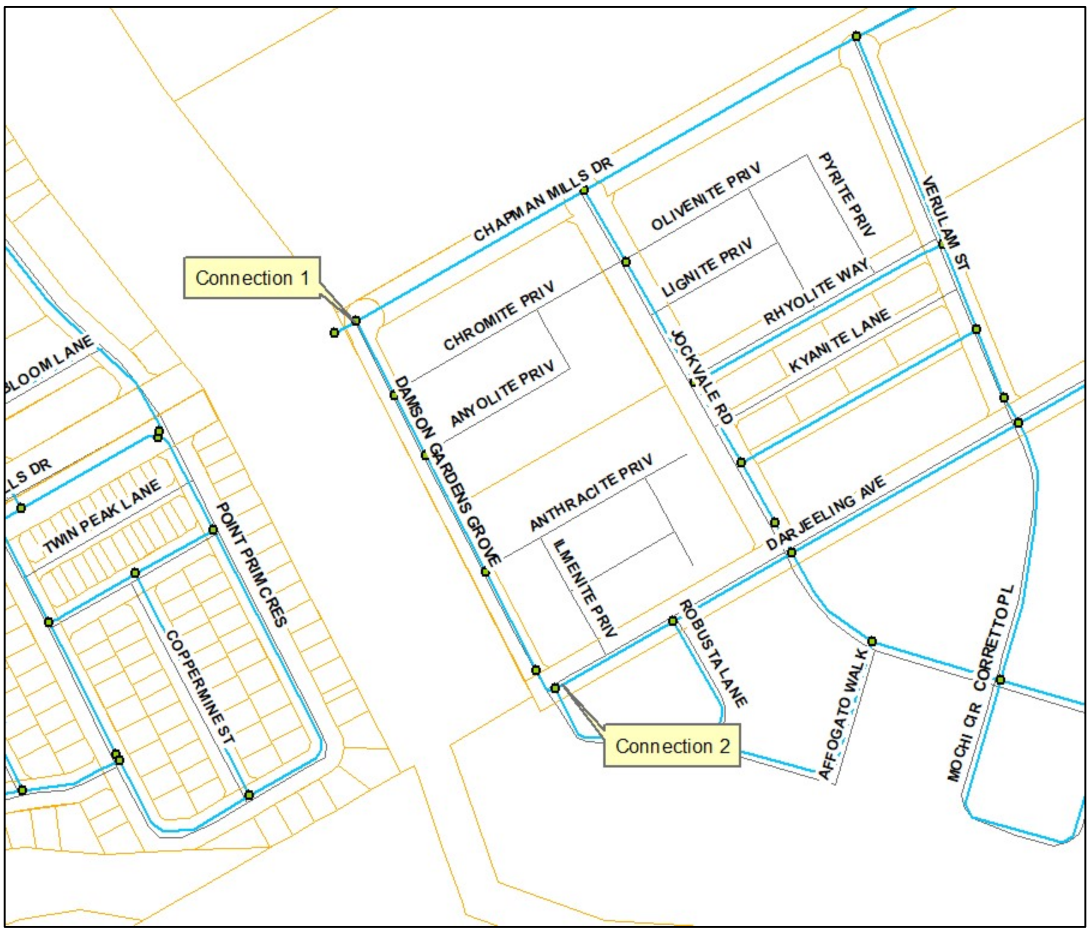
The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

Boundary Conditions
Barrhaven Conservancy East

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	832	13.87
Maximum Daily Demand	2,080	34.67
Peak Hour	4,576	76.27
Fire Flow Demand #1	13,000	216.67

Location



Scenario 1 Results – Existing Conditions BSDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.7	93.7
Peak Hour	142.5	70.7
Basic Day plus Fire 1	131.0	54.2

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.7	95.1
Peak Hour	142.5	72.1
Basic Day plus Fire 1	127.4	50.6

Ground Elevation = 91.8 m

Scenario 1 Results – Existing Conditions MXDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	157.0	91.2
Peak Hour	137.5	63.5
Max Day plus Fire 1	139.6	66.5

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	157.0	92.6
Peak Hour	137.5	64.9
Max Day plus Fire 1	135.8	62.5

Ground Elevation = 91.8 m

Scenario 1 Results – SUC Zone Reconfiguration BSDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	150.0	81.3
Peak Hour	147.6	77.9
Basic Day plus Fire 1	138.7	65.2

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	150.0	82.8
Peak Hour	147.6	79.2
Basic Day plus Fire 1	135.1	61.5

Ground Elevation = 91.8 m

Scenario 1 Results – SUC Zone Reconfiguration MXDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	148.6	79.3
Peak Hour	144.2	73.0
Max Day plus Fire 1	137.0	62.8

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	148.6	80.7
Peak Hour	144.0	74.2
Max Day plus Fire 1	133.2	58.8

Ground Elevation = 91.8 m

Scenario 2 Results – Existing Conditions BSDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.7	93.7
Peak Hour	142.5	70.7
Basic Day plus Fire 1	131.2	54.5

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	158.7	93.7
Peak Hour	142.5	70.7
Basic Day plus Fire 1	132.4	57.6

Ground Elevation = 91.8 m

Scenario 2 Results – Existing Conditions MXDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	157.0	91.2
Peak Hour	137.5	63.6
Max Day plus Fire 1	139.9	66.9

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	157.0	92.6
Peak Hour	137.5	65.0
Max Day plus Fire 1	141.1	70.1

Ground Elevation = 91.8 m

Scenario 2 Results – SUC Zone Reconfiguration BSDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	149.5	80.7
Peak Hour	147.3	77.5
Basic Day plus Fire 1	138.6	65.1

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	149.5	80.7
Peak Hour	147.3	77.5
Basic Day plus Fire 1	139.8	68.2

Ground Elevation = 91.8 m

Scenario 2 Results – SUC Zone Reconfiguration MXDY

Connection 1 – Chapman Mills Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.9	78.3
Peak Hour	144.1	72.9
Max Day plus Fire 1	136.8	62.6

Ground Elevation = 92.8 m

Connection 2 – Danson Gardens Grove / Darjeeling Ave.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.9	79.7
Peak Hour	144.1	74.3
Max Day plus Fire 1	138.1	65.8

Ground Elevation = 91.8 m

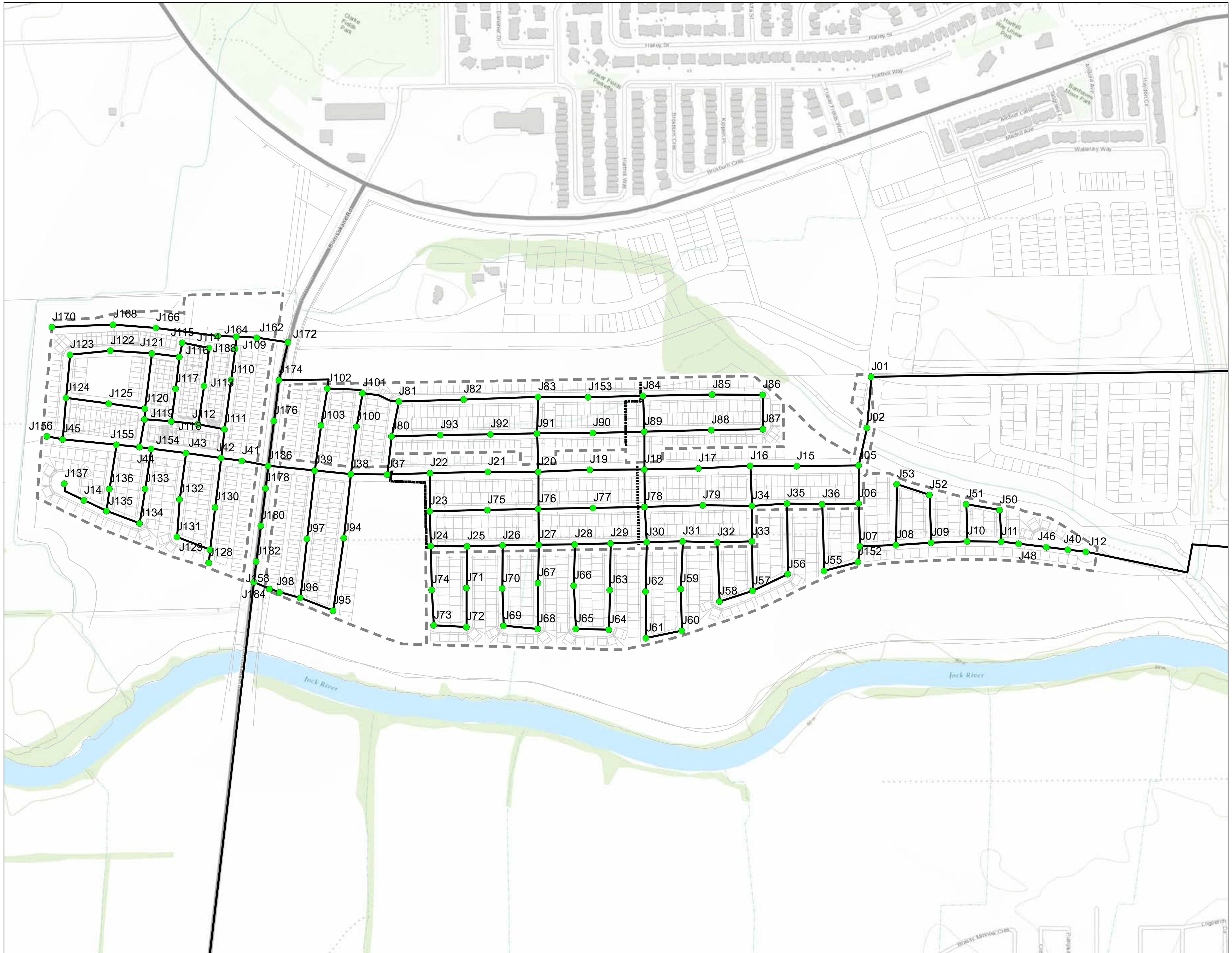
Notes

1. The watermain on Darjeeling Ave. was upsized to a 300mm diameter pipe between Danson Gardens Grove and Jockvale Road during Scenario 2 for modelling purposes.
2. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
   a. If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
   b. Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

Appendix C JUNCTION IDS

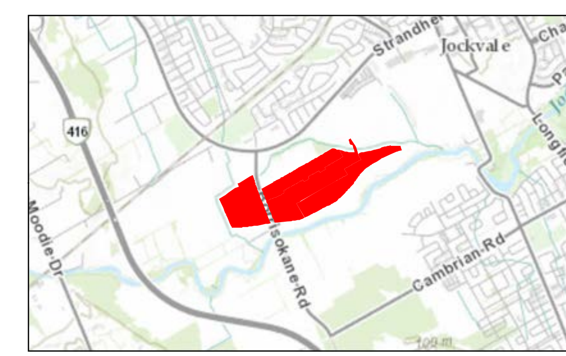


Legend
- Development Phase Boundary
- Development Sub-Phase Boundary
- Property Line
- Future Watermain
- Model Junction

0 120 240 metres

(At original document size of 11x17)
1:6,500

Notes
1. Coordinate System: NAD 1983 CSRS MTM 9
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Project Location
Ottawa, ON

Client/Project
David Schaeffer Engineering Ltd
Barrhaven Conservancy East (Phases 2, 3, 4 & Jock River)
Water Distribution System Analysis

Figure No.
C1

Title
Junction IDs

Appendix D MODEL RESULTS

163401660 - Barrhaven Conservancy

Model Results - AVDY

Option A - 2 Connections - Phase 2 (2A, 2B, 2C)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.11*	*150.00*	*81.74*
Minimum	*0.00*	*150.00*	*80.32*
J01	0.07	150.00	80.32
J02	0.00	150.00	80.93
J05	0.07	150.00	81.43
J06	0.07	150.00	81.57
J07	0.11	150.00	81.73
J08	0.11	150.00	81.60
J09	0.11	150.00	81.09
J10	0.11	150.00	81.34
J11	0.11	150.00	81.23
J12	0.11	150.00	81.09
J15	0.07	150.00	81.28
J158	0.00	150.00	81.74
J16	0.07	150.00	81.44
J17	0.07	150.00	81.27
J178	0.08	150.00	81.36
J18	0.07	150.00	81.06
J180	0.08	150.00	81.57
J182	0.08	150.00	81.68
J184	0.08	150.00	81.74
J186	0.08	150.00	81.26
J19	0.10	150.00	80.84
J20	0.10	150.00	81.31
J21	0.10	150.00	81.16
J22	0.10	150.00	81.21
J23	0.10	150.00	81.34
J24	0.10	150.00	81.47
J25	0.10	150.00	81.36
J26	0.10	150.00	81.45
J27	0.10	150.00	81.58
J28	0.10	150.00	81.51
J29	0.10	150.00	81.51
J30	0.07	150.00	81.44
J31	0.07	150.00	81.57
J32	0.07	150.00	81.47
J33	0.07	150.00	81.70
J34	0.07	150.00	81.57
J35	0.07	150.00	81.53
J36	0.07	150.00	81.65
J37	0.08	150.00	81.13
J38	0.08	150.00	81.26
J39	0.08	150.00	81.26
J40	0.11	150.00	81.12
J46	0.11	150.00	81.16
J48	0.11	150.00	81.20
J75	0.10	150.00	81.28
J76	0.10	150.00	81.45
J77	0.10	150.00	81.17
J78	0.07	150.00	81.33
J79	0.07	150.00	81.41
J94	0.08	150.00	81.51
J95	0.08	150.00	81.74
J96	0.08	150.00	81.61
J97	0.08	150.00	81.37
J98	0.00	150.00	81.54

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.11*	*149.50*	*81.03*
Minimum	*0.00*	*149.50*	*79.61*
J01	0.07	149.50	79.61
J02	0.00	149.50	80.22
J05	0.07	149.50	80.72
J06	0.07	149.50	80.86
J07	0.11	149.50	81.01
J08	0.11	149.50	80.89
J09	0.11	149.50	80.38
J10	0.11	149.50	80.63
J11	0.11	149.50	80.52
J12	0.11	149.50	80.38
J15	0.07	149.50	80.57
J158	0.00	149.50	81.03
J16	0.07	149.50	80.73
J17	0.07	149.50	80.56
J178	0.08	149.50	80.64
J18	0.07	149.50	80.35
J180	0.08	149.50	80.86
J182	0.08	149.50	80.97
J184	0.08	149.50	81.03
J186	0.08	149.50	80.54
J19	0.10	149.50	80.13
J20	0.10	149.50	80.60
J21	0.10	149.50	80.45
J22	0.10	149.50	80.50
J23	0.10	149.50	80.63
J24	0.10	149.50	80.76
J25	0.10	149.50	80.64
J26	0.10	149.50	80.74
J27	0.10	149.50	80.87
J28	0.10	149.50	80.80
J29	0.10	149.50	80.80
J30	0.07	149.50	80.73
J31	0.07	149.50	80.86
J32	0.07	149.50	80.76
J33	0.07	149.50	80.99
J34	0.07	149.50	80.86
J35	0.07	149.50	80.82
J36	0.07	149.50	80.94
J37	0.08	149.50	80.42
J38	0.08	149.50	80.54
J39	0.08	149.50	80.54
J40	0.11	149.50	80.41
J46	0.11	149.50	80.45
J48	0.11	149.50	80.49
J75	0.10	149.50	80.57
J76	0.10	149.50	80.74
J77	0.10	149.50	80.46
J78	0.07	149.50	80.62
J79	0.07	149.50	80.70
J94	0.08	149.50	80.80
J95	0.08	149.50	81.03
J96	0.08	149.50	80.90
J97	0.08	149.50	80.66
J98	0.00	149.50	80.83

Option B - 3 Connections - Phase 2 (2A, 2B, 2C)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.11*	*150.00*	*81.73*
Minimum	*0.00*	*149.99*	*80.31*
J01	0.07	150.00	80.31
J02	0.00	150.00	80.92
J05	0.07	150.00	81.42
J06	0.07	150.00	81.56
J07	0.11	150.00	81.72
J08	0.11	150.00	81.59
J09	0.11	150.00	81.08
J10	0.11	150.00	81.34
J11	0.11	150.00	81.22
J12	0.11	150.00	81.08
J15	0.07	149.99	81.28
J158	0.00	149.99	81.73
J16	0.07	149.99	81.43
J17	0.07	149.99	81.26
J178	0.08	149.99	81.35
J18	0.07	149.99	81.05
J180	0.08	149.99	81.56
J182	0.08	149.99	81.68
J184	0.08	149.99	81.73
J186	0.08	149.99	81.25
J19	0.10	149.99	80.84
J20	0.10	149.99	81.31
J21	0.10	149.99	81.15
J22	0.10	149.99	81.21
J23	0.10	149.99	81.33
J24	0.10	149.99	81.46
J25	0.10	149.99	81.35
J26	0.10	149.99	81.45
J27	0.10	149.99	81.58
J28	0.10	149.99	81.51
J29	0.10	149.99	81.51
J30	0.07	149.99	81.43
J31	0.07	149.99	81.56
J32	0.07	149.99	81.46
J33	0.07	149.99	81.69
J34	0.07	149.99	81.56
J35	0.07	149.99	81.52
J36	0.07	149.99	81.65
J37	0.08	149.99	81.12
J38	0.08	149.99	81.25
J39	0.08	149.99	81.25
J40	0.11	150.00	81.11
J46	0.11	150.00	81.16
J48	0.11	150.00	81.20
J75	0.10	149.99	81.28
J76	0.10	149.99	81.45
J77	0.10	149.99	81.16
J78	0.07	149.99	81.32
J79	0.07	149.99	81.41
J94	0.08	149.99	81.50
J95	0.08	149.99	81.73
J96	0.08	149.99	81.60
J97	0.08	149.99	81.36
J98	0.00	149.99	81.53

Option A - 2 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.15*	*150.00*	*81.73*
Minimum	*0.00*	*149.99*	*80.32*
J01	0.07	150.00	80.32
J02	0.00	150.00	80.93
J05	0.07	150.00	81.42
J06	0.07	150.00	81.57
J07	0.11	150.00	81.72
J08	0.11	150.00	81.60
J09	0.11	150.00	81.08
J10	0.11	150.00	81.34
J100	0.15	149.99	80.80
J101	0.15	149.99	80.95
J102	0.15	149.99	80.84
J103	0.15	149.99	80.68
J11	0.11	150.00	81.23
J12	0.11	150.00	81.09
J15	0.07	150.00	81.28
J153	0.15	149.99	80.77
J158	0.00	149.99	81.73
J16	0.07	150.00	81.44
J17	0.07	150.00	81.27
J174	0.15	149.99	81.02
J176	0.15	149.99	81.14
J178	0.08	149.99	81.35
J18	0.07	150.00	81.05
J180	0.08	149.99	81.56
J182	0.08	149.99	81.68
J184	0.08	149.99	81.73
J186	0.08	149.99	81.25
J19	0.10	150.00	80.84
J20	0.10	150.00	81.31
J21	0.10	150.00	81.15
J22	0.10	150.00	81.21
J23	0.10	150.00	81.34
J24	0.10	150.00	81.46
J25	0.10	150.00	81.35
J26	0.10	150.00	81.45
J27	0.10	150.00	81.58
J28	0.10	150.00	81.51
J29	0.10	150.00	81.51
J30	0.07	150.00	81.44
J31	0.07	150.00	81.56
J32	0.07	150.00	81.47
J33	0.07	150.00	81.69
J34	0.07	150.00	81.57
J35	0.07	150.00	81.52
J36	0.07	150.00	81.65
J37	0.08	149.99	81.12
J38	0.08	149.99	81.25
J39	0.08	149.99	81.25
J40	0.11	150.00	81.12
J46	0.11	150.00	81.16
J48	0.11	150.00	81.20
J75	0.10	150.00	81.28
J76	0.10	150.00	81.45
J77	0.10	150.00	81.17
J78	0.07	150.00	81.32
J79	0.07	150.00	81.41
J80	0.15	149.99	80.98
J81	0.15	149.99	80.80
J82	0.15	149.99	80.84
J83	0.15	149.99	81.05
J84	0.15	150.00	80.92
J85	0.15	149.99	81.02
J86	0.15	149.99	81.24
J87	0.15	149.99	81.19
J88	0.15	149.99	81.05
J89	0.15	150.00	81.05
J90	0.15	150.00	80.88
J91	0.15	149.99	81.18
J92	0.15	149.99	80.99
J93	0.15	149.99	80.88
J94	0.08	149.99	81.51
J95	0.08	149.99	81.73
J96	0.08	149.99	81.61
J97	0.08	149.99	81.36
J98	0.00	149.99	81.53

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.15*	*149.50*	*81.02*
Minimum	*0.00*	*149.49*	*79.61*
J01	0.07	149.50	79.61
J02	0.00	149.50	80.22
J05	0.07	149.50	80.71
J06	0.07	149.50	80.86
J07	0.11	149.50	81.01
J08	0.11	149.50	80.88
J09	0.11	149.50	80.37
J10	0.11	149.50	80.63
J100	0.15	149.49	80.08
J101	0.15	149.49	80.24
J102	0.15	149.49	80.13
J103	0.15	149.49	79.97
J11	0.11	149.50	80.52
J12	0.11	149.50	80.37
J15	0.07	149.50	80.57
J153	0.15	149.49	80.06
J158	0.00	149.49	81.02
J16	0.07	149.50	80.73
J17	0.07	149.50	80.56
J174	0.15	149.49	80.31
J176	0.15	149.49	80.43
J178	0.08	149.49	80.64
J18	0.07	149.50	80.34
J180	0.08	149.49	80.85
J182	0.08	149.49	80.97
J184	0.08	149.49	81.02
J186	0.08	149.49	80.54
J19	0.10	149.50	80.13
J20	0.10	149.50	80.60
J21	0.10	149.50	80.44
J22	0.10	149.50	80.50
J23	0.10	149.50	80.63
J24	0.10	149.50	80.75
J25	0.10	149.50	80.64
J26	0.10	149.50	80.74
J27	0.10	149.50	80.87
J28	0.10	149.50	80.80
J29	0.10	149.50	80.80
J30	0.07	149.50	80.73
J31	0.07	149.50	80.85
J32	0.07	149.50	80.75
J33	0.07	149.50	80.98
J34	0.07	149.50	80.85
J35	0.07	149.50	80.81
J36	0.07	149.50	80.94
J37	0.08	149.49	80.41
J38	0.08	149.49	80.54
J39	0.08	149.49	80.54
J40	0.11	149.50	80.40
J46	0.11	149.50	80.45
J48	0.11	149.50	80.49
J75	0.10	149.50	80.57
J76	0.10	149.50	80.74
J77	0.10	149.50	80.46
J78	0.07	149.50	80.61
J79	0.07	149.50	80.70
J80	0.15	149.49	80.27
J81	0.15	149.49	80.08
J82	0.15	149.49	80.13
J83	0.15	149.49	80.34
J84	0.15	149.50	80.21
J85	0.15	149.49	80.31
J86	0.15	149.49	80.53
J87	0.15	149.49	80.48
J88	0.15	149.49	80.34
J89	0.15	149.50	80.34
J90	0.15	149.50	80.17
J91	0.15	149.49	80.47
J92	0.15	149.49	80.28
J93	0.15	149.49	80.17
J94	0.08	149.49	80.80
J95	0.08	149.49	81.02
J96	0.08	149.49	80.90
J97	0.08	149.49	80.65
J98	0.00	149.49	80.82

Option B - 3 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.15*	*149.99*	*81.71*
Minimum	*0.00*	*149.98*	*80.30*
J01	0.07	149.99	80.30
J02	0.00	149.99	80.91
J05	0.07	149.99	81.41
J06	0.07	149.99	81.55
J07	0.11	149.99	81.71
J08	0.11	149.99	81.58
J09	0.11	149.99	81.07
J10	0.11	149.99	81.33
J100	0.15	149.98	80.78
J101	0.15	149.98	80.93
J102	0.15	149.98	80.82
J103	0.15	149.98	80.66
J11	0.11	149.99	81.22
J12	0.11	149.99	81.08
J15	0.07	149.98	81.26
J153	0.15	149.98	80.75
J158	0.00	149.98	81.71
J16	0.07	149.98	81.42
J17	0.07	149.98	81.25
J174	0.15	149.98	81.00
J176	0.15	149.98	81.12
J178	0.08	149.98	81.33
J18	0.07	149.98	81.03
J180	0.08	149.98	81.54
J182	0.08	149.98	81.66
J184	0.08	149.98	81.71
J186	0.08	149.98	81.23
J19	0.10	149.98	80.82
J20	0.10	149.98	81.29
J21	0.10	149.98	81.13
J22	0.10	149.98	81.19
J23	0.10	149.98	81.32
J24	0.10	149.98	81.44
J25	0.10	149.98	81.33
J26	0.10	149.98	81.43
J27	0.10	149.98	81.56
J28	0.10	149.98	81.49
J29	0.10	149.98	81.49
J30	0.07	149.98	81.42
J31	0.07	149.98	81.55
J32	0.07	149.98	81.45
J33	0.07	149.98	81.68
J34	0.07	149.98	81.55
J35	0.07	149.98	81.51
J36	0.07	149.99	81.64
J37	0.08	149.98	81.10
J38	0.08	149.98	81.23
J39	0.08	149.98	81.23
J40	0.11	149.99	81.11
J46	0.11	149.99	81.15
J48	0.11	149.99	81.19
J75	0.10	149.98	81.26
J76	0.10	149.98	81.43
J77	0.10	149.98	81.15
J78	0.07	149.98	81.30
J79	0.07	149.98	81.39
J80	0.15	149.98	80.96
J81	0.15	149.98	80.78
J82	0.15	149.98	80.82
J83	0.15	149.98	81.03
J84	0.15	149.98	80.90
J85	0.15	149.98	81.00
J86	0.15	149.98	81.22
J87	0.15	149.98	81.17
J88	0.15	149.98	81.03
J89	0.15	149.98	81.03
J90	0.15	149.98	80.86
J91	0.15	149.98	81.16
J92	0.15	149.98	80.98
J93	0.15	149.98	80.86
J94	0.08	149.98	81.49
J95	0.08	149.98	81.71
J96	0.08	149.98	81.59
J97	0.08	149.98	81.34
J98	0.00	149.98	81.52

Option A - 2 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4				Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4				Option B - 3 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**	**Junction ID**	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**	**Junction ID**	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.15*	*150.00*	*81.72*	***Maximum***	*0.15*	*149.50*	*81.01*	***Maximum***	*0.15*	*149.49*	*81.00*
Minimum	*0.00*	*149.99*	*80.31*	***Minimum***	*0.00*	*149.49*	*79.60*	***Minimum***	*0.00*	*149.48*	*79.59*
J01	0.07	149.99	80.31	J01	0.07	149.49	79.60	J01	0.07	149.49	79.59
J02	0.00	149.99	80.92	J02	0.00	149.49	80.21	J02	0.00	149.49	80.20
J05	0.07	149.99	81.42	J05	0.07	149.49	80.71	J05	0.07	149.49	80.70
J06	0.07	149.99	81.56	J06	0.07	149.49	80.85	J06	0.07	149.49	80.84
J07	0.11	149.99	81.72	J07	0.11	149.49	81.01	J07	0.11	149.49	81.00
J08	0.11	149.99	81.59	J08	0.11	149.49	80.88	J08	0.11	149.49	80.87
J09	0.11	150.00	81.08	J09	0.11	149.50	80.37	J09	0.11	149.49	80.36
J10	0.11	150.00	81.34	J10	0.11	149.50	80.63	J10	0.11	149.49	80.62
J100	0.15	149.99	80.79	J100	0.15	149.49	80.07	J100	0.15	149.48	80.06
J101	0.15	149.99	80.94	J101	0.15	149.49	80.23	J101	0.15	149.48	80.22
J102	0.15	149.99	80.83	J102	0.15	149.49	80.12	J102	0.15	149.48	80.11
J103	0.15	149.99	80.67	J103	0.15	149.49	79.96	J103	0.15	149.48	79.95
J109	0.11	149.99	80.96	J109	0.11	149.49	80.24	J109	0.11	149.48	80.23
J11	0.11	150.00	81.22	J11	0.11	149.50	80.51	J11	0.11	149.49	80.50
J110	0.11	149.99	81.13	J110	0.11	149.49	80.42	J110	0.11	149.48	80.40
J111	0.11	149.99	81.20	J111	0.11	149.49	80.49	J111	0.11	149.48	80.47
J112	0.11	149.99	81.10	J112	0.11	149.49	80.39	J112	0.11	149.48	80.37
J113	0.11	149.99	81.01	J113	0.11	149.49	80.30	J113	0.11	149.48	80.29
J114	0.11	149.99	80.87	J114	0.11	149.49	80.16	J114	0.11	149.48	80.15
J115	0.11	149.99	80.84	J115	0.11	149.49	80.13	J115	0.11	149.48	80.12
J116	0.11	149.99	80.88	J116	0.11	149.49	80.17	J116	0.11	149.48	80.16
J117	0.11	149.99	81.01	J117	0.11	149.49	80.30	J117	0.11	149.48	80.29
J118	0.11	149.99	81.10	J118	0.11	149.49	80.39	J118	0.11	149.48	80.37
J119	0.11	149.99	81.23	J119	0.11	149.49	80.51	J119	0.11	149.48	80.50
J12	0.11	150.00	81.08	J12	0.11	149.50	80.37	J12	0.11	149.49	80.37
J120	0.11	149.99	81.23	J120	0.11	149.49	80.51	J120	0.11	149.48	80.50
J121	0.11	149.99	81.03	J121	0.11	149.49	80.32	J121	0.11	149.48	80.30
J122	0.11	149.99	80.87	J122	0.11	149.49	80.16	J122	0.11	149.48	80.15
J123	0.11	149.99	81.01	J123	0.11	149.49	80.30	J123	0.11	149.48	80.29
J124	0.11	149.99	81.15	J124	0.11	149.49	80.44	J124	0.11	149.48	80.43
J125	0.11	149.99	81.34	J125	0.11	149.49	80.63	J125	0.11	149.48	80.62
J128	0.00	149.99	81.69	J128	0.00	149.49	80.98	J128	0.00	149.48	80.97
J129	0.11	149.99	81.67	J129	0.11	149.49	80.96	J129	0.11	149.48	80.94
J130	0.11	149.99	81.45	J130	0.11	149.49	80.74	J130	0.11	149.48	80.73
J131	0.11	149.99	81.57	J131	0.11	149.49	80.86	J131	0.11	149.48	80.84
J132	0.11	149.99	81.41	J132	0.11	149.49	80.70	J132	0.11	149.48	80.69
J133	0.11	149.99	81.50	J133	0.11	149.49	80.78	J133	0.11	149.48	80.77
J134	0.11	149.99	81.62	J134	0.11	149.49	80.91	J134	0.11	149.48	80.90
J135	0.11	149.99	81.72	J135	0.11	149.49	81.01	J135	0.11	149.48	81.00
J136	0.11	149.99	81.59	J136	0.11	149.49	80.88	J136	0.11	149.48	80.87
J137	0.11	149.99	81.51	J137	0.11	149.49	80.80	J137	0.11	149.48	80.79
J14	0.11	149.99	81.63	J14	0.11	149.49	80.92	J14	0.11	149.48	80.91
J15	0.07	149.99	81.28	J15	0.07	149.49	80.57	J15	0.07	149.48	80.55
J153	0.15	149.99	80.76	J153	0.15	149.49	80.05	J153	0.15	149.48	80.04
J154	0.11	149.99	81.35	J154	0.11	149.49	80.64	J154	0.11	149.48	80.63
J155	0.11	149.99	81.47	J155	0.11	149.49	80.76	J155	0.11	149.48	80.74
J156	0.00	149.99	81.23	J156	0.00	149.49	80.51	J156	0.00	149.48	80.50
J158	0.00	149.99	81.72	J158	0.00	149.49	81.01	J158	0.00	149.48	81.00
J16	0.07	149.99	81.43	J16	0.07	149.49	80.72	J16	0.07	149.48	80.71
J162	0.00	149.99	80.84	J162	0.00	149.49	80.13	J162	0.00	149.48	80.12
J164	0.00	149.99	80.91	J164	0.00	149.49	80.20	J164	0.00	149.48	80.19
J166	0.00	149.99	80.73	J166	0.00	149.49	80.02	J166	0.00	149.48	80.01
J168	0.00	149.99	81.01	J168	0.00	149.49	80.30	J168	0.00	149.48	80.29
J17	0.07	149.99	81.26	J17	0.07	149.49	80.55	J17	0.07	149.48	80.54
J170	0.00	149.99	80.50	J170	0.00	149.49	79.79	J170	0.00	149.48	79.78
J172	0.00	149.99	80.84	J172	0.00	149.49	80.13	J172	0.00	149.48	80.12
J174	0.15	149.99	81.01	J174	0.15	149.49	80.30	J174	0.15	149.48	80.29
J176	0.15	149.99	81.13	J176	0.15	149.49	80.42	J176	0.15	149.48	80.40
J178	0.08	149.99	81.34	J178	0.08	149.49	80.63	J178	0.08	149.48	80.62
J18	0.07	149.99	81.04	J18	0.07	149.49	80.33	J18	0.07	149.48	80.32
J180	0.08	149.99	81.55	J180	0.08	149.49	80.84	J180	0.08	149.48	80.83
J182	0.08	149.99	81.67	J182	0.08	149.49	80.96	J182	0.08	149.48	80.95
J184	0.08	149.99	81.72	J184	0.08	149.49	81.01	J184	0.08	149.48	81.00
J186	0.08	149.99	81.24	J186	0.08	149.49	80.53	J186	0.08	149.48	80.52
J188	0.00	149.99	80.88	J188	0.00	149.49	80.17	J188	0.00	149.48	80.16
J19	0.10	149.99	80.83	J19	0.10	149.49	80.12	J19	0.10	149.48	80.11
J20	0.10	149.99	81.30	J20	0.10	149.49	80.59	J20	0.10	149.48	80.58
J21	0.10	149.99	81.14	J21	0.10	149.49	80.43	J21	0.10	149.48	80.42
J22	0.10	149.99	81.20	J22	0.10	149.49	80.49	J22	0.10	149.48	80.48
J23	0.10	149.99	81.33	J23	0.10	149.49	80.62	J23	0.10	149.48	80.60
J24	0.10	149.99	81.46	J24	0.10	149.49	80.74	J24	0.10	149.48	80.73
J25	0.10	149.99	81.34	J25	0.10	149.49	80.63	J25	0.10	149.48	80.62
J26	0.10	149.99	81.44	J26	0.10	149.49	80.73	J26	0.10	149.48	80.72
J27	0.10	149.99	81.57	J27	0.10	149.49	80.86	J27	0.10	149.48	80.85
J28	0.10	149.99	81.50	J28	0.10	149.49	80.79	J28	0.10	149.48	80.78
J29	0.10	149.99	81.50	J29	0.10	149.49	80.79	J29	0.10	149.48	80.78
J30	0.07	149.99	81.43	J30	0.07	149.49	80.72	J30	0.07	149.48	80.71
J31	0.07	149.99	81.56	J31	0.07	149.49	80.85	J31	0.07	149.48	80.83
J32	0.07	149.99	81.46	J32	0.07	149.49	80.75	J32	0.07	149.48	80.74
J33	0.07	149.99	81.69	J33	0.07	149.49	80.98	J33	0.07	149.48	80.96
J34	0.07	149.99	81.56	J34	0.07	149.49	80.85	J34	0.07	149.48	80.84
J35	0.07	149.99	81.52	J35	0.07	149.49	80.81	J35	0.07	149.48	80.79
J36	0.07	149.99	81.65	J36	0.07	149.49	80.94	J36	0.07	149.48	80.92
J37	0.08	149.99	81.11	J37	0.08	149.49	80.40	J37	0.08	149.48	80.39
J38	0.08	149.99	81.24	J38	0.08	149.49	80.53	J38	0.08	149.48	80.52
J39	0.08	149.99	81.24	J39	0.08	149.49	80.53	J39	0.08	149.48	80.52
J40	0.11	150.00	81.11	J40	0.11	149.50	80.40	J40	0.11	149.49	80.40
J41	0.11	149.99	81.30	J41	0.11	149.49	80.59	J41	0.11	149.48	80.57
J42	0.11	149.99	81.34	J42	0.11	149.49	80.63	J42	0.11	149.48	80.62
J43	0.11	149.99	81.24	J43	0.11	149.49	80.53	J43	0.11	149.48	80.52
J44	0.11	149.99	81.40	J44	0.11	149.49	80.69	J44	0.11	149.48	80.67
J45	0.11	149.99	81.28	J45	0.11	149.49	80.57	J45	0.11	149.48	80.56
J46	0.11	150.00	81.16	J46	0.11	149.50	80.44	J46	0.11	149.49	80.44
J48	0.11	150.00	81.19	J48	0.11	149.50	80.48	J48	0.11	149.49	80.48
J75	0.10	149.99	81.27	J75	0.10	149.49	80.56	J75	0.10	149.48	80.55
J76	0.10	149.99	81.44	J76	0.10	149.49	80.73	J76	0.10	149.48	80.72
J77	0.10	149.99	81.16	J77	0.10	149.49	80.45	J77	0.10	149.48	80.44
J78	0.07	149.99	81.31	J78	0.07	149.49	80.60	J78	0.07	149.48	80.59
J79	0.07	149.99	81.40	J79	0.07	149.49	80.69	J79	0.07	149.48	80.68
J80	0.15	149.99	80.97	J80	0.15	149.49	80.26	J80	0.15	149.48	80.25
J81	0.15	149.99	80.79	J81	0.15	149.49	80.08	J81	0.15	149.48	80.06
J82	0.15	149.99	80.83	J82	0.15	149.49	80.12	J82	0.15	149.48	80.11
J83	0.15	149.99	81.04	J83	0.15	149.49	80.33	J83	0.15	149.48	80.32
J84	0.15	149.99	80.92	J84	0.15	149.49	80.20	J84	0.15	149.48	80.19
J85	0.15	149.99	81.01	J85	0.15	149.49	80.30	J85	0.15	149.48	80.29
J86	0.15	149.99	81.23	J86	0.15	149.49	80.52	J86	0.15	149.48	80.51
J87	0.15	149.99	81.19	J87	0.15	149.49	80.47	J87	0.15	149.48	80.46
J88	0.15	149.99	81.04	J88	0.15	149.49	80.33	J88	0.15	149.48	80.32
J89	0.15	149.99	81.04	J89	0.15	149.49	80.33	J89	0.15	149.48	80.32
J90	0.15	149.99	80.87	J90	0.15	149.49	80.16	J90	0.15	149.48	80.15
J91	0.15	149.99	81.17	J91	0.15	149.49	80.46	J91	0.15	149.48	80.45
J92	0.15	149.99	80.99	J92	0.15	149.49	80.27	J92	0.15	149.48	80.26
J93	0.15	149.99	80.87	J93	0.15	149.49	80.16	J93	0.15	149.48	80.15
J94	0.08	149.99	81.50	J94	0.08	149.49	80.79	J94	0.08	149.48	80.78
J95	0.08	149.99	81.72	J95	0.08	149.49	81.01	J95	0.08	149.48	81.00
J96	0.08	149.99	81.60	J96	0.08	149.49	80.88	J96	0.08	149.48	80.87
J97	0.08	149.99	81.35	J97	0.08	149.49	80.64	J97	0.08	149.48	80.63
J98	0.00	149.99	81.52	J98	0.00	149.49	80.81	J98	0.00	149.48	80.80

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Model Results - AVDY

Option A - 2 Connections - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				Option A - 2 Connections with Upgrades on Danson Gardens Grv - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				Option B - 3 Connections - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)			
Junction ID	Demand (L/s)	Head (m)	Pressure (psi)	Junction ID	Demand (L/s)	Head (m)	Pressure (psi)	Junction ID	Demand (L/s)	Head (m)	Pressure (psi)
Maximum	*0.15*	*150.00*	*81.87*	*Maximum*	*0.15*	*149.50*	*81.16*	*Maximum*	*0.15*	*149.49*	*81.14*
Minimum	*0.00*	*149.98*	*80.31*	*Minimum*	*0.00*	*149.48*	*79.60*	*Minimum*	*0.00*	*149.47*	*79.58*
J01	0.07	149.99	80.31	J01	0.07	149.49	79.60	J01	0.07	149.48	79.58
J02	0.00	149.99	80.92	J02	0.00	149.49	80.21	J02	0.00	149.48	80.19
J05	0.07	149.99	81.42	J05	0.07	149.49	80.71	J05	0.07	149.48	80.69
J06	0.07	149.99	81.56	J06	0.07	149.49	80.85	J06	0.07	149.48	80.83
J07	0.11	149.99	81.72	J07	0.11	149.49	81.00	J07	0.11	149.48	80.99
J08	0.11	149.99	81.59	J08	0.11	149.49	80.88	J08	0.11	149.48	80.86
J09	0.11	149.99	81.08	J09	0.11	149.49	80.37	J09	0.11	149.48	80.35
J10	0.11	149.99	81.33	J10	0.11	149.49	80.62	J10	0.11	149.48	80.61
J100	0.15	149.98	80.78	J100	0.15	149.48	80.07	J100	0.15	149.47	80.05
J101	0.15	149.98	80.94	J101	0.15	149.48	80.23	J101	0.15	149.47	80.21
J102	0.15	149.98	80.82	J102	0.15	149.48	80.11	J102	0.15	149.47	80.10
J103	0.15	149.98	80.67	J103	0.15	149.48	79.96	J103	0.15	149.47	79.94
J109	0.11	149.98	80.95	J109	0.11	149.48	80.24	J109	0.11	149.47	80.22
J11	0.11	149.99	81.22	J11	0.11	149.49	80.51	J11	0.11	149.48	80.50
J110	0.11	149.98	81.12	J110	0.11	149.48	80.41	J110	0.11	149.47	80.39
J111	0.11	149.98	81.19	J111	0.11	149.48	80.48	J111	0.11	149.47	80.46
J112	0.11	149.98	81.09	J112	0.11	149.48	80.38	J112	0.11	149.47	80.36
J113	0.11	149.98	81.01	J113	0.11	149.48	80.30	J113	0.11	149.47	80.28
J114	0.11	149.98	80.86	J114	0.11	149.48	80.15	J114	0.11	149.47	80.14
J115	0.11	149.98	80.84	J115	0.11	149.48	80.12	J115	0.11	149.47	80.11
J116	0.11	149.98	80.88	J116	0.11	149.48	80.17	J116	0.11	149.47	80.15
J117	0.11	149.98	81.01	J117	0.11	149.48	80.30	J117	0.11	149.47	80.28
J118	0.11	149.98	81.09	J118	0.11	149.48	80.38	J118	0.11	149.47	80.36
J119	0.11	149.98	81.22	J119	0.11	149.48	80.51	J119	0.11	149.47	80.49
J12	0.11	150.00	81.08	J12	0.11	149.50	80.37	J12	0.11	149.49	80.36
J120	0.11	149.98	81.22	J120	0.11	149.48	80.51	J120	0.11	149.47	80.49
J121	0.11	149.98	81.02	J121	0.11	149.48	80.31	J121	0.11	149.47	80.29
J122	0.11	149.98	80.86	J122	0.11	149.48	80.15	J122	0.11	149.47	80.14
J123	0.11	149.98	81.01	J123	0.11	149.48	80.30	J123	0.11	149.47	80.28
J124	0.11	149.98	81.15	J124	0.11	149.48	80.44	J124	0.11	149.47	80.42
J125	0.11	149.98	81.33	J125	0.11	149.48	80.62	J125	0.11	149.47	80.61
J128	0.00	149.98	81.69	J128	0.00	149.48	80.98	J128	0.00	149.47	80.96
J129	0.11	149.98	81.66	J129	0.11	149.48	80.95	J129	0.11	149.47	80.93
J130	0.11	149.98	81.45	J130	0.11	149.48	80.74	J130	0.11	149.47	80.72
J131	0.11	149.98	81.56	J131	0.11	149.48	80.85	J131	0.11	149.47	80.83
J132	0.11	149.98	81.40	J132	0.11	149.48	80.69	J132	0.11	149.47	80.68
J133	0.11	149.98	81.49	J133	0.11	149.48	80.78	J133	0.11	149.47	80.76
J134	0.11	149.98	81.62	J134	0.11	149.48	80.91	J134	0.11	149.47	80.89
J135	0.11	149.98	81.72	J135	0.11	149.48	81.01	J135	0.11	149.47	80.99
J136	0.11	149.98	81.59	J136	0.11	149.48	80.88	J136	0.11	149.47	80.86
J137	0.11	149.98	81.50	J137	0.11	149.48	80.79	J137	0.11	149.47	80.78
J14	0.11	149.98	81.63	J14	0.11	149.48	80.91	J14	0.11	149.47	80.90
J15	0.07	149.99	81.27	J15	0.07	149.49	80.56	J15	0.07	149.48	80.54
J152	0.11	149.99	81.76	J152	0.11	149.49	81.05	J152	0.11	149.48	81.03
J153	0.15	149.98	80.75	J153	0.15	149.48	80.04	J153	0.15	149.47	80.02
J154	0.11	149.98	81.35	J154	0.11	149.48	80.64	J154	0.11	149.47	80.62
J155	0.11	149.98	81.46	J155	0.11	149.48	80.75	J155	0.11	149.47	80.73
J156	0.00	149.98	81.22	J156	0.00	149.48	80.51	J156	0.00	149.47	80.49
J158	0.00	149.98	81.72	J158	0.00	149.48	81.01	J158	0.00	149.47	80.99
J16	0.07	149.99	81.43	J16	0.07	149.49	80.72	J16	0.07	149.48	80.70
J162	0.00	149.98	80.84	J162	0.00	149.48	80.13	J162	0.00	149.47	80.11
J164	0.00	149.98	80.91	J164	0.00	149.48	80.20	J164	0.00	149.47	80.18
J166	0.00	149.98	80.72	J166	0.00	149.48	80.01	J166	0.00	149.47	80.00
J168	0.00	149.98	81.01	J168	0.00	149.48	80.30	J168	0.00	149.47	80.28
J17	0.07	149.99	81.25	J17	0.07	149.49	80.54	J17	0.07	149.47	80.53
J170	0.00	149.98	80.49	J170	0.00	149.48	79.78	J170	0.00	149.47	79.77
J172	0.00	149.98	80.84	J172	0.00	149.48	80.13	J172	0.00	149.47	80.11
J174	0.15	149.98	81.01	J174	0.15	149.48	80.30	J174	0.15	149.47	80.28
J176	0.15	149.98	81.12	J176	0.15	149.48	80.41	J176	0.15	149.47	80.39
J178	0.08	149.98	81.33	J178	0.08	149.48	80.62	J178	0.08	149.47	80.61
J18	0.07	149.99	81.04	J18	0.07	149.49	80.33	J18	0.07	149.47	80.31
J180	0.08	149.98	81.55	J180	0.08	149.48	80.84	J180	0.08	149.47	80.82
J182	0.08	149.98	81.66	J182	0.08	149.48	80.95	J182	0.08	149.47	80.94
J184	0.08	149.98	81.72	J184	0.08	149.48	81.01	J184	0.08	149.47	80.99
J186	0.08	149.98	81.23	J186	0.08	149.48	80.52	J186	0.08	149.47	80.51
J188	0.00	149.98	80.87	J188	0.00	149.48	80.16	J188	0.00	149.47	80.15
J19	0.10	149.99	80.82	J19	0.10	149.49	80.11	J19	0.10	149.47	80.10
J20	0.10	149.98	81.29	J20	0.10	149.48	80.58	J20	0.10	149.47	80.57
J21	0.10	149.98	81.14	J21	0.10	149.48	80.43	J21	0.10	149.47	80.41
J22	0.10	149.98	81.19	J22	0.10	149.48	80.48	J22	0.10	149.47	80.47
J23	0.10	149.98	81.32	J23	0.10	149.48	80.61	J23	0.10	149.47	80.59
J24	0.10	149.98	81.45	J24	0.10	149.48	80.74	J24	0.10	149.47	80.72
J25	0.10	149.98	81.34	J25	0.10	149.48	80.62	J25	0.10	149.47	80.61
J26	0.10	149.98	81.44	J26	0.10	149.48	80.72	J26	0.10	149.47	80.71
J27	0.10	149.98	81.56	J27	0.10	149.48	80.85	J27	0.10	149.47	80.84
J28	0.10	149.99	81.49	J28	0.10	149.49	80.78	J28	0.10	149.47	80.76
J29	0.10	149.99	81.49	J29	0.10	149.49	80.78	J29	0.10	149.47	80.77
J30	0.07	149.99	81.42	J30	0.07	149.49	80.71	J30	0.07	149.47	80.69
J31	0.07	149.99	81.55	J31	0.07	149.49	80.84	J31	0.07	149.47	80.82
J32	0.07	149.99	81.45	J32	0.07	149.49	80.74	J32	0.07	149.47	80.72
J33	0.07	149.99	81.68	J33	0.07	149.49	80.97	J33	0.07	149.48	80.95
J34	0.07	149.99	81.55	J34	0.07	149.49	80.84	J34	0.07	149.48	80.83
J35	0.07	149.99	81.51	J35	0.07	149.49	80.80	J35	0.07	149.48	80.78
J36	0.07	149.99	81.64	J36	0.07	149.49	80.93	J36	0.07	149.48	80.91
J37	0.08	149.98	81.11	J37	0.08	149.48	80.40	J37	0.08	149.47	80.38
J38	0.08	149.98	81.23	J38	0.08	149.48	80.52	J38	0.08	149.47	80.51
J39	0.08	149.98	81.23	J39	0.08	149.48	80.52	J39	0.08	149.47	80.51
J40	0.11	149.99	81.11	J40	0.11	149.49	80.40	J40	0.11	149.49	80.39
J41	0.11	149.98	81.29	J41	0.11	149.48	80.58	J41	0.11	149.47	80.56
J42	0.11	149.98	81.33	J42	0.11	149.48	80.62	J42	0.11	149.47	80.61
J43	0.11	149.98	81.23	J43	0.11	149.48	80.52	J43	0.11	149.47	80.51
J44	0.11	149.98	81.39	J44	0.11	149.48	80.68	J44	0.11	149.47	80.66
J45	0.11	149.98	81.28	J45	0.11	149.48	80.57	J45	0.11	149.47	80.55
J46	0.11	149.99	81.15	J46	0.11	149.49	80.44	J46	0.11	149.49	80.43
J48	0.11	149.99	81.19	J48	0.11	149.49	80.48	J48	0.11	149.48	80.47
J50	0.11	149.99	81.11	J50	0.11	149.49	80.40	J50	0.11	149.48	80.38
J51	0.11	149.99	81.25	J51	0.11	149.49	80.54	J51	0.11	149.48	80.52
J52	0.11	149.99	81.28	J52	0.11	149.49	80.56	J52	0.11	149.48	80.55
J53	0.11	149.99	81.37	J53	0.11	149.49	80.66	J53	0.11	149.48	80.65
J55	0.11	149.99	81.87	J55	0.11	149.49	81.16	J55	0.11	149.48	81.14
J56	0.11	149.99	81.72	J56	0.11	149.49	81.01	J56	0.11	149.48	81.00
J57	0.11	149.99	81.87	J57	0.11	149.49	81.15	J57	0.11	149.48	81.14
J58	0.11	149.99	81.74	J58	0.11	149.49	81.03	J58	0.11	149.48	81.01
J59	0.11	149.99	81.64	J59	0.11	149.49	80.93	J59	0.11	149.47	80.91
J60	0.11	149.99	81.86	J60	0.11	149.49	81.15	J60	0.11	149.47	81.14
J61	0.11	149.99	81.74	J61	0.11	149.49	81.02	J61	0.11	149.47	81.01
J62	0.11	149.99	81.64	J62	0.11	149.49	80.93	J62	0.11	149.47	80.91
J63	0.11	149.99	81.69	J63	0.11	149.49	80.98	J63	0.11	149.47	80.96
J64	0.11	149.99	81.81	J64	0.11	149.49	81.09	J64	0.11	149.47	81.08
J65	0.11	149.99	81.82	J65	0.11	149.49	81.11	J65	0.11	149.47	81.09
J66	0.11	149.99	81.65	J66	0.11	149.49	80.94	J66	0.11	149.47	80.92
J67	0.11	149.98	81.72	J67	0.11	149.48	81.01	J67	0.11	149.47	80.99
J68	0.11	149.98	81.86	J68	0.11	149.48	81.15	J68	0.11	149.47	81.13
J69	0.11	149.98	81.72	J69	0.11	149.48	81.01	J69	0.11	149.47	80.99
J70	0.11	149.98	81.55	J70	0.11	149.48	80.84	J70	0.11	149.47	80.82
J71	0.11	149.98	81.51	J71	0.11	149.48	80.80	J71	0.11	149.47	80.78
J72	0.11	149.98	81.61	J72	0.11	149.48	80.89	J72	0.11	149.47	80.88
J73	0.11	149.98	81.72	J73	0.11	149.48	81.01	J73	0.11	149.47	80.99
J74	0.11	149.98	81.62	J74	0.11	149.48	80.91	J74	0.11	149.47	80.89
J75	0.10	149.98	81.26	J75	0.10	149.48	80.55	J75	0.10	149.47	80.54
J76	0.10	149.98	81.44	J76	0.10	149.48	80.72	J76	0.10	149.47	80.71
J77	0.10	149.99	81.15	J77	0.10	149.49	80.44	J77	0.10	149.47	80.42
J78	0.07	149.99	81.31	J78	0.07	149.49	80.60	J78	0.07	149.47	80.58
J79	0.07	149.99	81.40	J79	0.07	149.49	80.68	J79	0.07	149.47	80.67
J80	0.15	149.98	80.97	J80	0.15	149.48	80.25	J80	0.15	149.47	80.24
J81	0.15	149.98	80.78	J81	0.15	149.48	80.07	J81	0.15	149.47	80.05
J82	0.15	149.98	80.82	J82	0.15	149.48	80.11	J82	0.15	149.47	80.10
J83	0.15	149.98	81.04	J83	0.15	149.48	80.33	J83	0.15	149.47	80.31
J84	0.15	149.98	80.91	J84	0.15	149.48	80.20	J84	0.15	149.47	80.18
J85	0.15	149.98	81.01	J85	0.15	149.48	80.30	J85	0.15	149.47	80.28
J86	0.15	149.98	81.22	J86	0.15	149.48	80.51	J86	0.15	149.47	80.49
J87	0.15	149.98	81.18	J87	0.15	149.48	80.47	J87	0.15	149.47	80.45
J88	0.15	149.99	81.04	J88	0.15	149.49	80.33	J88	0.15	149.47	80.31
J89	0.15	149.99	81.04	J89	0.15	149.49	80.33	J89	0.15	149.47	80.31
J90	0.15	149.98	80.87	J90	0.15	149.48	80.16	J90	0.15	149.47	80.14
J91	0.15	149.98	81.17	J91	0.15	149.48	80.45	J91	0.15	149.47	80.44
J92	0.15	149.98	80.98	J92	0.15	149.48	80.27	J92	0.15	149.47	80.25
J93	0.15	149.98	80.87	J93	0.15	149.48	80.15	J93	0.15	149.47	80.14
J94	0.08	149.98	81.49	J94	0.08	149.48	80.78	J94	0.08	149.47	80.76
J95	0.08	149.98	81.72	J95	0.08	149.48	81.01	J95	0.08	149.47	80.99
J96	0.08	149.98	81.59	J96	0.08	149.48	80.88	J96	0.08	149.47	80.86
J97	0.08	149.98	81.35	J97	0.08	149.48	80.64	J97	0.08	149.47	80.62
J98	0.00	149.98	81.52	J98	0.00	149.48	80.81	J98	0.00	149.47	80.79

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Model Results - PKHR

Option A - 2 Connections - Phase 2 (2A, 2B, 2C)				Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C)				Option B - 3 Connections - Phase 2 (2A, 2B, 2C)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**	**Junction ID**	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**	**Junction ID**	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.58*	*144.12*	*73.34*	***Maximum***	*0.58*	*144.09*	*73.31*	***Maximum***	*0.58*	*144.01*	*73.15*
Minimum	*0.00*	*144.09*	*71.96*	***Minimum***	*0.00*	*144.06*	*71.90*	***Minimum***	*0.00*	*143.93*	*71.81*
J01	0.39	144.12	71.96	J01	0.39	144.08	71.90	J01	0.39	144.01	71.81
J02	0.00	144.11	72.56	J02	0.00	144.08	72.51	J02	0.00	143.99	72.38
J05	0.39	144.10	73.05	J05	0.39	144.08	73.01	J05	0.39	143.97	72.85
J06	0.39	144.10	73.18	J06	0.39	144.08	73.15	J06	0.39	143.96	72.99
J07	0.58	144.10	73.34	J07	0.58	144.08	73.31	J07	0.58	143.96	73.15
J08	0.58	144.10	73.21	J08	0.58	144.08	73.18	J08	0.58	143.97	73.02
J09	0.58	144.10	72.70	J09	0.58	144.08	72.67	J09	0.58	143.97	72.51
J10	0.58	144.10	72.95	J10	0.58	144.08	72.93	J10	0.58	143.97	72.77
J11	0.58	144.10	72.84	J11	0.58	144.08	72.82	J11	0.58	143.97	72.66
J12	0.58	144.10	72.70	J12	0.58	144.09	72.68	J12	0.58	143.98	72.52
J15	0.39	144.10	72.90	J15	0.39	144.07	72.86	J15	0.39	143.96	72.70
J158	0.00	144.09	73.33	J158	0.00	144.06	73.30	J158	0.00	143.93	73.11
J16	0.39	144.10	73.05	J16	0.39	144.07	73.01	J16	0.39	143.95	72.85
J17	0.39	144.09	72.88	J17	0.39	144.07	72.84	J17	0.39	143.95	72.67
J178	0.44	144.09	72.95	J178	0.44	144.06	72.91	J178	0.44	143.93	72.72
J18	0.39	144.09	72.66	J18	0.39	144.07	72.62	J18	0.39	143.94	72.45
J180	0.44	144.09	73.16	J180	0.44	144.06	73.13	J180	0.44	143.93	72.94
J182	0.44	144.09	73.28	J182	0.44	144.06	73.24	J182	0.44	143.93	73.05
J184	0.44	144.09	73.33	J184	0.44	144.06	73.30	J184	0.44	143.93	73.11
J186	0.44	144.09	72.85	J186	0.44	144.06	72.81	J186	0.44	143.93	72.62
J19	0.56	144.09	72.45	J19	0.56	144.06	72.41	J19	0.56	143.94	72.23
J20	0.56	144.09	72.91	J20	0.56	144.06	72.88	J20	0.56	143.93	72.69
J21	0.56	144.09	72.75	J21	0.56	144.06	72.72	J21	0.56	143.93	72.53
J22	0.56	144.09	72.81	J22	0.56	144.06	72.77	J22	0.56	143.93	72.59
J23	0.56	144.09	72.94	J23	0.56	144.06	72.90	J23	0.56	143.93	72.72
J24	0.56	144.09	73.07	J24	0.56	144.06	73.03	J24	0.56	143.93	72.84
J25	0.56	144.09	72.95	J25	0.56	144.06	72.92	J25	0.56	143.93	72.73
J26	0.56	144.09	73.05	J26	0.56	144.06	73.01	J26	0.56	143.93	72.83
J27	0.56	144.09	73.18	J27	0.56	144.06	73.14	J27	0.56	143.93	72.96
J28	0.56	144.09	73.11	J28	0.56	144.06	73.07	J28	0.56	143.94	72.89
J29	0.56	144.09	73.11	J29	0.56	144.06	73.07	J29	0.56	143.94	72.89
J30	0.39	144.09	73.04	J30	0.39	144.06	73.00	J30	0.39	143.94	72.83
J31	0.39	144.09	73.17	J31	0.39	144.06	73.13	J31	0.39	143.94	72.96
J32	0.39	144.09	73.07	J32	0.39	144.07	73.03	J32	0.39	143.94	72.86
J33	0.39	144.09	73.30	J33	0.39	144.07	73.26	J33	0.39	143.95	73.09
J34	0.39	144.09	73.17	J34	0.39	144.07	73.14	J34	0.39	143.95	72.97
J35	0.39	144.10	73.13	J35	0.39	144.07	73.10	J35	0.39	143.95	72.93
J36	0.39	144.10	73.27	J36	0.39	144.07	73.23	J36	0.39	143.96	73.07
J37	0.44	144.09	72.72	J37	0.44	144.06	72.69	J37	0.44	143.93	72.50
J38	0.44	144.09	72.85	J38	0.44	144.06	72.81	J38	0.44	143.93	72.62
J39	0.44	144.09	72.85	J39	0.44	144.06	72.81	J39	0.44	143.93	72.62
J40	0.58	144.10	72.73	J40	0.58	144.09	72.71	J40	0.58	143.97	72.55
J46	0.58	144.10	72.77	J46	0.58	144.08	72.75	J46	0.58	143.97	72.59
J48	0.58	144.10	72.81	J48	0.58	144.08	72.79	J48	0.58	143.97	72.63
J75	0.56	144.09	72.88	J75	0.56	144.06	72.84	J75	0.56	143.93	72.66
J76	0.56	144.09	73.05	J76	0.56	144.06	73.02	J76	0.56	143.93	72.83
J77	0.56	144.09	72.77	J77	0.56	144.06	72.73	J77	0.56	143.94	72.55
J78	0.39	144.09	72.93	J78	0.39	144.06	72.89	J78	0.39	143.94	72.71
J79	0.39	144.09	73.01	J79	0.39	144.07	72.98	J79	0.39	143.94	72.81
J94	0.44	144.09	73.11	J94	0.44	144.06	73.07	J94	0.44	143.93	72.88
J95	0.44	144.09	73.33	J95	0.44	144.06	73.30	J95	0.44	143.93	73.11
J96	0.44	144.09	73.21	J96	0.44	144.06	73.17	J96	0.44	143.93	72.98
J97	0.44	144.09	72.96	J97	0.44	144.06	72.93	J97	0.44	143.93	72.74
J98	0.00	144.09	73.14	J98	0.00	144.06	73.10	J98	0.00	143.93	72.91

Option A - 2 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*144.04*	*73.19*
Minimum	*0.00*	*143.94*	*71.84*
J01	0.39	144.04	71.84
J02	0.00	144.01	72.42
J05	0.39	144.00	72.90
J06	0.39	144.00	73.04
J07	0.58	144.00	73.19
J08	0.58	144.00	73.06
J09	0.58	144.00	72.55
J10	0.58	144.00	72.81
J100	0.83	143.94	72.20
J101	0.83	143.94	72.35
J102	0.83	143.94	72.24
J103	0.83	143.94	72.08
J11	0.58	144.00	72.70
J12	0.58	144.00	72.55
J15	0.39	143.99	72.74
J153	0.83	143.95	72.17
J158	0.00	143.95	73.13
J16	0.39	143.98	72.88
J17	0.39	143.97	72.70
J174	0.83	143.94	72.42
J176	0.83	143.95	72.54
J178	0.44	143.95	72.75
J18	0.39	143.96	72.47
J180	0.44	143.95	72.96
J182	0.44	143.95	73.08
J184	0.44	143.95	73.13
J186	0.44	143.95	72.65
J19	0.56	143.95	72.25
J20	0.56	143.95	72.72
J21	0.56	143.95	72.56
J22	0.56	143.95	72.61
J23	0.56	143.95	72.74
J24	0.56	143.95	72.87
J25	0.56	143.95	72.76
J26	0.56	143.95	72.86
J27	0.56	143.95	72.99
J28	0.56	143.95	72.92
J29	0.56	143.96	72.92
J30	0.39	143.96	72.86
J31	0.39	143.96	72.99
J32	0.39	143.97	72.89
J33	0.39	143.97	73.13
J34	0.39	143.97	73.00
J35	0.39	143.98	72.97
J36	0.39	143.99	73.11
J37	0.44	143.95	72.53
J38	0.44	143.95	72.65
J39	0.44	143.95	72.65
J40	0.58	144.00	72.58
J46	0.58	144.00	72.63
J48	0.58	144.00	72.67
J75	0.56	143.95	72.69
J76	0.56	143.95	72.86
J77	0.56	143.95	72.58
J78	0.39	143.96	72.74
J79	0.39	143.97	72.84
J80	0.83	143.94	72.38
J81	0.83	143.95	72.20
J82	0.83	143.95	72.24
J83	0.83	143.95	72.45
J84	0.80	143.95	72.33
J85	0.80	143.95	72.42
J86	0.80	143.95	72.64
J87	0.80	143.95	72.60
J88	0.80	143.95	72.45
J89	0.80	143.95	72.46
J90	0.83	143.95	72.29
J91	0.83	143.95	72.58
J92	0.83	143.95	72.40
J93	0.83	143.94	72.28
J94	0.44	143.95	72.91
J95	0.44	143.95	73.13
J96	0.44	143.95	73.01
J97	0.44	143.95	72.76
J98	0.00	143.95	72.93

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*144.06*	*73.25*
Minimum	*0.00*	*143.98*	*71.85*
J01	0.39	144.04	71.85
J02	0.00	144.04	72.45
J05	0.39	144.03	72.94
J06	0.39	144.03	73.09
J07	0.58	144.04	73.25
J08	0.58	144.04	73.13
J09	0.58	144.04	72.62
J10	0.58	144.05	72.88
J100	0.83	143.98	72.24
J101	0.83	143.98	72.40
J102	0.83	143.98	72.29
J103	0.83	143.98	72.13
J11	0.58	144.05	72.77
J12	0.58	144.06	72.65
J15	0.39	144.02	72.78
J153	0.83	143.98	72.22
J158	0.00	143.98	73.18
J16	0.39	144.01	72.93
J17	0.39	144.00	72.74
J174	0.83	143.98	72.47
J176	0.83	143.98	72.59
J178	0.44	143.98	72.80
J18	0.39	143.99	72.52
J180	0.44	143.98	73.01
J182	0.44	143.98	73.13
J184	0.44	143.98	73.18
J186	0.44	143.98	72.70
J19	0.56	143.99	72.30
J20	0.56	143.99	72.77
J21	0.56	143.98	72.61
J22	0.56	143.98	72.66
J23	0.56	143.98	72.79
J24	0.56	143.98	72.92
J25	0.56	143.98	72.81
J26	0.56	143.99	72.91
J27	0.56	143.99	73.04
J28	0.56	143.99	72.97
J29	0.56	143.99	72.97
J30	0.39	143.99	72.90
J31	0.39	144.00	73.04
J32	0.39	144.00	72.94
J33	0.39	144.00	73.17
J34	0.39	144.01	73.05
J35	0.39	144.02	73.02
J36	0.39	144.02	73.16
J37	0.44	143.98	72.57
J38	0.44	143.98	72.70
J39	0.44	143.98	72.70
J40	0.58	144.06	72.68
J46	0.58	144.06	72.71
J48	0.58	144.05	72.75
J75	0.56	143.98	72.73
J76	0.56	143.99	72.91
J77	0.56	143.99	72.63
J78	0.39	143.99	72.79
J79	0.39	144.00	72.89
J80	0.83	143.98	72.43
J81	0.83	143.98	72.24
J82	0.83	143.98	72.29
J83	0.83	143.98	72.50
J84	0.80	143.98	72.38
J85	0.80	143.98	72.47
J86	0.80	143.98	72.69
J87	0.80	143.98	72.64
J88	0.80	143.98	72.50
J89	0.80	143.99	72.51
J90	0.83	143.98	72.33
J91	0.83	143.98	72.63
J92	0.83	143.98	72.44
J93	0.83	143.98	72.33
J94	0.44	143.98	72.96
J95	0.44	143.98	73.18
J96	0.44	143.98	73.05
J97	0.44	143.98	72.81
J98	0.00	143.98	72.98

Option B - 3 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*143.88*	*72.89*
Minimum	*0.00*	*143.64*	*71.58*
J01	0.39	143.85	71.58
J02	0.00	143.81	72.13
J05	0.39	143.77	72.58
J06	0.39	143.77	72.71
J07	0.58	143.78	72.89
J08	0.58	143.80	72.78
J09	0.58	143.81	72.28
J10	0.58	143.82	72.56
J100	0.83	143.65	71.77
J101	0.83	143.65	71.93
J102	0.83	143.64	71.81
J103	0.83	143.64	71.65
J11	0.58	143.84	72.47
J12	0.58	143.88	72.38
J15	0.39	143.74	72.39
J153	0.83	143.65	71.75
J158	0.00	143.64	72.71
J16	0.39	143.72	72.51
J17	0.39	143.69	72.30
J174	0.83	143.64	72.00
J176	0.83	143.64	72.11
J178	0.44	143.64	72.32
J18	0.39	143.67	72.05
J180	0.44	143.64	72.54
J182	0.44	143.64	72.65
J184	0.44	143.64	72.71
J186	0.44	143.64	72.22
J19	0.56	143.66	71.83
J20	0.56	143.66	72.30
J21	0.56	143.66	72.14
J22	0.56	143.65	72.20
J23	0.56	143.66	72.33
J24	0.56	143.66	72.46
J25	0.56	143.66	72.35
J26	0.56	143.66	72.45
J27	0.56	143.67	72.58
J28	0.56	143.67	72.52
J29	0.56	143.68	72.52
J30	0.39	143.68	72.46
J31	0.39	143.69	72.60
J32	0.39	143.70	72.51
J33	0.39	143.71	72.75
J34	0.39	143.72	72.64
J35	0.39	143.73	72.62
J36	0.39	143.75	72.77
J37	0.44	143.65	72.10
J38	0.44	143.65	72.23
J39	0.44	143.65	72.22
J40	0.58	143.87	72.40
J46	0.58	143.86	72.43
J48	0.58	143.84	72.45
J75	0.56	143.66	72.27
J76	0.56	143.66	72.45
J77	0.56	143.67	72.17
J78	0.39	143.68	72.34
J79	0.39	143.70	72.45
J80	0.83	143.65	71.96
J81	0.83	143.65	71.77
J82	0.83	143.65	71.82
J83	0.83	143.65	72.03
J84	0.80	143.65	71.91
J85	0.80	143.65	72.01
J86	0.80	143.65	72.22
J87	0.80	143.65	72.18
J88	0.80	143.65	72.04
J89	0.80	143.66	72.04
J90	0.83	143.65	71.87
J91	0.83	143.65	72.16
J92	0.83	143.65	71.97
J93	0.83	143.65	71.86
J94	0.44	143.65	72.48
J95	0.44	143.64	72.71
J96	0.44	143.64	72.58
J97	0.44	143.64	72.34
J98	0.00	143.64	72.51

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Model Results - PKHR

Option A - 2 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*143.99*	*73.12*
Minimum	*0.00*	*143.78*	*71.69*
J01	0.39	143.99	71.77
J02	0.00	143.96	72.35
J05	0.39	143.94	72.81
J06	0.39	143.94	72.96
J07	0.58	143.94	73.12
J08	0.58	143.95	72.99
J09	0.58	143.95	72.49
J10	0.58	143.95	72.75
J100	0.83	143.80	71.99
J101	0.83	143.80	72.14
J102	0.83	143.79	72.02
J103	0.83	143.79	71.87
J109	0.59	143.79	72.14
J11	0.58	143.96	72.64
J110	0.59	143.79	72.31
J111	0.59	143.79	72.38
J112	0.59	143.78	72.27
J113	0.59	143.78	72.19
J114	0.59	143.78	72.04
J115	0.59	143.78	72.02
J116	0.59	143.78	72.06
J117	0.59	143.78	72.19
J118	0.59	143.78	72.27
J119	0.59	143.78	72.40
J12	0.58	143.97	72.51
J120	0.59	143.78	72.40
J121	0.59	143.78	72.20
J122	0.59	143.78	72.04
J123	0.59	143.78	72.19
J124	0.59	143.78	72.33
J125	0.59	143.78	72.51
J128	0.00	143.78	72.88
J129	0.59	143.78	72.85
J130	0.59	143.78	72.64
J131	0.59	143.78	72.75
J132	0.59	143.78	72.59
J133	0.59	143.78	72.67
J134	0.59	143.78	72.80
J135	0.59	143.78	72.90
J136	0.59	143.78	72.77
J137	0.59	143.78	72.68
J14	0.59	143.78	72.81
J15	0.39	143.91	72.63
J153	0.83	143.82	71.99
J154	0.59	143.78	72.53
J155	0.59	143.78	72.65
J156	0.00	143.78	72.40
J158	0.00	143.79	72.92
J16	0.39	143.89	72.76
J162	0.00	143.79	72.03
J164	0.00	143.79	72.10
J166	0.00	143.79	71.92
J168	0.00	143.79	72.20
J17	0.39	143.87	72.55
J170	0.00	143.79	71.69
J172	0.00	143.79	72.03
J174	0.83	143.79	72.20
J176	0.83	143.79	72.32
J178	0.44	143.79	72.53
J18	0.39	143.84	72.31
J180	0.44	143.79	72.75
J182	0.44	143.79	72.86
J184	0.44	143.79	72.92
J186	0.44	143.79	72.43
J188	0.00	143.79	72.07
J19	0.56	143.83	72.08
J20	0.56	143.83	72.54
J21	0.56	143.82	72.37
J22	0.56	143.81	72.42
J23	0.56	143.82	72.56
J24	0.56	143.82	72.69
J25	0.56	143.82	72.58
J26	0.56	143.83	72.68
J27	0.56	143.83	72.82
J28	0.56	143.84	72.75
J29	0.56	143.84	72.76
J30	0.39	143.85	72.70
J31	0.39	143.86	72.84
J32	0.39	143.87	72.75
J33	0.39	143.88	72.99
J34	0.39	143.89	72.88
J35	0.39	143.90	72.86
J36	0.39	143.92	73.01
J37	0.44	143.81	72.32
J38	0.44	143.80	72.44
J39	0.44	143.80	72.44
J40	0.58	143.97	72.54
J41	0.59	143.79	72.48
J42	0.59	143.79	72.52
J43	0.59	143.78	72.42
J44	0.59	143.78	72.58
J45	0.59	143.78	72.46
J46	0.58	143.96	72.58
J48	0.58	143.96	72.61
J75	0.56	143.82	72.51
J76	0.56	143.83	72.68
J77	0.56	143.84	72.41
J78	0.39	143.85	72.58
J79	0.39	143.87	72.70
J80	0.83	143.81	72.18
J81	0.83	143.80	71.99
J82	0.83	143.81	72.04
J83	0.83	143.82	72.27
J84	0.80	143.82	72.15
J85	0.80	143.82	72.25
J86	0.80	143.82	72.46
J87	0.80	143.82	72.42
J88	0.80	143.82	72.28
J89	0.80	143.83	72.29
J90	0.83	143.82	72.11
J91	0.83	143.82	72.40
J92	0.83	143.81	72.20
J93	0.83	143.81	72.08
J94	0.44	143.80	72.70
J95	0.44	143.79	72.92
J96	0.44	143.79	72.79
J97	0.44	143.79	72.55
J98	0.00	143.79	72.72

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*144.03*	*73.15*
Minimum	*0.00*	*143.79*	*71.71*
J01	0.39	143.98	71.76
J02	0.00	143.97	72.35
J05	0.39	143.95	72.83
J06	0.39	143.96	72.98
J07	0.58	143.97	73.15
J08	0.58	143.97	73.03
J09	0.58	143.98	72.53
J10	0.58	143.99	72.80
J100	0.83	143.81	72.01
J101	0.83	143.81	72.16
J102	0.83	143.81	72.05
J103	0.83	143.81	71.89
J109	0.59	143.80	72.16
J11	0.58	144.00	72.70
J110	0.59	143.80	72.33
J111	0.59	143.80	72.40
J112	0.59	143.80	72.30
J113	0.59	143.79	72.21
J114	0.59	143.79	72.07
J115	0.59	143.79	72.04
J116	0.59	143.79	72.08
J117	0.59	143.79	72.21
J118	0.59	143.79	72.29
J119	0.59	143.79	72.42
J12	0.58	144.03	72.60
J120	0.59	143.79	72.42
J121	0.59	143.79	72.22
J122	0.59	143.79	72.07
J123	0.59	143.79	72.21
J124	0.59	143.79	72.35
J125	0.59	143.79	72.54
J128	0.00	143.80	72.90
J129	0.59	143.80	72.87
J130	0.59	143.80	72.66
J131	0.59	143.80	72.77
J132	0.59	143.80	72.61
J133	0.59	143.80	72.69
J134	0.59	143.79	72.82
J135	0.59	143.79	72.92
J136	0.59	143.80	72.79
J137	0.59	143.79	72.70
J14	0.59	143.79	72.83
J15	0.39	143.93	72.65
J153	0.83	143.83	72.01
J154	0.59	143.80	72.56
J155	0.59	143.80	72.67
J156	0.00	143.80	72.43
J158	0.00	143.81	72.94
J16	0.39	143.90	72.78
J162	0.00	143.80	72.05
J164	0.00	143.80	72.12
J166	0.00	143.80	71.94
J168	0.00	143.80	72.22
J17	0.39	143.88	72.57
J170	0.00	143.80	71.71
J172	0.00	143.81	72.05
J174	0.83	143.81	72.23
J176	0.83	143.81	72.34
J178	0.44	143.81	72.55
J18	0.39	143.86	72.33
J180	0.44	143.81	72.77
J182	0.44	143.81	72.88
J184	0.44	143.81	72.94
J186	0.44	143.81	72.45
J188	0.00	143.80	72.09
J19	0.56	143.85	72.10
J20	0.56	143.84	72.56
J21	0.56	143.84	72.40
J22	0.56	143.83	72.44
J23	0.56	143.83	72.58
J24	0.56	143.84	72.71
J25	0.56	143.84	72.60
J26	0.56	143.84	72.70
J27	0.56	143.85	72.84
J28	0.56	143.85	72.77
J29	0.56	143.86	72.78
J30	0.39	143.87	72.72
J31	0.39	143.87	72.86
J32	0.39	143.88	72.77
J33	0.39	143.89	73.01
J34	0.39	143.90	72.90
J35	0.39	143.92	72.88
J36	0.39	143.94	73.04
J37	0.44	143.82	72.35
J38	0.44	143.81	72.46
J39	0.44	143.81	72.46
J40	0.58	144.02	72.62
J41	0.59	143.80	72.51
J42	0.59	143.80	72.55
J43	0.59	143.80	72.44
J44	0.59	143.80	72.60
J45	0.59	143.80	72.48
J46	0.58	144.02	72.65
J48	0.58	144.01	72.68
J75	0.56	143.84	72.53
J76	0.56	143.84	72.71
J77	0.56	143.85	72.43
J78	0.39	143.86	72.61
J79	0.39	143.88	72.72
J80	0.83	143.82	72.20
J81	0.83	143.82	72.01
J82	0.83	143.82	72.06
J83	0.83	143.83	72.29
J84	0.80	143.84	72.17
J85	0.80	143.84	72.27
J86	0.80	143.84	72.48
J87	0.80	143.84	72.44
J88	0.80	143.84	72.30
J89	0.80	143.84	72.31
J90	0.83	143.84	72.13
J91	0.83	143.83	72.42
J92	0.83	143.83	72.23
J93	0.83	143.82	72.11
J94	0.44	143.81	72.72
J95	0.44	143.81	72.94
J96	0.44	143.81	72.81
J97	0.44	143.81	72.57
J98	0.00	143.81	72.74

Option B - 3 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*143.84*	*72.34*
Minimum	*0.00*	*142.51*	*69.91*
J01	0.39	143.49	71.07
J02	0.00	143.36	71.49
J05	0.39	143.26	71.84
J06	0.39	143.26	71.98
J07	0.58	143.34	72.26
J08	0.58	143.41	72.24
J09	0.58	143.49	71.83
J10	0.58	143.57	72.20
J100	0.83	142.59	70.26
J101	0.83	142.59	70.42
J102	0.83	142.57	70.28
J103	0.83	142.56	70.12
J109	0.59	142.53	70.36
J11	0.58	143.64	72.19
J110	0.59	142.53	70.53
J111	0.59	142.53	70.59
J112	0.59	142.52	70.48
J113	0.59	142.51	70.39
J114	0.59	142.51	70.24
J115	0.59	142.51	70.21
J116	0.59	142.51	70.26
J117	0.59	142.51	70.39
J118	0.59	142.51	70.47
J119	0.59	142.51	70.60
J12	0.58	143.84	72.34
J120	0.59	142.51	70.60
J121	0.59	142.51	70.40
J122	0.59	142.51	70.24
J123	0.59	142.51	70.38
J124	0.59	142.51	70.53
J125	0.59	142.51	70.71
J128	0.00	142.52	71.08
J129	0.59	142.52	71.05
J130	0.59	142.52	70.84
J131	0.59	142.52	70.95
J132	0.59	142.52	70.80
J133	0.59	142.51	70.87
J134	0.59	142.51	71.00
J135	0.59	142.51	71.09
J136	0.59	142.51	70.97
J137	0.59	142.51	70.88
J14	0.59	142.51	71.00
J15	0.39	143.12	71.51
J153	0.83	142.71	70.41
J154	0.59	142.52	70.73
J155	0.59	142.51	70.84
J156	0.00	142.51	70.60
J158	0.00	142.53	71.12
J16	0.39	143.02	71.52
J162	0.00	142.54	70.25
J164	0.00	142.54	70.32
J166	0.00	142.54	70.13
J168	0.00	142.54	70.42
J17	0.39	142.90	71.18
J170	0.00	142.54	69.91
J172	0.00	142.54	70.26
J174	0.83	142.55	70.43
J176	0.83	142.54	70.54
J178	0.44	142.54	70.75
J18	0.39	142.78	70.80
J180	0.44	142.53	70.95
J182	0.44	142.53	71.06
J184	0.44	142.52	71.11
J186	0.44	142.54	70.65
J188	0.00	142.54	70.29
J19	0.56	142.76	70.55
J20	0.56	142.73	70.98
J21	0.56	142.72	70.81
J22	0.56	142.71	70.84
J23	0.56	142.73	71.01
J24	0.56	142.74	71.16
J25	0.56	142.76	71.07
J26	0.56	142.78	71.19
J27	0.56	142.80	71.34
J28	0.56	142.82	71.31
J29	0.56	142.85	71.35
J30	0.39	142.88	71.31
J31	0.39	142.91	71.49
J32	0.39	142.95	71.44
J33	0.39	142.98	71.72
J34	0.39	143.02	71.65
J35	0.39	143.10	71.71
J36	0.39	143.17	71.95
J37	0.44	142.64	70.67
J38	0.44	142.59	70.72
J39	0.44	142.56	70.69
J40	0.58	143.80	72.30
J41	0.59	142.53	70.70
J42	0.59	142.53	70.73
J43	0.59	142.52	70.63
J44	0.59	142.51	70.77
J45	0.59	142.51	70.66
J46	0.58	143.75	72.27
J48	0.58	143.68	72.22
J75	0.56	142.75	70.98
J76	0.56	142.77	71.18
J77	0.56	142.81	70.96
J78	0.39	142.86	71.17
J79	0.39	142.94	71.38
J80	0.83	142.64	70.53
J81	0.83	142.61	70.30
J82	0.83	142.65	70.39
J83	0.83	142.69	70.67
J84	0.80	142.73	70.60
J85	0.80	142.73	70.69
J86	0.80	142.73	70.91
J87	0.80	142.73	70.87
J88	0.80	142.74	70.73
J89	0.80	142.75	70.75
J90	0.83	142.72	70.54
J91	0.83	142.70	70.81
J92	0.83	142.68	70.59
J93	0.83	142.66	70.45
J94	0.44	142.57	70.95
J95	0.44	142.55	71.15
J96	0.44	142.54	71.01
J97	0.44	142.55	70.78
J98	0.00	142.53	70.93

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Model Results - PKHR

Option A - 2 Connections - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				Option A - 2 Connections with Upgrades on Danson Gardens Grv - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				Option B - 3 Connections - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)			
Junction ID	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**	**Junction ID**	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**	**Junction ID**	**Demand (L/s)**	**Head (m)**	**Pressure (psi)**
Maximum	*0.83*	*143.94*	*73.17*	***Maximum***	*0.83*	*149.49*	*81.16*	***Maximum***	*0.83*	*149.49*	*81.14*
Minimum	*0.00*	*143.69*	*71.56*	***Minimum***	*0.00*	*143.70*	*71.69*	***Minimum***	*0.00*	*142.31*	*69.83*
J01	0.39	143.94	71.70	J01	0.39	143.93	71.69	J01	0.39	143.31	70.81
J02	0.00	143.91	72.27	J02	0.00	143.91	72.27	J02	0.00	143.15	71.20
J05	0.39	143.88	72.73	J05	0.39	143.89	72.74	J05	0.39	143.03	71.52
J06	0.39	143.88	72.87	J06	0.39	143.89	72.89	J06	0.39	143.03	71.66
J07	0.58	143.88	73.03	J07	0.58	143.90	73.06	J07	0.58	143.09	71.90
J08	0.58	143.89	72.91	J08	0.58	143.91	72.95	J08	0.58	143.18	71.90
J09	0.58	143.90	72.41	J09	0.58	143.92	72.45	J09	0.58	143.25	71.49
J10	0.58	143.90	72.68	J10	0.58	143.94	72.73	J10	0.58	143.35	71.88
J100	0.83	143.71	71.86	J100	0.83	143.72	71.87	J100	0.83	142.38	69.97
J101	0.83	143.71	72.01	J101	0.83	143.72	72.03	J101	0.83	142.38	70.13
J102	0.83	143.70	71.89	J102	0.83	143.71	71.91	J102	0.83	142.36	69.99
J103	0.83	143.70	71.74	J103	0.83	143.71	71.75	J103	0.83	142.36	69.83
J109	0.59	143.70	72.01	J109	0.59	143.71	72.03	J109	0.59	142.33	70.07
J11	0.58	143.91	72.57	J11	0.58	143.95	72.63	J11	0.58	143.42	71.87
J110	0.59	143.69	72.18	J110	0.59	143.71	72.20	J110	0.59	142.33	70.24
J111	0.59	143.69	72.25	J111	0.59	143.70	72.27	J111	0.59	142.33	70.31
J112	0.59	143.69	72.14	J112	0.59	143.70	72.16	J112	0.59	142.32	70.19
J113	0.59	143.69	72.06	J113	0.59	143.70	72.07	J113	0.59	142.31	70.10
J114	0.59	143.69	71.91	J114	0.59	143.70	71.93	J114	0.59	142.31	69.96
J115	0.59	143.69	71.88	J115	0.59	143.70	71.90	J115	0.59	142.31	69.93
J116	0.59	143.69	71.93	J116	0.59	143.70	71.94	J116	0.59	142.31	69.97
J117	0.59	143.69	72.05	J117	0.59	143.70	72.07	J117	0.59	142.31	70.10
J118	0.59	143.69	72.14	J118	0.59	143.70	72.16	J118	0.59	142.31	70.19
J119	0.59	143.69	72.27	J119	0.59	143.70	72.29	J119	0.59	142.31	70.31
J12	0.58	143.93	72.46	J12	0.58	143.99	72.55	J12	0.58	143.68	72.10
J120	0.59	143.69	72.27	J120	0.59	143.70	72.28	J120	0.59	142.31	70.31
J121	0.59	143.69	72.07	J121	0.59	143.70	72.08	J121	0.59	142.31	70.11
J122	0.59	143.69	71.91	J122	0.59	143.70	71.93	J122	0.59	142.31	69.96
J123	0.59	143.69	72.05	J123	0.59	143.70	72.07	J123	0.59	142.31	70.10
J124	0.59	143.69	72.20	J124	0.59	143.70	72.21	J124	0.59	142.31	70.24
J125	0.59	143.69	72.38	J125	0.59	143.70	72.40	J125	0.59	142.31	70.43
J128	0.00	143.69	72.74	J128	0.00	143.70	72.76	J128	0.00	142.32	70.80
J129	0.59	143.69	72.72	J129	0.59	143.70	72.73	J129	0.59	142.32	70.77
J130	0.59	143.69	72.50	J130	0.59	143.70	72.52	J130	0.59	142.32	70.56
J131	0.59	143.69	72.62	J131	0.59	143.70	72.63	J131	0.59	142.32	70.67
J132	0.59	143.69	72.46	J132	0.59	143.70	72.48	J132	0.59	142.32	70.51
J133	0.59	143.69	72.54	J133	0.59	143.70	72.56	J133	0.59	142.31	70.58
J134	0.59	143.69	72.67	J134	0.59	143.70	72.68	J134	0.59	142.31	70.71
J135	0.59	143.69	72.77	J135	0.59	143.70	72.78	J135	0.59	142.31	70.81
J136	0.59	143.69	72.64	J136	0.59	143.70	72.66	J136	0.59	142.31	70.68
J137	0.59	143.69	72.55	J137	0.59	143.70	72.57	J137	0.59	142.31	70.59
J14	0.59	143.69	72.67	J14	0.59	143.70	72.69	J14	0.59	142.31	70.72
J15	0.39	143.84	72.53	J15	0.39	143.85	72.55	J15	0.39	142.89	71.18
J152	0.58	143.88	73.07	J152	0.58	143.89	73.09	J152	0.58	143.07	71.92
J153	0.83	143.73	71.86	J153	0.83	143.74	71.88	J153	0.83	142.49	70.09
J154	0.59	143.69	72.40	J154	0.59	143.70	72.42	J154	0.59	142.31	70.45
J155	0.59	143.69	72.52	J155	0.59	143.70	72.53	J155	0.59	142.31	70.56
J156	0.00	143.69	72.27	J156	0.00	143.70	72.29	J156	0.00	142.31	70.31
J158	0.00	143.70	72.79	J158	0.00	143.71	72.80	J158	0.00	142.34	70.85
J16	0.39	143.81	72.65	J16	0.39	143.83	72.66	J16	0.39	142.79	71.19
J162	0.00	143.70	71.90	J162	0.00	143.71	71.91	J162	0.00	142.34	69.97
J164	0.00	143.70	71.97	J164	0.00	143.71	71.98	J164	0.00	142.33	70.03
J166	0.00	143.70	71.78	J166	0.00	143.71	71.80	J166	0.00	142.33	69.85
J168	0.00	143.70	72.07	J168	0.00	143.71	72.08	J168	0.00	142.33	70.13
J17	0.39	143.79	72.44	J17	0.07	149.49	80.54	J17	0.07	149.47	80.53
J170	0.00	143.70	71.56	J170	0.00	149.48	79.78	J170	0.00	149.47	79.77
J172	0.00	143.70	71.90	J172	0.00	149.48	80.13	J172	0.00	149.47	80.11
J174	0.83	143.70	72.07	J174	0.15	149.48	80.30	J174	0.15	149.47	80.28
J176	0.83	143.70	72.19	J176	0.15	149.48	80.41	J176	0.15	149.47	80.39
J178	0.44	143.70	72.40	J178	0.08	149.48	80.62	J178	0.08	149.47	80.61
J18	0.39	143.76	72.19	J18	0.07	149.49	80.33	J18	0.07	149.47	80.31
J180	0.44	143.70	72.61	J180	0.08	149.48	80.84	J180	0.08	149.47	80.82
J182	0.44	143.70	72.73	J182	0.08	149.48	80.95	J182	0.08	149.47	80.94
J184	0.44	143.70	72.79	J184	0.08	149.48	81.01	J184	0.08	149.47	80.99
J186	0.44	143.70	72.30	J186	0.08	149.48	80.52	J186	0.08	149.47	80.51
J188	0.00	143.70	71.93	J188	0.00	149.48	80.16	J188	0.00	149.47	80.15
J19	0.56	143.75	71.96	J19	0.10	149.49	80.11	J19	0.10	149.47	80.10
J20	0.56	143.74	72.41	J20	0.10	149.48	80.58	J20	0.10	149.47	80.57
J21	0.56	143.73	72.24	J21	0.10	149.48	80.43	J21	0.10	149.47	80.41
J22	0.56	143.72	72.29	J22	0.10	149.48	80.48	J22	0.10	149.47	80.47
J23	0.56	143.72	72.42	J23	0.10	149.48	80.61	J23	0.10	149.47	80.59
J24	0.56	143.72	72.55	J24	0.10	149.48	80.74	J24	0.10	149.47	80.72
J25	0.56	143.73	72.44	J25	0.10	149.48	80.62	J25	0.10	149.47	80.61
J26	0.56	143.73	72.54	J26	0.10	149.48	80.72	J26	0.10	149.47	80.71
J27	0.56	143.73	72.68	J27	0.10	149.48	80.85	J27	0.10	149.47	80.84
J28	0.56	143.74	72.61	J28	0.10	149.49	80.78	J28	0.10	149.47	80.76
J29	0.56	143.75	72.62	J29	0.10	149.49	80.78	J29	0.10	149.47	80.77
J30	0.39	143.76	72.57	J30	0.07	149.49	80.71	J30	0.07	149.47	80.69
J31	0.39	143.77	72.71	J31	0.07	149.49	80.84	J31	0.07	149.47	80.82
J32	0.39	143.78	72.63	J32	0.07	149.49	80.74	J32	0.07	149.47	80.72
J33	0.39	143.79	72.88	J33	0.07	149.49	80.97	J33	0.07	149.48	80.95
J34	0.39	143.81	72.76	J34	0.07	149.49	80.84	J34	0.07	149.48	80.83
J35	0.39	143.82	72.75	J35	0.07	149.49	80.80	J35	0.07	149.48	80.78
J36	0.39	143.86	72.92	J36	0.07	149.49	80.93	J36	0.07	149.48	80.91
J37	0.44	143.71	72.19	J37	0.08	149.48	80.40	J37	0.08	149.47	80.38
J38	0.44	143.71	72.31	J38	0.08	149.48	80.52	J38	0.08	149.47	80.51
J39	0.44	143.70	72.31	J39	0.08	149.48	80.52	J39	0.08	149.47	80.51
J40	0.58	143.93	72.49	J40	0.11	149.49	80.40	J40	0.11	149.49	80.39
J41	0.59	143.70	72.35	J41	0.11	149.48	80.58	J41	0.11	149.47	80.56
J42	0.59	143.69	72.39	J42	0.11	149.48	80.62	J42	0.11	149.47	80.61
J43	0.59	143.69	72.29	J43	0.11	149.48	80.52	J43	0.11	149.47	80.51
J44	0.59	143.69	72.44	J44	0.11	149.48	80.68	J44	0.11	149.47	80.66
J45	0.59	143.69	72.33	J45	0.11	149.48	80.57	J45	0.11	149.47	80.55
J46	0.58	143.92	72.52	J46	0.11	149.49	80.44	J46	0.11	149.49	80.43
J48	0.58	143.92	72.55	J48	0.11	149.49	80.48	J48	0.11	149.48	80.47
J50	0.58	143.91	72.46	J50	0.11	149.49	80.40	J50	0.11	149.48	80.38
J51	0.58	143.91	72.59	J51	0.11	149.49	80.54	J51	0.11	149.48	80.52
J52	0.58	143.89	72.60	J52	0.11	149.49	80.56	J52	0.11	149.48	80.55
J53	0.58	143.89	72.70	J53	0.11	149.49	80.66	J53	0.11	149.48	80.65
J55	0.58	143.87	73.17	J55	0.11	149.49	81.16	J55	0.11	149.48	81.14
J56	0.58	143.80	72.93	J56	0.11	149.49	81.01	J56	0.11	149.48	81.00
J57	0.58	143.79	73.06	J57	0.11	149.49	81.15	J57	0.11	149.48	81.14
J58	0.58	143.79	72.92	J58	0.11	149.49	81.03	J58	0.11	149.48	81.01
J59	0.58	143.76	72.79	J59	0.11	149.49	80.93	J59	0.11	149.47	80.91
J60	0.58	143.76	73.01	J60	0.11	149.49	81.15	J60	0.11	149.47	81.14
J61	0.58	143.76	72.88	J61	0.11	149.49	81.02	J61	0.11	149.47	81.01
J62	0.58	143.76	72.78	J62	0.11	149.49	80.93	J62	0.11	149.47	80.91
J63	0.58	143.74	72.82	J63	0.11	149.49	80.98	J63	0.11	149.47	80.96
J64	0.58	143.74	72.93	J64	0.11	149.49	81.09	J64	0.11	149.47	81.08
J65	0.58	143.74	72.94	J65	0.11	149.49	81.11	J65	0.11	149.47	81.09
J66	0.58	143.74	72.77	J66	0.11	149.49	80.94	J66	0.11	149.47	80.92
J67	0.58	143.73	72.83	J67	0.11	149.48	81.01	J67	0.11	149.47	80.99
J68	0.58	143.73	72.97	J68	0.11	149.48	81.15	J68	0.11	149.47	81.13
J69	0.58	143.73	72.83	J69	0.11	149.48	81.01	J69	0.11	149.47	80.99
J70	0.58	143.73	72.66	J70	0.11	149.48	80.84	J70	0.11	149.47	80.82
J71	0.58	143.72	72.61	J71	0.11	149.48	80.80	J71	0.11	149.47	80.78
J72	0.58	143.72	72.70	J72	0.11	149.48	80.89	J72	0.11	149.47	80.88
J73	0.58	143.72	72.82	J73	0.11	149.48	81.01	J73	0.11	149.47	80.99
J74	0.58	143.72	72.72	J74	0.11	149.48	80.91	J74	0.11	149.47	80.89
J75	0.56	143.73	72.37	J75	0.10	149.48	80.55	J75	0.10	149.47	80.54
J76	0.56	143.73	72.55	J76	0.10	149.48	80.72	J76	0.10	149.47	80.71
J77	0.56	143.75	72.28	J77	0.10	149.49	80.44	J77	0.10	149.47	80.42
J78	0.39	143.76	72.46	J78	0.07	149.49	80.60	J78	0.07	149.47	80.58
J79	0.39	143.78	72.57	J79	0.07	149.49	80.68	J79	0.07	149.47	80.67
J80	0.83	143.71	72.05	J80	0.15	149.48	80.25	J80	0.15	149.47	80.24
J81	0.83	143.71	71.86	J81	0.15	149.48	80.07	J81	0.15	149.47	80.05
J82	0.83	143.72	71.91	J82	0.15	149.48	80.11	J82	0.15	149.47	80.10
J83	0.83	143.73	72.14	J83	0.15	149.48	80.33	J83	0.15	149.47	80.31
J84	0.80	143.74	72.03	J84	0.15	149.48	80.20	J84	0.15	149.47	80.18
J85	0.80	143.73	72.12	J85	0.15	149.48	80.30	J85	0.15	149.47	80.28
J86	0.80	143.73	72.34	J86	0.15	149.48	80.51	J86	0.15	149.47	80.49
J87	0.80	143.73	72.29	J87	0.15	149.48	80.47	J87	0.15	149.47	80.45
J88	0.80	143.74	72.15	J88	0.15	149.49	80.33	J88	0.15	149.47	80.31
J89	0.80	143.74	72.16	J89	0.15	149.49	80.33	J89	0.15	149.47	80.31
J90	0.83	143.73	71.98	J90	0.15	149.48	80.16	J90	0.15	149.47	80.14
J91	0.83	143.73	72.27	J91	0.15	149.48	80.45	J91	0.15	149.47	80.44
J92	0.83	143.72	72.07	J92	0.15	149.48	80.27	J92	0.15	149.47	80.25
J93	0.83	143.71	71.95	J93	0.15	149.48	80.15	J93	0.15	149.47	80.14
J94	0.44	143.70	72.56	J94	0.08	149.48	80.78	J94	0.08	149.47	80.76
J95	0.44	143.70	72.79	J95	0.08	149.48	81.01	J95	0.08	149.47	80.99
J96	0.44	143.70	72.66	J96	0.08	149.48	80.88	J96	0.08	149.47	80.86
J97	0.44	143.70	72.42	J97	0.08	149.48	80.64	J97	0.08	149.47	80.62
J98	0.00	143.70	72.59	J98	0.00	149.48	80.81	J98	0.00	149.47	80.79

Option A - 2 Connections - Phase 2 (2A, 2B, 2C)				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	59.93	64,000
J02	0.00	13,000	60.51	64,000
J05	0.18	13,000	61.00	64,000
J06	0.18	13,000	61.17	64,000
J07	0.27	13,000	61.40	64,000
J08	0.27	13,000	61.35	65,000
J09	0.27	13,000	60.94	65,000
J10	0.27	13,000	61.31	67,000
J11	0.27	13,000	61.33	68,000
J12	0.27	13,000	61.61	75,000
J15	0.18	13,000	60.14	55,000
J158	0.00	13,000	53.27	29,000
J16	0.18	13,000	59.88	52,000
J17	0.18	13,000	59.23	48,000
J178	0.20	13,000	54.17	31,000
J18	0.18	13,000	58.59	46,000
J180	0.20	13,000	53.53	30,000
J182	0.20	13,000	53.25	29,000
J184	0.20	13,000	53.24	29,000
J186	0.20	13,000	54.90	33,000
J19	0.25	13,000	57.93	43,000
J20	0.25	13,000	58.04	42,000
J21	0.25	13,000	57.50	40,000
J22	0.25	13,000	57.21	39,000
J23	0.25	13,000	56.74	37,000
J24	0.25	13,000	56.19	35,000
J25	0.25	13,000	55.70	34,000
J26	0.25	13,000	55.73	34,000
J27	0.25	13,000	56.06	35,000
J28	0.25	13,000	55.86	34,000
J29	0.25	13,000	55.98	34,000
J30	0.18	13,000	56.30	35,000
J31	0.18	13,000	56.47	36,000
J32	0.18	13,000	56.69	36,000
J33	0.18	13,000	57.55	39,000
J34	0.18	13,000	58.47	43,000
J35	0.18	13,000	58.79	44,000
J36	0.18	13,000	59.70	49,000
J37	0.20	13,000	56.39	37,000
J38	0.20	13,000	55.90	35,000
J39	0.20	13,000	55.42	34,000
J40	0.27	13,000	61.54	73,000
J46	0.27	13,000	61.47	71,000
J48	0.27	13,000	61.38	69,000
J75	0.25	13,000	47.92	23,000
J76	0.25	13,000	52.46	28,000
J77	0.25	13,000	47.31	23,000
J78	0.18	13,000	52.96	29,000
J79	0.18	13,000	49.39	25,000
J94	0.20	13,000	53.82	30,000
J95	0.20	13,000	53.35	29,000
J96	0.20	13,000	53.38	29,000
J97	0.20	13,000	44.98	21,000
J98	0.00	13,000	53.12	29,000

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C)				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	62.43	66,000
J02	0.00	13,000	63.01	66,000
J05	0.18	13,000	63.51	66,000
J06	0.18	13,000	63.67	66,000
J07	0.27	13,000	63.90	66,000
J08	0.27	13,000	63.84	67,000
J09	0.27	13,000	63.43	67,000
J10	0.27	13,000	63.80	69,000
J11	0.27	13,000	63.82	70,000
J12	0.27	13,000	64.10	77,000
J15	0.18	13,000	62.64	57,000
J158	0.00	13,000	55.77	30,000
J16	0.18	13,000	62.38	53,000
J17	0.18	13,000	61.73	50,000
J178	0.20	13,000	56.67	32,000
J18	0.18	13,000	61.09	47,000
J180	0.20	13,000	56.03	30,000
J182	0.20	13,000	55.76	30,000
J184	0.20	13,000	55.74	30,000
J186	0.20	13,000	57.40	34,000
J19	0.25	13,000	60.43	45,000
J20	0.25	13,000	60.54	43,000
J21	0.25	13,000	60.00	41,000
J22	0.25	13,000	59.71	40,000
J23	0.25	13,000	59.24	38,000
J24	0.25	13,000	58.69	36,000
J25	0.25	13,000	58.20	35,000
J26	0.25	13,000	58.23	35,000
J27	0.25	13,000	58.56	36,000
J28	0.25	13,000	58.36	35,000
J29	0.25	13,000	58.48	35,000
J30	0.18	13,000	58.80	36,000
J31	0.18	13,000	58.97	37,000
J32	0.18	13,000	59.19	38,000
J33	0.18	13,000	60.05	40,000
J34	0.18	13,000	60.97	44,000
J35	0.18	13,000	61.29	46,000
J36	0.18	13,000	62.20	50,000
J37	0.20	13,000	58.89	38,000
J38	0.20	13,000	58.40	36,000
J39	0.20	13,000	57.92	35,000
J40	0.27	13,000	64.02	75,000
J46	0.27	13,000	63.96	73,000
J48	0.27	13,000	63.86	71,000
J75	0.25	13,000	50.42	24,000
J76	0.25	13,000	54.96	29,000
J77	0.25	13,000	49.81	24,000
J78	0.18	13,000	55.46	30,000
J79	0.18	13,000	51.89	25,000
J94	0.20	13,000	56.32	31,000
J95	0.20	13,000	55.85	30,000
J96	0.20	13,000	55.88	30,000
J97	0.20	13,000	47.48	22,000
J98	0.00	13,000	55.62	30,000

Option B - 3 Connections - Phase 2 (2A, 2B, 2C)				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	51.23	28,000
J02	0.00	13,000	51.51	28,000
J05	0.18	13,000	51.87	28,000
J06	0.18	13,000	52.01	28,000
J07	0.27	13,000	52.34	28,000
J08	0.27	13,000	52.46	28,000
J09	0.27	13,000	52.27	28,000
J10	0.27	13,000	52.97	29,000
J11	0.27	13,000	53.36	30,000
J12	0.27	13,000	54.93	32,000
J15	0.18	13,000	49.27	25,000
J158	0.00	13,000	33.14	16,000
J16	0.18	13,000	48.40	24,000
J17	0.18	13,000	46.84	23,000
J178	0.20	13,000	33.01	16,000
J18	0.18	13,000	45.74	22,000
J180	0.20	13,000	32.83	16,000
J182	0.20	13,000	32.86	16,000
J184	0.20	13,000	33.00	16,000
J186	0.20	13,000	33.32	16,000
J19	0.25	13,000	44.33	21,000
J20	0.25	13,000	44.19	21,000
J21	0.25	13,000	43.19	20,000
J22	0.25	13,000	42.93	20,000
J23	0.25	13,000	43.28	20,000
J24	0.25	13,000	43.20	20,000
J25	0.25	13,000	43.14	20,000
J26	0.25	13,000	43.53	21,000
J27	0.25	13,000	44.21	21,000
J28	0.25	13,000	44.36	21,000
J29	0.25	13,000	44.80	21,000
J30	0.18	13,000	45.41	22,000
J31	0.18	13,000	45.83	22,000
J32	0.18	13,000	46.25	22,000
J33	0.18	13,000	47.30	23,000
J34	0.18	13,000	48.53	24,000
J35	0.18	13,000	49.22	25,000
J36	0.18	13,000	50.43	26,000
J37	0.20	13,000	39.38	19,000
J38	0.20	13,000	36.58	17,000
J39	0.20	13,000	34.87	17,000
J40	0.27	13,000	54.54	32,000
J46	0.27	13,000	54.12	31,000
J48	0.27	13,000	53.63	30,000
J75	0.25	13,000	35.45	17,000
J76	0.25	13,000	40.42	19,000
J77	0.25	13,000	35.92	17,000
J78	0.18	13,000	42.00	20,000
J79	0.18	13,000	38.99	18,000
J94	0.20	13,000	34.35	17,000
J95	0.20	13,000	33.61	16,000
J96	0.20	13,000	33.46	16,000
J97	0.20	13,000	24.84	14,000
J98	0.00	13,000	33.06	16,000

Option A - 2 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)				
Junction ID	**Base Demand (MXDY; L/s)**	**Required Fire Flow (L/min)**	**Residual Pressure (psi)**	**Available Fire Flow at Residual 20 psi (L/min)**
J01	0.18	13,000	59.80	64,000
J02	0.00	13,000	60.36	63,000
J05	0.18	13,000	60.85	63,000
J06	0.18	13,000	61.02	63,000
J07	0.27	13,000	61.26	64,000
J08	0.27	13,000	61.22	64,000
J09	0.27	13,000	60.82	65,000
J10	0.27	13,000	61.20	66,000
J100	0.38	13,000	49.95	26,000
J101	0.38	13,000	55.25	34,000
J102	0.38	13,000	54.95	34,000
J103	0.38	13,000	49.43	25,000
J11	0.27	13,000	61.23	68,000
J12	0.27	13,000	61.54	75,000
J15	0.18	13,000	59.95	55,000
J153	0.38	13,000	55.06	34,000
J158	0.00	13,000	54.39	31,000
J16	0.18	13,000	59.66	51,000
J17	0.18	13,000	58.98	48,000
J174	0.38	13,000	54.59	33,000
J176	0.38	13,000	54.99	33,000
J178	0.20	13,000	55.46	34,000
J18	0.18	13,000	58.32	45,000
J180	0.20	13,000	54.75	32,000
J182	0.20	13,000	54.42	31,000
J184	0.20	13,000	54.39	31,000
J186	0.20	13,000	56.29	37,000
J19	0.25	13,000	57.72	43,000
J20	0.25	13,000	58.01	43,000
J21	0.25	13,000	57.59	41,000
J22	0.25	13,000	57.50	41,000
J23	0.25	13,000	56.85	38,000
J24	0.25	13,000	56.22	36,000
J25	0.25	13,000	55.68	34,000
J26	0.25	13,000	55.67	34,000
J27	0.25	13,000	55.98	35,000
J28	0.25	13,000	55.76	34,000
J29	0.25	13,000	55.86	35,000
J30	0.18	13,000	56.16	35,000
J31	0.18	13,000	56.32	36,000
J32	0.18	13,000	56.53	36,000
J33	0.18	13,000	57.38	38,000
J34	0.18	13,000	58.29	42,000
J35	0.18	13,000	58.61	44,000
J36	0.18	13,000	59.53	49,000
J37	0.20	13,000	57.05	39,000
J38	0.20	13,000	56.87	38,000
J39	0.20	13,000	56.60	37,000
J40	0.27	13,000	61.46	73,000
J46	0.27	13,000	61.38	71,000
J48	0.27	13,000	61.28	69,000
J75	0.25	13,000	47.86	23,000
J76	0.25	13,000	52.35	28,000
J77	0.25	13,000	47.13	23,000
J78	0.18	13,000	52.76	29,000
J79	0.18	13,000	49.20	24,000
J80	0.38	13,000	44.54	21,000
J81	0.38	13,000	54.92	34,000
J82	0.38	13,000	54.56	33,000
J83	0.38	13,000	55.56	35,000
J84	0.36	13,000	55.89	36,000
J85	0.36	13,000	39.05	18,000
J86	0.36	13,000	35.38	17,000
J87	0.36	13,000	35.40	17,000
J88	0.36	13,000	39.53	19,000
J89	0.36	13,000	56.87	39,000
J90	0.38	13,000	48.31	24,000
J91	0.38	13,000	54.96	33,000
J92	0.38	13,000	44.36	21,000
J93	0.38	13,000	41.24	19,000
J94	0.20	13,000	54.83	32,000
J95	0.20	13,000	54.42	31,000
J96	0.20	13,000	54.48	31,000
J97	0.20	13,000	46.10	22,000
J98	0.00	13,000	54.24	31,000

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)				
Junction ID	**Base Demand (MXDY; L/s)**	**Required Fire Flow (L/min)**	**Residual Pressure (psi)**	**Available Fire Flow at Residual 20 psi (L/min)**
J01	0.18	13,000	62.31	66,000
J02	0.00	13,000	62.87	65,000
J05	0.18	13,000	63.35	65,000
J06	0.18	13,000	63.52	65,000
J07	0.27	13,000	63.76	66,000
J08	0.27	13,000	63.72	66,000
J09	0.27	13,000	63.31	67,000
J10	0.27	13,000	63.69	69,000
J100	0.38	13,000	52.45	27,000
J101	0.38	13,000	57.75	35,000
J102	0.38	13,000	57.45	35,000
J103	0.38	13,000	51.93	26,000
J11	0.27	13,000	63.72	70,000
J12	0.27	13,000	64.02	77,000
J15	0.18	13,000	62.45	57,000
J153	0.38	13,000	57.56	35,000
J158	0.00	13,000	56.89	32,000
J16	0.18	13,000	62.16	53,000
J17	0.18	13,000	61.48	49,000
J174	0.38	13,000	57.09	34,000
J176	0.38	13,000	57.49	34,000
J178	0.20	13,000	57.96	35,000
J18	0.18	13,000	60.82	47,000
J180	0.20	13,000	57.25	33,000
J182	0.20	13,000	56.92	32,000
J184	0.20	13,000	56.89	32,000
J186	0.20	13,000	58.79	38,000
J19	0.25	13,000	60.22	45,000
J20	0.25	13,000	60.51	44,000
J21	0.25	13,000	60.09	43,000
J22	0.25	13,000	60.00	42,000
J23	0.25	13,000	59.34	39,000
J24	0.25	13,000	58.72	37,000
J25	0.25	13,000	58.18	36,000
J26	0.25	13,000	58.17	35,000
J27	0.25	13,000	58.48	36,000
J28	0.25	13,000	58.26	35,000
J29	0.25	13,000	58.36	36,000
J30	0.18	13,000	58.66	37,000
J31	0.18	13,000	58.82	37,000
J32	0.18	13,000	59.03	37,000
J33	0.18	13,000	59.88	40,000
J34	0.18	13,000	60.79	44,000
J35	0.18	13,000	61.11	45,000
J36	0.18	13,000	62.03	50,000
J37	0.20	13,000	59.55	41,000
J38	0.20	13,000	59.37	40,000
J39	0.20	13,000	59.10	39,000
J40	0.27	13,000	63.94	75,000
J46	0.27	13,000	63.87	73,000
J48	0.27	13,000	63.77	71,000
J75	0.25	13,000	50.36	24,000
J76	0.25	13,000	54.85	29,000
J77	0.25	13,000	49.63	24,000
J78	0.18	13,000	55.26	30,000
J79	0.18	13,000	51.70	25,000
J80	0.38	13,000	47.04	22,000
J81	0.38	13,000	57.42	35,000
J82	0.38	13,000	57.06	34,000
J83	0.38	13,000	58.06	36,000
J84	0.36	13,000	58.39	37,000
J85	0.36	13,000	41.55	19,000
J86	0.36	13,000	37.88	18,000
J87	0.36	13,000	37.90	18,000
J88	0.36	13,000	42.03	19,000
J89	0.36	13,000	59.37	40,000
J90	0.38	13,000	50.81	25,000
J91	0.38	13,000	57.46	34,000
J92	0.38	13,000	46.86	22,000
J93	0.38	13,000	43.74	20,000
J94	0.20	13,000	57.33	33,000
J95	0.20	13,000	56.92	32,000
J96	0.20	13,000	56.98	32,000
J97	0.20	13,000	48.60	23,000
J98	0.00	13,000	56.74	32,000

Option B - 3 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E)				
Junction ID	**Base Demand (MXDY; L/s)**	**Required Fire Flow (L/min)**	**Residual Pressure (psi)**	**Available Fire Flow at Residual 20 psi (L/min)**
J01	0.18	13,000	50.62	27,000
J02	0.00	13,000	50.82	27,000
J05	0.18	13,000	51.13	27,000
J06	0.18	13,000	51.27	27,000
J07	0.27	13,000	51.66	27,000
J08	0.27	13,000	51.83	28,000
J09	0.27	13,000	51.69	28,000
J10	0.27	13,000	52.43	29,000
J100	0.38	13,000	35.22	17,000
J101	0.38	13,000	40.85	19,000
J102	0.38	13,000	40.23	19,000
J103	0.38	13,000	34.33	17,000
J11	0.27	13,000	52.87	29,000
J12	0.27	13,000	54.55	32,000
J15	0.18	13,000	48.44	24,000
J153	0.38	13,000	41.71	20,000
J158	0.00	13,000	39.17	19,000
J16	0.18	13,000	47.54	24,000
J17	0.18	13,000	45.98	22,000
J174	0.38	13,000	39.49	19,000
J176	0.38	13,000	39.61	19,000
J178	0.20	13,000	39.86	19,000
J18	0.18	13,000	44.92	22,000
J180	0.20	13,000	39.34	19,000
J182	0.20	13,000	39.12	19,000
J184	0.20	13,000	39.13	19,000
J186	0.20	13,000	40.47	19,000
J19	0.25	13,000	43.44	21,000
J20	0.25	13,000	44.01	21,000
J21	0.25	13,000	43.20	21,000
J22	0.25	13,000	43.66	21,000
J23	0.25	13,000	43.55	21,000
J24	0.25	13,000	43.23	21,000
J25	0.25	13,000	42.96	20,000
J26	0.25	13,000	43.20	21,000
J27	0.25	13,000	43.75	21,000
J28	0.25	13,000	43.80	21,000
J29	0.25	13,000	44.15	21,000
J30	0.18	13,000	44.70	21,000
J31	0.18	13,000	45.09	22,000
J32	0.18	13,000	45.48	22,000
J33	0.18	13,000	46.51	23,000
J34	0.18	13,000	47.71	24,000
J35	0.18	13,000	48.42	24,000
J36	0.18	13,000	49.65	25,000
J37	0.20	13,000	42.47	20,000
J38	0.20	13,000	41.73	20,000
J39	0.20	13,000	41.02	19,000
J40	0.27	13,000	54.14	31,000
J46	0.27	13,000	53.69	31,000
J48	0.27	13,000	53.16	30,000
J75	0.25	13,000	35.09	17,000
J76	0.25	13,000	39.80	19,000
J77	0.25	13,000	35.07	17,000
J78	0.18	13,000	41.05	19,000
J79	0.18	13,000	38.11	18,000
J80	0.38	13,000	30.86	16,000
J81	0.38	13,000	40.86	20,000
J82	0.38	13,000	40.86	20,000
J83	0.38	13,000	42.12	20,000
J84	0.36	13,000	42.59	20,000
J85	0.36	13,000	25.76	15,000
J86	0.36	13,000	22.09	14,000
J87	0.36	13,000	22.11	14,000
J88	0.36	13,000	26.24	15,000
J89	0.36	13,000	43.59	21,000
J90	0.38	13,000	35.03	17,000
J91	0.38	13,000	41.62	20,000
J92	0.38	13,000	30.91	16,000
J93	0.38	13,000	27.70	15,000
J94	0.20	13,000	39.73	19,000
J95	0.20	13,000	39.29	19,000
J96	0.20	13,000	39.31	19,000
J97	0.20	13,000	30.84	16,000
J98	0.00	13,000	39.03	18,000

163401660 - Barrhaven Conservancy

Model Results - MXDY+FF

Option A - 2 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	59.64	63,000
J02	0.00	13,000	60.19	63,000
J05	0.18	13,000	60.66	63,000
J06	0.18	13,000	60.84	63,000
J07	0.27	13,000	61.09	63,000
J08	0.27	13,000	61.06	64,000
J09	0.27	13,000	60.67	65,000
J10	0.27	13,000	61.07	66,000
J100	0.38	13,000	49.50	26,000
J101	0.38	13,000	54.92	34,000
J102	0.38	13,000	54.71	34,000
J103	0.38	13,000	48.97	25,000
J109	0.27	13,000	53.11	30,000
J11	0.27	13,000	61.11	68,000
J110	0.27	13,000	53.44	31,000
J111	0.27	13,000	54.44	33,000
J112	0.27	13,000	49.93	26,000
J113	0.27	13,000	42.04	20,000
J114	0.27	13,000	40.92	19,000
J115	0.27	13,000	43.55	21,000
J116	0.27	13,000	46.41	23,000
J117	0.27	13,000	44.69	21,000
J118	0.27	13,000	49.19	25,000
J119	0.27	13,000	50.84	27,000
J12	0.27	13,000	61.44	74,000
J120	0.27	13,000	49.48	25,000
J121	0.27	13,000	46.63	23,000
J122	0.27	13,000	40.39	19,000
J123	0.27	13,000	40.70	19,000
J124	0.27	13,000	47.66	24,000
J125	0.27	13,000	44.58	21,000
J128	0.00	6,000	56.15	16,000
J129	0.27	13,000	38.85	18,000
J130	0.27	13,000	42.37	20,000
J131	0.27	13,000	39.02	18,000
J132	0.27	13,000	42.61	20,000
J133	0.27	13,000	43.72	21,000
J134	0.27	13,000	40.65	19,000
J135	0.27	13,000	41.13	19,000
J136	0.27	13,000	43.13	20,000
J137	0.27	6,000	37.37	8,000
J14	0.27	6,000	55.05	15,000
J15	0.18	13,000	59.70	54,000
J153	0.38	13,000	54.70	34,000
J154	0.27	13,000	54.45	33,000
J155	0.27	13,000	54.16	32,000
J156	0.00	13,000	53.00	30,000
J158	0.00	13,000	53.92	31,000
J16	0.18	13,000	59.39	51,000
J162	0.00	13,000	53.12	31,000
J164	0.00	13,000	51.58	28,000
J166	0.00	13,000	46.47	23,000
J168	0.00	13,000	43.35	21,000
J17	0.18	13,000	58.67	47,000
J170	0.00	13,000	37.98	18,000
J172	0.00	13,000	53.56	31,000
J174	0.38	13,000	54.79	34,000
J176	0.38	13,000	54.67	33,000
J178	0.20	13,000	54.98	34,000
J18	0.18	13,000	57.97	45,000
J180	0.20	13,000	54.27	32,000
J182	0.20	13,000	53.95	31,000
J184	0.20	13,000	53.91	31,000
J186	0.20	13,000	55.81	36,000
J188	0.00	13,000	53.04	30,000
J19	0.25	13,000	57.35	43,000
J20	0.25	13,000	57.62	42,000
J21	0.25	13,000	57.19	41,000
J22	0.25	13,000	57.08	40,000
J23	0.25	13,000	56.45	38,000
J24	0.25	13,000	55.84	35,000
J25	0.25	13,000	55.32	34,000
J26	0.25	13,000	55.32	34,000
J27	0.25	13,000	55.64	34,000
J28	0.25	13,000	55.43	34,000
J29	0.25	13,000	55.54	34,000
J30	0.18	13,000	55.86	35,000
J31	0.18	13,000	56.02	35,000
J32	0.18	13,000	56.25	36,000
J33	0.18	13,000	57.11	38,000
J34	0.18	13,000	58.03	42,000
J35	0.18	13,000	58.38	44,000
J36	0.18	13,000	59.32	48,000
J37	0.20	13,000	56.61	39,000
J38	0.20	13,000	56.40	38,000
J39	0.20	13,000	56.12	37,000
J40	0.27	13,000	61.36	72,000
J41	0.27	13,000	55.52	35,000
J42	0.27	13,000	55.33	35,000
J43	0.27	13,000	54.77	33,000
J44	0.27	13,000	54.37	32,000
J45	0.27	13,000	53.32	30,000
J46	0.27	13,000	61.28	71,000
J48	0.27	13,000	61.17	69,000
J75	0.25	13,000	47.50	23,000
J76	0.25	13,000	52.00	28,000
J77	0.25	13,000	46.81	23,000
J78	0.18	13,000	52.45	29,000
J79	0.18	13,000	48.91	24,000
J80	0.38	13,000	44.13	21,000
J81	0.38	13,000	54.56	34,000
J82	0.38	13,000	54.19	33,000
J83	0.38	13,000	55.19	35,000
J84	0.36	13,000	55.53	36,000
J85	0.36	13,000	38.69	18,000
J86	0.36	13,000	35.02	17,000
J87	0.36	13,000	35.04	17,000
J88	0.36	13,000	39.17	19,000
J89	0.36	13,000	56.51	38,000
J90	0.38	13,000	47.95	24,000
J91	0.38	13,000	54.58	33,000
J92	0.38	13,000	43.97	21,000
J93	0.38	13,000	40.84	19,000
J94	0.20	13,000	54.36	32,000
J95	0.20	13,000	53.95	31,000
J96	0.20	13,000	54.00	31,000
J97	0.20	13,000	45.63	22,000
J98	0.00	13,000	53.76	31,000

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	62.15	65,000
J02	0.00	13,000	62.69	65,000
J05	0.18	13,000	63.16	65,000
J06	0.18	13,000	63.34	65,000
J07	0.27	13,000	63.59	65,000
J08	0.27	13,000	63.56	66,000
J09	0.27	13,000	63.16	67,000
J10	0.27	13,000	63.56	68,000
J100	0.38	13,000	52.00	26,000
J101	0.38	13,000	57.42	35,000
J102	0.38	13,000	57.21	35,000
J103	0.38	13,000	51.47	26,000
J109	0.27	13,000	55.60	31,000
J11	0.27	13,000	63.59	70,000
J110	0.27	13,000	55.93	32,000
J111	0.27	13,000	56.94	34,000
J112	0.27	13,000	52.43	27,000
J113	0.27	13,000	44.54	21,000
J114	0.27	13,000	43.42	20,000
J115	0.27	13,000	46.05	21,000
J116	0.27	13,000	48.91	23,000
J117	0.27	13,000	47.19	22,000
J118	0.27	13,000	51.69	26,000
J119	0.27	13,000	53.34	28,000
J12	0.27	13,000	63.92	76,000
J120	0.27	13,000	51.98	26,000
J121	0.27	13,000	49.13	24,000
J122	0.27	13,000	42.89	20,000
J123	0.27	13,000	43.20	20,000
J124	0.27	13,000	50.16	24,000
J125	0.27	13,000	47.08	22,000
J128	0.00	6,000	58.67	16,000
J129	0.27	13,000	41.35	19,000
J130	0.27	13,000	44.87	21,000
J131	0.27	13,000	41.52	19,000
J132	0.27	13,000	45.10	21,000
J133	0.27	13,000	46.22	21,000
J134	0.27	13,000	43.15	20,000
J135	0.27	13,000	43.62	20,000
J136	0.27	13,000	45.63	21,000
J137	0.27	6,000	39.90	8,000
J14	0.27	6,000	57.58	15,000
J15	0.18	13,000	62.20	56,000
J153	0.38	13,000	57.19	35,000
J154	0.27	13,000	56.95	34,000
J155	0.27	13,000	56.66	33,000
J156	0.00	13,000	55.50	31,000
J158	0.00	13,000	56.42	32,000
J16	0.18	13,000	61.88	52,000
J162	0.00	13,000	55.62	32,000
J164	0.00	13,000	54.08	29,000
J166	0.00	13,000	48.97	23,000
J168	0.00	13,000	45.85	21,000
J17	0.18	13,000	61.17	49,000
J170	0.00	13,000	40.48	19,000
J172	0.00	13,000	56.06	32,000
J174	0.38	13,000	57.29	35,000
J176	0.38	13,000	57.17	34,000
J178	0.20	13,000	57.48	35,000
J18	0.18	13,000	60.47	46,000
J180	0.20	13,000	56.77	33,000
J182	0.20	13,000	56.44	32,000
J184	0.20	13,000	56.41	32,000
J186	0.20	13,000	58.31	37,000
J188	0.00	13,000	55.54	31,000
J19	0.25	13,000	59.85	44,000
J20	0.25	13,000	60.12	43,000
J21	0.25	13,000	59.69	42,000
J22	0.25	13,000	59.58	42,000
J23	0.25	13,000	58.95	39,000
J24	0.25	13,000	58.34	36,000
J25	0.25	13,000	57.82	35,000
J26	0.25	13,000	57.82	35,000
J27	0.25	13,000	58.13	35,000
J28	0.25	13,000	57.93	35,000
J29	0.25	13,000	58.04	35,000
J30	0.18	13,000	58.36	36,000
J31	0.18	13,000	58.52	36,000
J32	0.18	13,000	58.74	37,000
J33	0.18	13,000	59.61	39,000
J34	0.18	13,000	60.53	43,000
J35	0.18	13,000	60.88	45,000
J36	0.18	13,000	61.82	50,000
J37	0.20	13,000	59.11	40,000
J38	0.20	13,000	58.90	39,000
J39	0.20	13,000	58.62	38,000
J40	0.27	13,000	63.84	75,000
J41	0.27	13,000	58.02	36,000
J42	0.27	13,000	57.83	36,000
J43	0.27	13,000	57.27	34,000
J44	0.27	13,000	56.87	33,000
J45	0.27	13,000	55.82	31,000
J46	0.27	13,000	63.76	73,000
J48	0.27	13,000	63.65	71,000
J75	0.25	13,000	50.00	24,000
J76	0.25	13,000	54.50	29,000
J77	0.25	13,000	49.30	23,000
J78	0.18	13,000	54.95	29,000
J79	0.18	13,000	51.41	25,000
J80	0.38	13,000	46.63	22,000
J81	0.38	13,000	57.06	35,000
J82	0.38	13,000	56.69	34,000
J83	0.38	13,000	57.69	36,000
J84	0.36	13,000	58.03	37,000
J85	0.36	13,000	41.19	19,000
J86	0.36	13,000	37.52	17,000
J87	0.36	13,000	37.54	17,000
J88	0.36	13,000	41.67	19,000
J89	0.36	13,000	59.01	40,000
J90	0.38	13,000	50.44	25,000
J91	0.38	13,000	57.08	34,000
J92	0.38	13,000	46.47	22,000
J93	0.38	13,000	43.34	20,000
J94	0.20	13,000	56.86	33,000
J95	0.20	13,000	56.44	32,000
J96	0.20	13,000	56.50	32,000
J97	0.20	13,000	48.12	23,000
J98	0.00	13,000	56.26	32,000

Option B - 3 Connections - Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	51.27	32,000
J02	0.00	13,000	51.95	33,000
J05	0.18	13,000	52.67	35,000
J06	0.18	13,000	52.68	35,000
J07	0.27	13,000	52.23	33,000
J08	0.27	13,000	51.74	32,000
J09	0.27	13,000	51.02	32,000
J10	0.27	13,000	51.18	32,000
J100	0.38	13,000	42.61	22,000
J101	0.38	13,000	47.99	27,000
J102	0.38	13,000	47.78	27,000
J103	0.38	13,000	42.01	21,000
J109	0.27	13,000	45.57	24,000
J11	0.27	13,000	51.09	32,000
J110	0.27	13,000	45.69	24,000
J111	0.27	13,000	46.21	25,000
J112	0.27	13,000	40.97	20,000
J113	0.27	13,000	32.84	17,000
J114	0.27	13,000	31.60	16,000
J115	0.27	13,000	34.12	17,000
J116	0.27	13,000	36.87	18,000
J117	0.27	13,000	35.22	18,000
J118	0.27	13,000	39.78	20,000
J119	0.27	13,000	40.92	20,000
J12	0.27	13,000	51.55	34,000
J120	0.27	13,000	39.53	20,000
J121	0.27	13,000	36.83	18,000
J122	0.27	13,000	30.40	16,000
J123	0.27	13,000	30.46	16,000
J124	0.27	13,000	36.96	18,000
J125	0.27	13,000	34.39	17,000
J128	0.00	6,000	51.01	14,000
J129	0.27	13,000	30.14	16,000
J130	0.27	13,000	33.75	17,000
J131	0.27	13,000	30.21	16,000
J132	0.27	13,000	33.62	17,000
J133	0.27	13,000	33.07	17,000
J134	0.27	13,000	29.95	16,000
J135	0.27	13,000	30.33	16,000
J136	0.27	13,000	32.25	16,000
J137	0.27	6,000	31.75	7,000
J14	0.27	6,000	49.43	13,000
J15	0.18	13,000	50.86	31,000
J153	0.38	13,000	47.25	26,000
J154	0.27	13,000	43.80	22,000
J155	0.27	13,000	42.64	21,000
J156	0.00	13,000	39.01	19,000
J158	0.00	13,000	49.00	28,000
J16	0.18	13,000	50.62	30,000
J162	0.00	13,000	45.76	24,000
J164	0.00	13,000	44.11	23,000
J166	0.00	13,000	39.00	19,000
J168	0.00	13,000	35.88	18,000
J17	0.18	13,000	49.90	29,000
J170	0.00	13,000	30.51	16,000
J172	0.00	13,000	46.34	25,000
J174	0.38	13,000	47.73	27,000
J176	0.38	13,000	47.56	26,000
J178	0.20	13,000	48.31	27,000
J18	0.18	13,000	49.78	30,000
J180	0.20	13,000	48.38	27,000
J182	0.20	13,000	48.86	27,000
J184	0.20	13,000	49.37	28,000
J186	0.20	13,000	48.59	28,000
J188	0.00	13,000	45.57	24,000
J19	0.25	13,000	48.60	28,000
J20	0.25	13,000	49.36	29,000
J21	0.25	13,000	48.74	28,000
J22	0.25	13,000	49.50	29,000
J23	0.25	13,000	49.00	28,000
J24	0.25	13,000	48.43	27,000
J25	0.25	13,000	47.94	26,000
J26	0.25	13,000	47.97	26,000
J27	0.25	13,000	48.30	27,000
J28	0.25	13,000	48.10	26,000
J29	0.25	13,000	48.22	27,000
J30	0.18	13,000	48.53	27,000
J31	0.18	13,000	48.69	27,000
J32	0.18	13,000	48.90	27,000
J33	0.18	13,000	49.74	28,000
J34	0.18	13,000	50.61	30,000
J35	0.18	13,000	50.85	31,000
J36	0.18	13,000	51.60	32,000
J37	0.20	13,000	49.17	29,000
J38	0.20	13,000	49.31	29,000
J39	0.20	13,000	48.87	28,000
J40	0.27	13,000	51.39	33,000
J41	0.27	13,000	47.38	26,000
J42	0.27	13,000	46.77	25,000
J43	0.27	13,000	45.08	24,000
J44	0.27	13,000	43.51	22,000
J45	0.27	13,000	40.32	20,000
J46	0.27	13,000	51.25	33,000
J48	0.27	13,000	51.13	32,000
J75	0.25	13,000	40.11	20,000
J76	0.25	13,000	44.60	23,000
J77	0.25	13,000	39.44	19,000
J78	0.18	13,000	45.07	23,000
J79	0.18	13,000	41.55	21,000
J80	0.38	13,000	37.02	18,000
J81	0.38	13,000	47.56	27,000
J82	0.38	13,000	47.03	26,000
J83	0.38	13,000	47.85	27,000
J84	0.36	13,000	47.95	27,000
J85	0.36	13,000	31.05	16,000
J86	0.36	13,000	27.35	15,000
J87	0.36	13,000	27.36	15,000
J88	0.36	13,000	31.48	16,000
J89	0.36	13,000	48.81	28,000
J90	0.38	13,000	40.40	20,000
J91	0.38	13,000	47.17	26,000
J92	0.38	13,000	36.72	18,000
J93	0.38	13,000	33.65	17,000
J94	0.20	13,000	47.88	26,000
J95	0.20	13,000	48.04	26,000
J96	0.20	13,000	48.49	27,000
J97	0.20	13,000	39.21	19,000
J98	0.00	13,000	48.63	27,000

163401660 - Barrhaven Conservancy

Model Results - MXDY+FF

Option A - 2 Connections - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	59.57	64,000
J02	0.00	13,000	60.11	63,000
J05	0.18	13,000	60.58	63,000
J06	0.18	13,000	60.76	63,000
J07	0.27	13,000	61.00	64,000
J08	0.27	13,000	60.99	64,000
J09	0.27	13,000	60.59	65,000
J10	0.27	13,000	60.99	66,000
J100	0.38	13,000	49.50	26,000
J101	0.38	13,000	54.91	34,000
J102	0.38	13,000	54.70	34,000
J103	0.38	13,000	48.97	25,000
J109	0.27	13,000	53.11	31,000
J11	0.27	13,000	61.02	68,000
J110	0.27	13,000	53.44	31,000
J111	0.27	13,000	54.44	33,000
J112	0.27	13,000	49.93	26,000
J113	0.27	13,000	42.04	20,000
J114	0.27	13,000	40.92	19,000
J115	0.27	13,000	43.55	21,000
J116	0.27	13,000	46.41	23,000
J117	0.27	13,000	44.69	21,000
J118	0.27	13,000	49.19	25,000
J119	0.27	13,000	50.84	27,000
J12	0.27	13,000	61.37	74,000
J120	0.27	13,000	49.48	25,000
J121	0.27	13,000	46.63	23,000
J122	0.27	13,000	40.39	19,000
J123	0.27	13,000	40.70	19,000
J124	0.27	13,000	47.66	24,000
J125	0.27	13,000	44.58	21,000
J128	0.00	6,000	56.11	16,000
J129	0.27	13,000	38.85	18,000
J130	0.27	13,000	42.37	20,000
J131	0.27	13,000	39.02	18,000
J132	0.27	13,000	42.61	20,000
J133	0.27	13,000	43.72	21,000
J134	0.27	13,000	40.65	19,000
J135	0.27	13,000	41.13	19,000
J136	0.27	13,000	43.13	20,000
J137	0.27	6,000	37.34	8,000
J14	0.27	6,000	55.02	15,000
J15	0.18	13,000	59.63	55,000
J152	0.27	13,000	55.95	34,000
J153	0.38	13,000	54.68	34,000
J154	0.27	13,000	54.45	33,000
J155	0.27	13,000	54.16	32,000
J156	0.00	13,000	53.00	30,000
J158	0.00	13,000	53.92	31,000
J16	0.18	13,000	59.33	51,000
J162	0.00	13,000	53.12	31,000
J164	0.00	13,000	51.58	28,000
J166	0.00	13,000	46.47	23,000
J168	0.00	13,000	43.35	21,000
J17	0.18	13,000	58.63	48,000
J170	0.00	13,000	37.98	18,000
J172	0.00	13,000	53.56	32,000
J174	0.38	13,000	54.79	34,000
J176	0.38	13,000	54.67	34,000
J178	0.20	13,000	54.98	34,000
J18	0.18	13,000	57.94	45,000
J180	0.20	13,000	54.27	32,000
J182	0.20	13,000	53.95	31,000
J184	0.20	13,000	53.91	31,000
J186	0.20	13,000	55.81	36,000
J188	0.00	13,000	53.04	31,000
J19	0.25	13,000	57.34	43,000
J20	0.25	13,000	57.61	43,000
J21	0.25	13,000	57.19	41,000
J22	0.25	13,000	57.08	41,000
J23	0.25	13,000	56.49	38,000
J24	0.25	13,000	55.94	36,000
J25	0.25	13,000	55.55	35,000
J26	0.25	13,000	55.58	35,000
J27	0.25	13,000	55.89	35,000
J28	0.25	13,000	55.74	35,000
J29	0.25	13,000	55.88	35,000
J30	0.18	13,000	56.26	37,000
J31	0.18	13,000	56.52	37,000
J32	0.18	13,000	56.87	38,000
J33	0.18	13,000	57.52	40,000
J34	0.18	13,000	58.15	43,000
J35	0.18	13,000	58.57	45,000
J36	0.18	13,000	59.62	51,000
J37	0.20	13,000	56.61	39,000
J38	0.20	13,000	56.40	38,000
J39	0.20	13,000	56.12	37,000
J40	0.27	13,000	61.28	72,000
J41	0.27	13,000	55.52	35,000
J42	0.27	13,000	55.33	35,000
J43	0.27	13,000	54.77	34,000
J44	0.27	13,000	54.37	33,000
J45	0.27	13,000	53.32	31,000
J46	0.27	13,000	61.19	71,000
J48	0.27	13,000	61.08	69,000
J50	0.27	13,000	53.65	30,000
J51	0.27	13,000	53.34	29,000
J52	0.27	13,000	50.40	26,000
J53	0.27	13,000	49.71	25,000
J55	0.27	13,000	51.80	27,000
J56	0.27	13,000	46.99	23,000
J57	0.27	13,000	49.03	24,000
J58	0.27	13,000	47.66	23,000
J59	0.27	13,000	43.75	21,000
J60	0.27	13,000	39.81	19,000
J61	0.27	13,000	39.40	18,000
J62	0.27	13,000	43.49	20,000
J63	0.27	13,000	43.83	21,000
J64	0.27	13,000	40.34	19,000
J65	0.27	13,000	40.42	19,000
J66	0.27	13,000	44.65	21,000
J67	0.27	13,000	45.23	21,000
J68	0.27	13,000	40.74	19,000
J69	0.27	13,000	40.77	19,000
J70	0.27	13,000	44.27	21,000
J71	0.27	13,000	44.77	21,000
J72	0.27	13,000	41.15	19,000
J73	0.27	13,000	41.33	19,000
J74	0.27	13,000	44.60	21,000
J75	0.25	13,000	47.52	23,000
J76	0.25	13,000	52.02	28,000
J77	0.25	13,000	46.83	23,000
J78	0.18	13,000	52.48	29,000
J79	0.18	13,000	48.97	24,000
J80	0.38	13,000	44.13	21,000
J81	0.38	13,000	54.55	34,000
J82	0.38	13,000	54.18	33,000
J83	0.38	13,000	55.17	35,000
J84	0.36	13,000	55.51	36,000
J85	0.36	13,000	38.67	18,000
J86	0.36	13,000	34.99	17,000
J87	0.36	13,000	35.02	17,000
J88	0.36	13,000	39.15	19,000
J89	0.36	13,000	56.49	39,000
J90	0.38	13,000	47.93	24,000
J91	0.38	13,000	54.57	33,000
J92	0.38	13,000	43.96	21,000
J93	0.38	13,000	40.83	19,000
J94	0.20	13,000	54.36	32,000
J95	0.20	13,000	53.95	31,000
J96	0.20	13,000	54.00	31,000
J97	0.20	13,000	45.63	22,000
J98	0.00	13,000	53.76	31,000

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	62.08	66,000
J02	0.00	13,000	62.61	65,000
J05	0.18	13,000	63.08	65,000
J06	0.18	13,000	63.25	65,000
J07	0.27	13,000	63.50	66,000
J08	0.27	13,000	63.48	66,000
J09	0.27	13,000	63.08	67,000
J10	0.27	13,000	63.48	68,000
J100	0.38	13,000	52.00	26,000
J101	0.38	13,000	57.41	36,000
J102	0.38	13,000	57.20	35,000
J103	0.38	13,000	51.47	26,000
J109	0.27	13,000	55.60	32,000
J11	0.27	13,000	63.50	70,000
J110	0.27	13,000	55.93	32,000
J111	0.27	13,000	56.94	34,000
J112	0.27	13,000	52.43	27,000
J113	0.27	13,000	44.54	21,000
J114	0.27	13,000	43.42	20,000
J115	0.27	13,000	46.05	21,000
J116	0.27	13,000	48.91	23,000
J117	0.27	13,000	47.19	22,000
J118	0.27	13,000	51.68	26,000
J119	0.27	13,000	53.34	28,000
J12	0.27	13,000	63.85	76,000
J120	0.27	13,000	51.98	26,000
J121	0.27	13,000	49.13	24,000
J122	0.27	13,000	42.89	20,000
J123	0.27	13,000	43.20	20,000
J124	0.27	13,000	50.16	24,000
J125	0.27	13,000	47.08	22,000
J128	0.00	6,000	58.63	16,000
J129	0.27	13,000	41.35	19,000
J130	0.27	13,000	44.87	21,000
J131	0.27	13,000	41.52	19,000
J132	0.27	13,000	45.10	21,000
J133	0.27	13,000	46.22	21,000
J134	0.27	13,000	43.15	20,000
J135	0.27	13,000	43.62	20,000
J136	0.27	13,000	45.63	21,000
J137	0.27	6,000	39.86	8,000
J14	0.27	6,000	57.54	15,000
J15	0.18	13,000	62.13	56,000
J152	0.27	13,000	58.45	35,000
J153	0.38	13,000	57.17	35,000
J154	0.27	13,000	56.95	34,000
J155	0.27	13,000	56.66	33,000
J156	0.00	13,000	55.50	31,000
J158	0.00	13,000	56.42	32,000
J16	0.18	13,000	61.83	53,000
J162	0.00	13,000	55.62	32,000
J164	0.00	13,000	54.08	29,000
J166	0.00	13,000	48.97	24,000
J168	0.00	13,000	45.85	21,000
J17	0.18	13,000	61.12	49,000
J170	0.00	13,000	40.48	19,000
J172	0.00	13,000	56.05	33,000
J174	0.38	13,000	57.28	35,000
J176	0.38	13,000	57.17	35,000
J178	0.20	13,000	57.48	35,000
J18	0.18	13,000	60.44	47,000
J180	0.20	13,000	56.77	33,000
J182	0.20	13,000	56.44	32,000
J184	0.20	13,000	56.41	32,000
J186	0.20	13,000	58.31	38,000
J188	0.00	13,000	55.54	32,000
J19	0.25	13,000	59.83	44,000
J20	0.25	13,000	60.11	44,000
J21	0.25	13,000	59.69	43,000
J22	0.25	13,000	59.58	42,000
J23	0.25	13,000	58.99	39,000
J24	0.25	13,000	58.44	37,000
J25	0.25	13,000	58.04	36,000
J26	0.25	13,000	58.08	36,000
J27	0.25	13,000	58.38	37,000
J28	0.25	13,000	58.24	36,000
J29	0.25	13,000	58.38	37,000
J30	0.18	13,000	58.76	38,000
J31	0.18	13,000	59.02	38,000
J32	0.18	13,000	59.37	40,000
J33	0.18	13,000	60.02	41,000
J34	0.18	13,000	60.65	44,000
J35	0.18	13,000	61.06	47,000
J36	0.18	13,000	62.11	53,000
J37	0.20	13,000	59.11	41,000
J38	0.20	13,000	58.90	39,000
J39	0.20	13,000	58.62	38,000
J40	0.27	13,000	63.77	75,000
J41	0.27	13,000	58.02	37,000
J42	0.27	13,000	57.83	36,000
J43	0.27	13,000	57.27	35,000
J44	0.27	13,000	56.87	34,000
J45	0.27	13,000	55.82	32,000
J46	0.27	13,000	63.68	73,000
J48	0.27	13,000	63.56	71,000
J50	0.27	13,000	56.14	31,000
J51	0.27	13,000	55.82	30,000
J52	0.27	13,000	52.89	26,000
J53	0.27	13,000	52.20	26,000
J55	0.27	13,000	54.30	28,000
J56	0.27	13,000	49.49	23,000
J57	0.27	13,000	51.52	25,000
J58	0.27	13,000	50.16	24,000
J59	0.27	13,000	46.25	21,000
J60	0.27	13,000	42.30	19,000
J61	0.27	13,000	41.90	19,000
J62	0.27	13,000	45.99	21,000
J63	0.27	13,000	46.33	21,000
J64	0.27	13,000	42.84	19,000
J65	0.27	13,000	42.92	19,000
J66	0.27	13,000	47.15	22,000
J67	0.27	13,000	47.73	22,000
J68	0.27	13,000	43.24	20,000
J69	0.27	13,000	43.27	20,000
J70	0.27	13,000	46.77	22,000
J71	0.27	13,000	47.27	22,000
J72	0.27	13,000	43.65	20,000
J73	0.27	13,000	43.83	20,000
J74	0.27	13,000	47.10	22,000
J75	0.25	13,000	50.02	24,000
J76	0.25	13,000	54.52	29,000
J77	0.25	13,000	49.33	24,000
J78	0.18	13,000	54.98	30,000
J79	0.18	13,000	51.47	25,000
J80	0.38	13,000	46.62	22,000
J81	0.38	13,000	57.05	35,000
J82	0.38	13,000	56.67	34,000
J83	0.38	13,000	57.67	36,000
J84	0.36	13,000	58.01	37,000
J85	0.36	13,000	41.17	19,000
J86	0.36	13,000	37.49	17,000
J87	0.36	13,000	37.51	18,000
J88	0.36	13,000	41.65	19,000
J89	0.36	13,000	58.99	40,000
J90	0.38	13,000	50.42	25,000
J91	0.38	13,000	57.07	34,000
J92	0.38	13,000	46.45	22,000
J93	0.38	13,000	43.33	20,000
J94	0.20	13,000	56.86	33,000
J95	0.20	13,000	56.44	32,000
J96	0.20	13,000	56.50	32,000
J97	0.20	13,000	48.12	23,000
J98	0.00	13,000	56.26	32,000

Option B - 3 Connections - Buildout (Phase 2 (2A, 2B, 2C) + Phase 3 (2D, 2E) + Phase 4 + Jock River)				
Junction ID	Base Demand (MXDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.18	13,000	51.10	32,000
J02	0.00	13,000	51.76	33,000
J05	0.18	13,000	52.47	35,000
J06	0.18	13,000	52.47	35,000
J07	0.27	13,000	52.26	34,000
J08	0.27	13,000	51.78	33,000
J09	0.27	13,000	51.11	32,000
J10	0.27	13,000	51.26	32,000
J100	0.38	13,000	42.51	22,000
J101	0.38	13,000	47.89	27,000
J102	0.38	13,000	47.68	27,000
J103	0.38	13,000	41.91	21,000
J109	0.27	13,000	45.47	24,000
J11	0.27	13,000	51.16	32,000
J110	0.27	13,000	45.60	24,000
J111	0.27	13,000	46.12	25,000
J112	0.27	13,000	40.87	20,000
J113	0.27	13,000	32.75	17,000
J114	0.27	13,000	31.50	16,000
J115	0.27	13,000	34.02	17,000
J116	0.27	13,000	36.78	18,000
J117	0.27	13,000	35.13	18,000
J118	0.27	13,000	39.69	20,000
J119	0.27	13,000	40.83	20,000
J12	0.27	13,000	51.56	34,000
J120	0.27	13,000	39.44	20,000
J121	0.27	13,000	36.74	18,000
J122	0.27	13,000	30.31	16,000
J123	0.27	13,000	30.37	16,000
J124	0.27	13,000	36.86	18,000
J125	0.27	13,000	34.30	17,000
J128	0.00	6,000	50.94	14,000
J129	0.27	13,000	30.05	16,000
J130	0.27	13,000	33.65	17,000
J131	0.27	13,000	30.12	16,000
J132	0.27	13,000	33.53	17,000
J133	0.27	13,000	32.97	17,000
J134	0.27	13,000	29.85	16,000
J135	0.27	13,000	30.24	16,000
J136	0.27	13,000	32.16	16,000
J137	0.27	6,000	31.68	7,000
J14	0.27	6,000	49.36	13,000
J15	0.18	13,000	50.66	31,000
J152	0.27	13,000	47.62	26,000
J153	0.38	13,000	47.14	26,000
J154	0.27	13,000	43.71	22,000
J155	0.27	13,000	42.55	21,000
J156	0.00	13,000	38.91	19,000
J158	0.00	13,000	48.91	28,000
J16	0.18	13,000	50.43	30,000
J162	0.00	13,000	45.66	24,000
J164	0.00	13,000	44.02	23,000
J166	0.00	13,000	38.91	19,000
J168	0.00	13,000	35.79	18,000
J17	0.18	13,000	49.74	29,000
J170	0.00	13,000	30.42	16,000
J172	0.00	13,000	46.24	25,000
J174	0.38	13,000	47.63	27,000
J176	0.38	13,000	47.47	26,000
J178	0.20	13,000	48.22	27,000
J18	0.18	13,000	49.65	30,000
J180	0.20	13,000	48.29	27,000
J182	0.20	13,000	48.77	28,000
J184	0.20	13,000	49.28	28,000
J186	0.20	13,000	48.50	28,000
J188	0.00	13,000	45.48	24,000
J19	0.25	13,000	48.49	28,000
J20	0.25	13,000	49.27	29,000
J21	0.25	13,000	48.66	28,000
J22	0.25	13,000	49.43	29,000
J23	0.25	13,000	48.97	28,000
J24	0.25	13,000	48.45	27,000
J25	0.25	13,000	48.08	27,000
J26	0.25	13,000	48.14	27,000
J27	0.25	13,000	48.45	27,000
J28	0.25	13,000	48.31	27,000
J29	0.25	13,000	48.45	27,000
J30	0.18	13,000	48.83	28,000
J31	0.18	13,000	49.07	28,000
J32	0.18	13,000	49.41	29,000
J33	0.18	13,000	50.02	29,000
J34	0.18	13,000	50.61	31,000
J35	0.18	13,000	50.94	31,000
J36	0.18	13,000	51.77	33,000
J37	0.20	13,000	49.09	29,000
J38	0.20	13,000	49.22	29,000
J39	0.20	13,000	48.78	28,000
J40	0.27	13,000	51.41	33,000
J41	0.27	13,000	47.29	26,000
J42	0.27	13,000	46.67	25,000
J43	0.27	13,000	44.99	24,000
J44	0.27	13,000	43.42	22,000
J45	0.27	13,000	40.23	20,000
J46	0.27	13,000	51.28	33,000
J48	0.27	13,000	51.18	33,000
J50	0.27	13,000	44.03	23,000
J51	0.27	13,000	43.73	22,000
J52	0.27	13,000	41.26	21,000
J53	0.27	13,000	40.58	20,000
J55	0.27	13,000	43.69	22,000
J56	0.27	13,000	39.43	19,000
J57	0.27	13,000	41.49	20,000
J58	0.27	13,000	40.14	20,000
J59	0.27	13,000	36.31	18,000
J60	0.27	13,000	32.36	16,000
J61	0.27	13,000	31.96	16,000
J62	0.27	13,000	36.05	18,000
J63	0.27	13,000	36.40	18,000
J64	0.27	13,000	32.91	17,000
J65	0.27	13,000	32.99	17,000
J66	0.27	13,000	37.22	18,000
J67	0.27	13,000	37.80	19,000
J68	0.27	13,000	33.30	17,000
J69	0.27	13,000	33.33	17,000
J70	0.27	13,000	36.83	18,000
J71	0.27	13,000	37.30	18,000
J72	0.27	13,000	33.67	17,000
J73	0.27	13,000	33.85	17,000
J74	0.27	13,000	37.12	18,000
J75	0.25	13,000	40.05	20,000
J76	0.25	13,000	44.53	23,000
J77	0.25	13,000	39.36	19,000
J78	0.18	13,000	45.00	23,000
J79	0.18	13,000	41.50	21,000
J80	0.38	13,000	36.92	18,000
J81	0.38	13,000	47.46	27,000
J82	0.38	13,000	46.93	26,000
J83	0.38	13,000	47.74	27,000
J84	0.36	13,000	47.84	27,000
J85	0.36	13,000	30.94	16,000
J86	0.36	13,000	27.24	15,000
J87	0.36	13,000	27.25	15,000
J88	0.36	13,000	31.37	16,000
J89	0.36	13,000	48.69	28,000
J90	0.38	13,000	40.30	20,000
J91	0.38	13,000	47.07	26,000
J92	0.38	13,000	36.62	18,000
J93	0.38	13,000	33.56	17,000
J94	0.20	13,000	47.79	26,000
J95	0.20	13,000	47.95	26,000
J96	0.20	13,000	48.40	27,000
J97	0.20	13,000	39.12	19,000
J98	0.00	13,000	48.54	27,000

163401660 - Barrhaven Conservancy
Model Results - Reliability Analysis (AVDY+FF)

Option A - 2 Connections - Break Scenario 1 (Connection 1 Break)

Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	48.30	27,000
J02	0.00	13,000	49.76	29,000
J05	0.07	13,000	50.90	30,000
J06	0.07	13,000	51.55	31,000
J07	0.11	13,000	52.39	33,000
J08	0.11	13,000	52.93	34,000
J09	0.11	13,000	53.00	35,000
J10	0.11	13,000	53.93	37,000
J100	0.15	13,000	40.21	20,000
J101	0.15	13,000	44.42	23,000
J102	0.15	13,000	43.10	22,000
J103	0.15	13,000	39.53	19,000
J109	0.11	13,000	42.95	22,000
J11	0.11	13,000	54.37	39,000
J110	0.11	13,000	43.52	22,000
J111	0.11	13,000	44.86	23,000
J112	0.11	13,000	40.47	20,000
J113	0.11	13,000	32.63	17,000
J114	0.11	13,000	31.52	16,000
J115	0.11	13,000	34.15	17,000
J116	0.11	13,000	37.01	18,000
J117	0.11	13,000	35.28	18,000
J118	0.11	13,000	39.76	20,000
J119	0.11	13,000	41.42	20,000
J12	0.11	13,000	55.82	47,000
J120	0.11	13,000	40.06	20,000
J121	0.11	13,000	37.23	18,000
J122	0.11	13,000	31.00	16,000
J123	0.11	13,000	31.31	16,000
J124	0.11	13,000	38.25	19,000
J125	0.11	13,000	35.17	17,000
J128	0.00	6,000	51.77	14,000
J129	0.11	13,000	29.43	16,000
J130	0.11	13,000	32.94	17,000
J131	0.11	13,000	29.61	16,000
J132	0.11	13,000	33.18	17,000
J133	0.11	13,000	34.32	17,000
J134	0.11	13,000	31.27	16,000
J135	0.11	13,000	31.76	16,000
J136	0.11	13,000	33.75	17,000
J137	0.11	6,000	33.09	8,000
J14	0.11	6,000	50.72	13,000
J15	0.07	13,000	50.17	29,000
J152	0.11	13,000	47.28	25,000
J153	0.15	13,000	45.43	24,000
J154	0.11	13,000	45.00	23,000
J155	0.11	13,000	44.71	23,000
J156	0.00	13,000	43.55	22,000
J158	0.00	13,000	44.71	22,000
J16	0.07	13,000	49.97	29,000
J162	0.00	13,000	42.67	21,000
J164	0.00	13,000	41.33	20,000
J166	0.00	13,000	36.22	18,000
J168	0.00	13,000	33.10	17,000
J17	0.07	13,000	49.36	28,000
J170	0.00	13,000	27.73	15,000
J172	0.00	13,000	42.74	21,000
J174	0.15	13,000	43.32	22,000
J176	0.15	13,000	44.32	22,000
J178	0.08	13,000	45.63	23,000
J18	0.07	13,000	48.76	27,000
J180	0.08	13,000	44.99	23,000
J182	0.08	13,000	44.71	23,000
J184	0.08	13,000	44.69	22,000
J186	0.08	13,000	46.38	24,000
J188	0.00	13,000	42.79	21,000
J19	0.10	13,000	48.19	27,000
J20	0.10	13,000	48.50	27,000
J21	0.10	13,000	48.09	26,000
J22	0.10	13,000	47.99	26,000
J23	0.10	13,000	47.41	25,000
J24	0.10	13,000	46.87	25,000
J25	0.10	13,000	46.48	24,000
J26	0.10	13,000	46.53	24,000
J27	0.10	13,000	46.83	24,000
J28	0.10	13,000	46.69	24,000
J29	0.10	13,000	46.82	24,000
J30	0.07	13,000	47.20	25,000
J31	0.07	13,000	47.45	25,000
J32	0.07	13,000	47.80	26,000
J33	0.07	13,000	48.43	26,000
J34	0.07	13,000	49.04	27,000
J35	0.07	13,000	49.46	28,000
J36	0.07	13,000	50.50	29,000
J37	0.08	13,000	47.51	26,000
J38	0.08	13,000	47.28	25,000
J39	0.08	13,000	46.92	25,000
J40	0.11	13,000	55.51	45,000
J41	0.11	13,000	46.06	24,000
J42	0.11	13,000	45.85	24,000
J43	0.11	13,000	45.30	23,000
J44	0.11	13,000	44.92	23,000
J45	0.11	13,000	43.88	22,000
J46	0.11	13,000	55.15	43,000
J48	0.11	13,000	54.67	41,000
J50	0.11	13,000	46.95	25,000
J51	0.11	13,000	46.55	24,000
J52	0.11	13,000	42.75	21,000
J53	0.11	13,000	42.00	21,000
J55	0.11	13,000	43.06	21,000
J56	0.11	13,000	37.92	18,000
J57	0.11	13,000	39.96	19,000
J58	0.11	13,000	38.60	19,000
J59	0.11	13,000	34.73	17,000
J60	0.11	13,000	30.80	16,000
J61	0.11	13,000	30.40	16,000
J62	0.11	13,000	34.47	17,000
J63	0.11	13,000	34.82	17,000
J64	0.11	13,000	31.34	16,000
J65	0.11	13,000	31.42	16,000
J66	0.11	13,000	35.63	18,000
J67	0.11	13,000	36.21	18,000
J68	0.11	13,000	31.74	16,000
J69	0.11	13,000	31.77	16,000
J70	0.11	13,000	35.26	17,000
J71	0.11	13,000	35.74	18,000
J72	0.11	13,000	32.13	16,000
J73	0.11	13,000	32.31	16,000
J74	0.11	13,000	35.57	18,000
J75	0.10	13,000	38.44	19,000
J76	0.10	13,000	42.92	21,000
J77	0.10	13,000	37.73	18,000
J78	0.07	13,000	43.36	22,000
J79	0.07	13,000	39.87	19,000
J80	0.15	13,000	35.03	17,000
J81	0.15	13,000	44.53	23,000
J82	0.15	13,000	44.55	23,000
J83	0.15	13,000	45.85	24,000
J84	0.15	13,000	46.32	24,000
J85	0.15	13,000	29.58	16,000
J86	0.15	13,000	25.93	15,000
J87	0.15	13,000	25.95	15,000
J88	0.15	13,000	30.06	16,000
J89	0.15	13,000	47.32	25,000
J90	0.15	13,000	38.76	19,000
J91	0.15	13,000	45.41	23,000
J92	0.15	13,000	34.84	17,000
J93	0.15	13,000	31.74	16,000
J94	0.08	13,000	45.22	23,000
J95	0.08	13,000	44.78	23,000
J96	0.08	13,000	44.82	23,000
J97	0.08	13,000	36.45	18,000
J98	0.00	13,000	44.56	22,000

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Break Scenario 1 (Connection 1 Break)

Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	54.98	30,000
J02	0.00	13,000	56.44	31,000
J05	0.07	13,000	57.59	33,000
J06	0.07	13,000	58.24	34,000
J07	0.11	13,000	59.07	35,000
J08	0.11	13,000	59.62	37,000
J09	0.11	13,000	59.68	38,000
J10	0.11	13,000	60.61	41,000
J100	0.15	13,000	46.89	22,000
J101	0.15	13,000	51.10	25,000
J102	0.15	13,000	49.78	24,000
J103	0.15	13,000	46.21	21,000
J109	0.11	13,000	49.63	23,000
J11	0.11	13,000	61.05	43,000
J110	0.11	13,000	50.21	24,000
J111	0.11	13,000	51.54	25,000
J112	0.11	13,000	47.16	22,000
J113	0.11	13,000	39.31	18,000
J114	0.11	13,000	38.20	18,000
J115	0.11	13,000	40.83	19,000
J116	0.11	13,000	43.69	20,000
J117	0.11	13,000	41.96	19,000
J118	0.11	13,000	46.44	21,000
J119	0.11	13,000	48.10	22,000
J12	0.11	13,000	62.50	51,000
J120	0.11	13,000	46.74	21,000
J121	0.11	13,000	43.91	20,000
J122	0.11	13,000	37.69	17,000
J123	0.11	13,000	37.99	18,000
J124	0.11	13,000	44.93	20,000
J125	0.11	13,000	41.86	19,000
J128	0.00	6,000	58.45	15,000
J129	0.11	13,000	36.12	17,000
J130	0.11	13,000	39.62	18,000
J131	0.11	13,000	36.29	17,000
J132	0.11	13,000	39.86	18,000
J133	0.11	13,000	41.00	19,000
J134	0.11	13,000	37.95	17,000
J135	0.11	13,000	38.44	18,000
J136	0.11	13,000	40.43	18,000
J137	0.11	6,000	39.78	8,000
J14	0.11	6,000	57.40	14,000
J15	0.07	13,000	56.85	32,000
J152	0.11	13,000	53.96	27,000
J153	0.15	13,000	52.11	26,000
J154	0.11	13,000	51.68	25,000
J155	0.11	13,000	51.39	25,000
J156	0.00	13,000	50.23	24,000
J158	0.00	13,000	51.39	24,000
J16	0.07	13,000	56.65	31,000
J162	0.00	13,000	49.36	23,000
J164	0.00	13,000	48.01	22,000
J166	0.00	13,000	42.90	19,000
J168	0.00	13,000	39.78	18,000
J17	0.07	13,000	56.04	30,000
J170	0.00	13,000	34.41	16,000
J172	0.00	13,000	49.42	23,000
J174	0.15	13,000	50.00	24,000
J176	0.15	13,000	51.00	24,000
J178	0.08	13,000	52.31	26,000
J18	0.07	13,000	55.45	30,000
J180	0.08	13,000	51.67	25,000
J182	0.08	13,000	51.39	24,000
J184	0.08	13,000	51.37	24,000
J186	0.08	13,000	53.06	26,000
J188	0.00	13,000	49.47	23,000
J19	0.10	13,000	54.87	29,000
J20	0.10	13,000	55.18	29,000
J21	0.10	13,000	54.77	29,000
J22	0.10	13,000	54.67	28,000
J23	0.10	13,000	54.09	27,000
J24	0.10	13,000	53.55	27,000
J25	0.10	13,000	53.16	26,000
J26	0.10	13,000	53.21	26,000
J27	0.10	13,000	53.51	27,000
J28	0.10	13,000	53.37	26,000
J29	0.10	13,000	53.51	27,000
J30	0.07	13,000	53.88	27,000
J31	0.07	13,000	54.13	27,000
J32	0.07	13,000	54.48	28,000
J33	0.07	13,000	55.11	28,000
J34	0.07	13,000	55.72	29,000
J35	0.07	13,000	56.14	30,000
J36	0.07	13,000	57.19	32,000
J37	0.08	13,000	54.19	28,000
J38	0.08	13,000	53.96	27,000
J39	0.08	13,000	53.60	27,000
J40	0.11	13,000	62.19	49,000
J41	0.11	13,000	52.74	26,000
J42	0.11	13,000	52.53	26,000
J43	0.11	13,000	51.98	25,000
J44	0.11	13,000	51.60	25,000
J45	0.11	13,000	50.56	24,000
J46	0.11	13,000	61.83	47,000
J48	0.11	13,000	61.35	44,000
J50	0.11	13,000	53.63	27,000
J51	0.11	13,000	53.24	26,000
J52	0.11	13,000	49.43	23,000
J53	0.11	13,000	48.68	22,000
J55	0.11	13,000	49.74	23,000
J56	0.11	13,000	44.60	20,000
J57	0.11	13,000	46.64	21,000
J58	0.11	13,000	45.28	20,000
J59	0.11	13,000	41.41	19,000
J60	0.11	13,000	37.48	17,000
J61	0.11	13,000	37.08	17,000
J62	0.11	13,000	41.15	19,000
J63	0.11	13,000	41.50	19,000
J64	0.11	13,000	38.02	17,000
J65	0.11	13,000	38.10	17,000
J66	0.11	13,000	42.31	19,000
J67	0.11	13,000	42.90	19,000
J68	0.11	13,000	38.42	18,000
J69	0.11	13,000	38.45	18,000
J70	0.11	13,000	41.94	19,000
J71	0.11	13,000	42.43	19,000
J72	0.11	13,000	38.81	18,000
J73	0.11	13,000	39.00	18,000
J74	0.11	13,000	42.25	19,000
J75	0.10	13,000	45.13	20,000
J76	0.10	13,000	49.61	23,000
J77	0.10	13,000	44.41	20,000
J78	0.07	13,000	50.04	23,000
J79	0.07	13,000	46.55	21,000
J80	0.15	13,000	41.71	19,000
J81	0.15	13,000	51.21	25,000
J82	0.15	13,000	51.23	25,000
J83	0.15	13,000	52.53	26,000
J84	0.15	13,000	53.00	27,000
J85	0.15	13,000	36.26	17,000
J86	0.15	13,000	32.61	16,000
J87	0.15	13,000	32.63	16,000
J88	0.15	13,000	36.74	17,000
J89	0.15	13,000	54.00	28,000
J90	0.15	13,000	45.45	21,000
J91	0.15	13,000	52.09	25,000
J92	0.15	13,000	41.52	19,000
J93	0.15	13,000	38.42	18,000
J94	0.08	13,000	51.90	25,000
J95	0.08	13,000	51.46	24,000
J96	0.08	13,000	51.50	25,000
J97	0.08	13,000	43.14	19,000
J98	0.00	13,000	51.24	24,000

Option B - 3 Connections - Break Scenario 1 (Connection 1 Break)

Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	37.19	18,000
J02	0.00	13,000	41.82	20,000
J05	0.07	13,000	45.39	23,000
J06	0.07	13,000	46.71	24,000
J07	0.11	13,000	47.34	24,000
J08	0.11	13,000	47.74	25,000
J09	0.11	13,000	47.66	25,000
J10	0.11	13,000	48.59	26,000
J100	0.15	13,000	38.32	19,000
J101	0.15	13,000	42.23	21,000
J102	0.15	13,000	40.98	20,000
J103	0.15	13,000	37.72	18,000
J109	0.11	13,000	40.22	19,000
J11	0.11	13,000	48.99	26,000
J110	0.11	13,000	40.61	20,000
J111	0.11	13,000	41.48	20,000
J112	0.11	13,000	36.41	18,000
J113	0.11	13,000	28.32	15,000
J114	0.11	13,000	27.10	15,000
J115	0.11	13,000	29.62	16,000
J116	0.11	13,000	32.38	16,000
J117	0.11	13,000	30.71	16,000
J118	0.11	13,000	35.26	17,000
J119	0.11	13,000	36.41	18,000
J12	0.11	13,000	50.94	29,000
J120	0.11	13,000	35.02	17,000
J121	0.11	13,000	32.34	16,000
J122	0.11	13,000	25.92	15,000
J123	0.11	13,000	25.98	15,000
J124	0.11	13,000	32.46	16,000
J125	0.11	13,000	29.90	16,000
J128	0.00	6,000	51.87	13,000
J129	0.11	13,000	25.60	15,000
J130	0.11	13,000	29.19	15,000
J131	0.11	13,000	25.68	15,000
J132	0.11	13,000	29.08	15,000
J133	0.11	13,000	28.58	15,000
J134	0.11	13,000	25.49	15,000
J135	0.11	13,000	25.89	15,000
J136	0.11	13,000	27.79	15,000
J137	0.11	6,000	32.75	7,000
J14	0.11	6,000	50.37	12,000
J15	0.07	13,000	44.44	22,000
J152	0.11	13,000	42.47	20,000
J153	0.15	13,000	42.54	21,000
J154	0.11	13,000	39.26	19,000
J155	0.11	13,000	38.12	18,000
J156	0.00	13,000	34.49	17,000
J158	0.00	13,000	45.64	23,000
J16	0.07	13,000	44.68	22,000
J162	0.00	13,000	40.09	19,000
J164	0.00	13,000	38.65	19,000
J166	0.00	13,000	33.54	17,000
J168	0.00	13,000	30.42	16,000
J17	0.07	13,000	44.42	22,000
J170	0.00	13,000	25.05	14,000
J172	0.00	13,000	40.27	20,000
J174	0.15	13,000	40.97	20,000
J176	0.15	13,000	42.07	20,000
J178	0.08	13,000	44.20	22,000
J18	0.07	13,000	44.83	22,000
J180	0.08	13,000	44.60	22,000
J182	0.08	13,000	45.38	22,000
J184	0.08	13,000	46.10	23,000
J186	0.08	13,000	44.22	22,000
J188	0.00	13,000	40.11	19,000
J19	0.10	13,000	43.87	22,000
J20	0.10	13,000	44.77	22,000
J21	0.10	13,000	44.27	22,000
J22	0.10	13,000	45.14	23,000
J23	0.10	13,000	44.54	22,000
J24	0.10	13,000	43.94	22,000
J25	0.10	13,000	43.49	21,000
J26	0.10	13,000	43.45	21,000
J27	0.10	13,000	43.69	21,000
J28	0.10	13,000	43.45	21,000
J29	0.10	13,000	43.51	21,000
J30	0.07	13,000	43.79	21,000
J31	0.07	13,000	43.96	22,000
J32	0.07	13,000	44.20	22,000
J33	0.07	13,000	44.73	22,000
J34	0.07	13,000	45.23	22,000
J35	0.07	13,000	45.48	23,000
J36	0.07	13,000	46.22	23,000
J37	0.08	13,000	45.11	23,000
J38	0.08	13,000	45.55	23,000
J39	0.08	13,000	45.15	22,000
J40	0.11	13,000	50.48	28,000
J41	0.11	13,000	42.86	21,000
J42	0.11	13,000	42.16	20,000
J43	0.11	13,000	40.51	20,000
J44	0.11	13,000	38.98	19,000
J45	0.11	13,000	35.81	17,000
J46	0.11	13,000	49.96	28,000
J48	0.11	13,000	49.35	27,000
J50	0.11	13,000	41.71	20,000
J51	0.11	13,000	41.36	20,000
J52	0.11	13,000	37.60	18,000
J53	0.11	13,000	36.89	18,000
J55	0.11	13,000	38.43	18,000
J56	0.11	13,000	34.05	17,000
J57	0.11	13,000	36.15	18,000
J58	0.11	13,000	34.84	17,000
J59	0.11	13,000	31.27	16,000
J60	0.11	13,000	27.34	15,000
J61	0.11	13,000	26.94	15,000
J62	0.11	13,000	31.02	16,000
J63	0.11	13,000	31.54	16,000
J64	0.11	13,000	28.06	15,000
J65	0.11	13,000	28.14	15,000
J66	0.11	13,000	32.36	16,000
J67	0.11	13,000	33.10	17,000
J68	0.11	13,000	28.63	15,000
J69	0.11	13,000	28.66	15,000
J70	0.11	13,000	32.15	16,000
J71	0.11	13,000	32.78	16,000
J72	0.11	13,000	29.17	15,000
J73	0.11	13,000	29.36	15,000
J74	0.11	13,000	32.62	16,000
J75	0.10	13,000	35.47	17,000
J76	0.10	13,000	39.89	19,000
J77	0.10	13,000	34.54	17,000
J78	0.07	13,000	40.04	19,000
J79	0.07	13,000	36.34	18,000
J80	0.15	13,000	32.66	16,000
J81	0.15	13,000	42.22	21,000
J82	0.15	13,000	42.05	21,000
J83	0.15	13,000	43.11	21,000
J84	0.15	13,000	43.22	21,000
J85	0.15	13,000	26.38	15,000
J86	0.15	13,000	22.70	14,000
J87	0.15	13,000	22.71	14,000
J88	0.15	13,000	26.80	15,000
J89	0.15	13,000	44.03	22,000
J90	0.15	13,000	35.73	18,000
J91	0.15	13,000	42.54	21,000
J92	0.15	13,000	32.23	16,000
J93	0.15	13,000	29.24	15,000
J94	0.08	13,000	44.30	22,000
J95	0.08	13,000	44.52	22,000
J96	0.08	13,000	45.02	22,000
J97	0.08	13,000	35.66	17,000
J98	0.00	13,000	45.23	22,000

163401660 - Barrhaven Conservancy
Model Results - Reliability Analysis (AVDY+FF)

Option A - 2 Connections - Break Scenario 2 (Connection 2 Break)					Option A - 2 Connections - Break Scenario 2 (Connection 2 Break)					Option B - 3 Connections - Break Scenario 2 (Connection 2 Break)				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)	Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)	Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	57.11	37,000	J01	0.07	13,000	56.97	37,000	J01	0.07	13,000	49.66	25,000
J02	0.00	13,000	56.77	35,000	J02	0.00	13,000	56.63	34,000	J02	0.00	13,000	49.38	25,000
J05	0.07	13,000	56.55	33,000	J05	0.07	13,000	56.40	33,000	J05	0.07	13,000	49.29	24,000
J06	0.07	13,000	56.19	32,000	J06	0.07	13,000	56.05	32,000	J06	0.07	13,000	48.21	23,000
J07	0.11	13,000	55.73	31,000	J07	0.11	13,000	55.59	31,000	J07	0.11	13,000	46.00	22,000
J08	0.11	13,000	54.99	30,000	J08	0.11	13,000	54.85	30,000	J08	0.11	13,000	42.98	20,000
J09	0.11	13,000	53.96	29,000	J09	0.11	13,000	53.82	29,000	J09	0.11	13,000	40.35	19,000
J10	0.11	13,000	53.60	28,000	J10	0.11	13,000	53.46	28,000	J10	0.11	13,000	37.71	18,000
J100	0.15	13,000	45.49	21,000	J100	0.15	13,000	45.35	21,000	J100	0.15	13,000	40.77	19,000
J101	0.15	13,000	49.70	24,000	J101	0.15	13,000	49.55	24,000	J101	0.15	13,000	44.70	21,000
J102	0.15	13,000	48.38	23,000	J102	0.15	13,000	48.23	23,000	J102	0.15	13,000	43.44	20,000
J103	0.15	13,000	44.80	21,000	J103	0.15	13,000	44.66	21,000	J103	0.15	13,000	40.16	19,000
J109	0.11	13,000	48.22	23,000	J109	0.11	13,000	48.08	23,000	J109	0.11	13,000	42.60	20,000
J11	0.11	13,000	53.00	28,000	J11	0.11	13,000	52.85	27,000	J11	0.11	13,000	35.63	17,000
J110	0.11	13,000	48.80	23,000	J110	0.11	13,000	48.65	23,000	J110	0.11	13,000	42.99	20,000
J111	0.11	13,000	50.13	25,000	J111	0.11	13,000	49.98	25,000	J111	0.11	13,000	43.87	21,000
J112	0.11	13,000	45.74	21,000	J112	0.11	13,000	45.60	21,000	J112	0.11	13,000	38.79	18,000
J113	0.11	13,000	37.90	18,000	J113	0.11	13,000	37.76	18,000	J113	0.11	13,000	30.71	16,000
J114	0.11	13,000	36.79	17,000	J114	0.11	13,000	36.65	17,000	J114	0.11	13,000	29.48	15,000
J115	0.11	13,000	39.42	18,000	J115	0.11	13,000	39.28	18,000	J115	0.11	13,000	32.01	16,000
J116	0.11	13,000	42.28	20,000	J116	0.11	13,000	42.14	20,000	J116	0.11	13,000	34.76	17,000
J117	0.11	13,000	40.55	19,000	J117	0.11	13,000	40.41	19,000	J117	0.11	13,000	33.10	16,000
J118	0.11	13,000	45.03	21,000	J118	0.11	13,000	44.89	21,000	J118	0.11	13,000	37.64	18,000
J119	0.11	13,000	46.69	22,000	J119	0.11	13,000	46.55	22,000	J119	0.11	13,000	38.80	18,000
J12	0.11	13,000	56.26	48,000	J12	0.11	13,000	62.94	52,000	J12	0.11	13,000	42.65	21,000
J120	0.11	13,000	45.33	21,000	J120	0.11	13,000	45.19	21,000	J120	0.11	13,000	37.41	18,000
J121	0.11	13,000	42.50	20,000	J121	0.11	13,000	42.36	20,000	J121	0.11	13,000	34.73	17,000
J122	0.11	13,000	36.27	17,000	J122	0.11	13,000	36.13	17,000	J122	0.11	13,000	28.31	15,000
J123	0.11	13,000	36.58	17,000	J123	0.11	13,000	36.44	17,000	J123	0.11	13,000	28.37	15,000
J124	0.11	13,000	43.52	20,000	J124	0.11	13,000	43.37	20,000	J124	0.11	13,000	34.85	17,000
J125	0.11	13,000	40.44	19,000	J125	0.11	13,000	40.30	19,000	J125	0.11	13,000	32.29	16,000
J128	0.00	6,000	56.92	15,000	J128	0.00	6,000	56.77	15,000	J128	0.00	6,000	54.54	14,000
J129	0.11	13,000	34.70	17,000	J129	0.11	13,000	34.56	17,000	J129	0.11	13,000	27.99	15,000
J130	0.11	13,000	38.21	18,000	J130	0.11	13,000	38.07	18,000	J130	0.11	13,000	31.58	16,000
J131	0.11	13,000	34.88	17,000	J131	0.11	13,000	34.74	17,000	J131	0.11	13,000	28.06	15,000
J132	0.11	13,000	38.45	18,000	J132	0.11	13,000	38.31	18,000	J132	0.11	13,000	31.47	16,000
J133	0.11	13,000	39.59	18,000	J133	0.11	13,000	39.45	18,000	J133	0.11	13,000	30.97	16,000
J134	0.11	13,000	36.54	17,000	J134	0.11	13,000	36.40	17,000	J134	0.11	13,000	27.87	15,000
J135	0.11	13,000	37.03	17,000	J135	0.11	13,000	36.89	17,000	J135	0.11	13,000	28.27	15,000
J136	0.11	13,000	39.02	18,000	J136	0.11	13,000	38.88	18,000	J136	0.11	13,000	30.18	16,000
J137	0.11	6,000	38.24	8,000	J137	0.11	6,000	38.10	8,000	J137	0.11	6,000	35.41	8,000
J14	0.11	6,000	55.87	14,000	J14	0.11	6,000	55.73	14,000	J14	0.11	6,000	53.04	13,000
J15	0.07	13,000	55.63	32,000	J15	0.07	13,000	55.49	32,000	J15	0.07	13,000	47.65	23,000
J152	0.11	13,000	51.00	25,000	J152	0.11	13,000	50.86	25,000	J152	0.11	13,000	42.10	19,000
J153	0.15	13,000	50.72	25,000	J153	0.15	13,000	50.58	25,000	J153	0.15	13,000	45.05	21,000
J154	0.11	13,000	50.27	25,000	J154	0.11	13,000	50.12	25,000	J154	0.11	13,000	41.65	19,000
J155	0.11	13,000	49.98	24,000	J155	0.11	13,000	49.84	24,000	J155	0.11	13,000	40.50	19,000
J156	0.00	13,000	48.82	23,000	J156	0.00	13,000	48.68	23,000	J156	0.00	13,000	36.88	17,000
J158	0.00	13,000	49.98	24,000	J158	0.00	13,000	49.84	24,000	J158	0.00	13,000	48.00	23,000
J16	0.07	13,000	55.36	31,000	J16	0.07	13,000	55.22	31,000	J16	0.07	13,000	47.60	23,000
J162	0.00	13,000	47.94	23,000	J162	0.00	13,000	47.80	23,000	J162	0.00	13,000	42.47	20,000
J164	0.00	13,000	46.60	22,000	J164	0.00	13,000	46.45	22,000	J164	0.00	13,000	41.03	19,000
J166	0.00	13,000	41.49	19,000	J166	0.00	13,000	41.35	19,000	J166	0.00	13,000	35.93	17,000
J168	0.00	13,000	38.37	18,000	J168	0.00	13,000	38.23	18,000	J168	0.00	13,000	32.81	16,000
J17	0.07	13,000	54.70	30,000	J17	0.07	13,000	54.56	30,000	J17	0.07	13,000	47.16	23,000
J170	0.00	13,000	33.00	16,000	J170	0.00	13,000	32.86	16,000	J170	0.00	13,000	27.44	15,000
J172	0.00	13,000	48.01	23,000	J172	0.00	13,000	47.87	23,000	J172	0.00	13,000	42.66	20,000
J174	0.15	13,000	48.59	23,000	J174	0.15	13,000	48.45	23,000	J174	0.15	13,000	43.36	20,000
J176	0.15	13,000	49.59	24,000	J176	0.15	13,000	49.44	24,000	J176	0.15	13,000	44.46	21,000
J178	0.08	13,000	50.90	25,000	J178	0.08	13,000	50.76	25,000	J178	0.08	13,000	46.58	22,000
J18	0.07	13,000	54.07	29,000	J18	0.07	13,000	53.93	29,000	J18	0.07	13,000	47.41	23,000
J180	0.08	13,000	50.26	24,000	J180	0.08	13,000	50.12	24,000	J180	0.08	13,000	46.97	22,000
J182	0.08	13,000	49.98	24,000	J182	0.08	13,000	49.83	24,000	J182	0.08	13,000	47.74	23,000
J184	0.08	13,000	49.96	24,000	J184	0.08	13,000	49.82	24,000	J184	0.08	13,000	48.44	23,000
J186	0.08	13,000	51.65	26,000	J186	0.08	13,000	51.50	26,000	J186	0.08	13,000	46.60	22,000
J188	0.00	13,000	48.06	23,000	J188	0.00	13,000	47.91	23,000	J188	0.00	13,000	42.49	20,000
J19	0.10	13,000	53.48	29,000	J19	0.10	13,000	53.34	29,000	J19	0.10	13,000	46.39	22,000
J20	0.10	13,000	53.78	29,000	J20	0.10	13,000	53.64	29,000	J20	0.10	13,000	47.26	23,000
J21	0.10	13,000	53.36	28,000	J21	0.10	13,000	53.22	28,000	J21	0.10	13,000	46.74	22,000
J22	0.10	13,000	53.26	28,000	J22	0.10	13,000	53.12	28,000	J22	0.10	13,000	47.59	23,000
J23	0.10	13,000	52.67	27,000	J23	0.10	13,000	52.52	27,000	J23	0.10	13,000	46.99	23,000
J24	0.10	13,000	52.11	26,000	J24	0.10	13,000	51.97	26,000	J24	0.10	13,000	46.37	22,000
J25	0.10	13,000	51.70	26,000	J25	0.10	13,000	51.56	26,000	J25	0.10	13,000	45.91	22,000
J26	0.10	13,000	51.73	26,000	J26	0.10	13,000	51.59	26,000	J26	0.10	13,000	45.85	22,000
J27	0.10	13,000	52.01	26,000	J27	0.10	13,000	51.87	26,000	J27	0.10	13,000	46.07	22,000
J28	0.10	13,000	51.84	26,000	J28	0.10	13,000	51.70	26,000	J28	0.10	13,000	45.80	22,000
J29	0.10	13,000	51.96	26,000	J29	0.10	13,000	51.81	26,000	J29	0.10	13,000	45.84	22,000
J30	0.07	13,000	52.30	27,000	J30	0.07	13,000	52.16	27,000	J30	0.07	13,000	46.09	22,000
J31	0.07	13,000	52.53	27,000	J31	0.07	13,000	52.39	27,000	J31	0.07	13,000	46.23	22,000
J32	0.07	13,000	52.85	27,000	J32	0.07	13,000	52.71	27,000	J32	0.07	13,000	46.41	22,000
J33	0.07	13,000	53.45	28,000	J33	0.07	13,000	53.31	28,000	J33	0.07	13,000	46.89	22,000
J34	0.07	13,000	54.03	29,000	J34	0.07	13,000	53.89	29,000	J34	0.07	13,000	47.33	23,000
J35	0.07	13,000	54.36	29,000	J35	0.07	13,000	54.22	29,000	J35	0.07	13,000	47.40	23,000
J36	0.07	13,000	55.24	30,000	J36	0.07	13,000	55.10	30,000	J36	0.07	13,000	47.82	23,000
J37	0.08	13,000	52.78	27,000	J37	0.08	13,000	52.64	27,000	J37	0.08	13,000	47.55	23,000
J38	0.08	13,000	52.55	27,000	J38	0.08	13,000	52.41	27,000	J38	0.08	13,000	47.97	23,000
J39	0.08	13,000	52.19	27,000	J39	0.08	13,000	52.05	27,000	J39	0.08	13,000	47.55	23,000
J40	0.11	13,000	51.76	26,000	J40	0.11	13,000	51.62	26,000	J40	0.11	13,000	30.20	16,000
J41	0.11	13,000	51.33	26,000	J41	0.11	13,000	51.19	26,000	J41	0.11	13,000	45.25	21,000
J42	0.11	13,000	51.12	25,000	J42	0.11	13,000	50.98	25,000	J42	0.11	13,000	44.55	21,000
J43	0.11	13,000	50.57	25,000	J43	0.11	13,000	50.43	25,000	J43	0.11	13,000	42.89	20,000
J44	0.11	13,000	50.19	25,000	J44	0.11	13,000	50.05	24,000	J44	0.11	13,000	41.36	19,000
J45	0.11	13,000	49.15	24,000	J45	0.11	13,000	49.01	24,000	J45	0.11	13,000	38.20	18,000
J46	0.11	13,000	52.17	27,000	J46	0.11	13,000	52.03	27,000	J46	0.11	13,000	31.97	16,000
J48	0.11	13,000	52.67	27,000	J48	0.11	13,000	52.53	27,000	J48	0.11	13,000	34.20	17,000
J50	0.11	13,000	45.99	21,000	J50	0.11	13,000	45.85	21,000	J50	0.11	13,000	29.61	15,000
J51	0.11	13,000	45.77	21,000	J51	0.11	13,000	45.63	21,000	J51	0.11	13,000	29.70	15,000
J52	0.11	13,000	44.16	20,000	J52	0.11	13,000	44.02	20,000	J52	0.11	13,000	31.67	16,000
J53	0.11	13,000	43.54	20,000	J53	0.11	13,000	43.40	20,000	J53	0.11	13,000	31.29	16,000
J55	0.11	13,000	47.09	22,000	J55	0.11	13,000	46.94	22,000	J55	0.11	13,000	38.84	18,000
J56	0.11	13,000	42.87	20,000	J56	0.11	13,000	42.73	20,000	J56	0.11	13,000	36.11	17,000
J57	0.11	13,000	44.94	21,000	J57	0.11	13,000	44.80	21,000	J57	0.11	13,000	38.24	18,000
J58	0.11	13,000	43.59	20,000	J58	0.11	13,000	43.45	20,000	J58	0.11	13,000	36.96	17,000
J59	0.11	13,000	39.82	18,000	J59	0.11	13,000	39.68	18,000	J59	0.11	13,000	33.55	16,000
J60	0.11	13,000	35.89	17,000	J60	0.11	13,000	35.75	17,000	J60	0.11	13,000	29.63	15,000
J61	0.11	13,000	35.49	17,000	J61	0.11	13,000	35.35	17,000	J61	0.11	13,000	29.23	15,000
J62	0.11	13,000	39.56	18,000	J62	0.11	13,000	39.42	18,000	J62	0.11	13,000	33.31	16,000
J63	0.11	13,000	39.96	18,000	J63	0.11	13,000	39.82	18,000	J63	0.11	13,000	33.88	16,000
J64	0.11	13,000	36.48	17,000	J64	0.11	13,000	36.34	17,000	J64	0.11	13,000	30.40	16,000
J65	0.11	13,000	36.57	17,000	J65	0.11	13,000	36.42	17,000	J65	0.11	13,000	30.49	16,000
J66	0.11	13,000	40.78	19,000	J66	0.11	13,000	40.64	19,000	J66	0.11	13,000	34.71	17,000
J67	0.11	13,000	41.40	19,000	J67	0.11	13,000	41.26	19,000	J67	0.11	13,000	35.49	17,000
J68	0.11	13,000	36.93	17,000	J68	0.11	13,000	36.79	17,000	J68	0.11	13,000	31.02	16,000
J69	0.11	13,000	36.96	17,000	J69	0.11	13,000	36.82	17,000	J69	0.11	13,000	31.05	16,000
J70	0.11	13,000	40.45	19,000	J70	0.11	13,000	40.31	19,000	J70	0.11	13,000	34.55	17,000
J71	0.11	13,000	40.98	19,000	J71	0.11	13,000	40.83	19,000	J71	0.11	13,000	35.21	17,000
J72	0.11	13,000	37.37	17,000	J72	0.11	13,000	37.22	17,000	J72	0.11	13,000	31.60	16,000
J73	0.11	13,000	37.55	17,000	J73	0.11	13,000	37.41	17,000	J73	0.11	13,000	31.79	16,000
J74	0.11	13,000	40.80	19,000	J74	0.11	13,000	40.66	19,000	J74	0.11	13,000	35.05	17,000
J75	0.10	13,000	43.68	20,000	J75	0.10	13,000	43.54	20,000	J75	0.10	13,000	37.91	18,000
J76	0.10	13,000	48.15	23,000	J76	0.10	13,000	48.01	23,000	J76	0.10	13,000	42.33	20,000
J77	0.10	13,000	42.93	20,000	J77	0.10	13,000	42.79	20,000	J77	0.10	13,000	36.96	18,000
J78	0.07	13,000	48.53	23,000	J78	0.07	13,000	48.38	23,000	J78	0.07	13,000	42.42	20,000
J79	0.07	13,000	44.96	21,000	J79	0.07	13,000	44.82	21,000	J79	0.07	13,000	38.62	18,000
J80	0.15	13,000	40.31	19,000	J80	0.15	13,000	40.17	19,000	J80	0.15	13,000	35.13	17,000
J81	0.15	13,000	49.81	25,000	J81	0.15	13,000	49.67	24,000	J81	0.15	13,000	44.69	21,000
J82	0.15	13,000	49.84	25,000	J82	0.15	13,000	49.70	24,000	J82	0.15	13,000	44.53	21,000
J83	0.15	13,000	51.14	26,000	J83	0.15	13,000	51.00	26,000	J83	0.15	13,000	45.60	22,000
J84	0.15	13,000	51.61	26,000	J84	0.15	13,000	51.47	26,000	J84	0.15	13,000	45.74	22,000
J85	0.15	13,000	34.88	17,000	J85	0.15	13,000	34.74	17,000	J85	0.15	13,000	28.91	15,000
J86	0.15	13,000	31.23	16,000	J86	0.15	13,000	31.09	16,000	J86	0.15	13,000	25.24	14,000
J87	0.15	13,000	31.25	16,000	J87	0.15	13,000	31.11	16,000	J87	0.15	13,000	25.25	14,000
J88	0.15	13,000	35.36	17,000	J88	0.15	13,000	35.21	17,000	J88	0.15	13,000	29.34	15,000
J89	0.15	13,000	52.62	27,000	J89	0.15	13,000	52.47	27,000	J89	0.15	13,000	46.56	22,000
J90	0.15	13,000	44.06	20,000	J90	0.15	13,000	43.92	20,000	J90	0.15	13,000	38.24	18,000
J91	0.15	13,000	50.70	25,000	J91	0.15	13,000	50.56	25,000	J91	0.15	13,000	45.04	21,000
J92	0.15	13,000	40.13	19,000	J92	0.15	13,000	39.99	19,000	J92	0.15	13,000	34.71	17,000
J93	0.15	13,000	37.02	17,000	J93	0.15	13,000	36.88	17,000	J93	0.15	13,000	31.72	16,000
J94	0.08	13,000	50.49	25,000	J94	0.08	13,000	50.35	25,000	J94	0.08	13,000	46.69	22,000
J95	0.08	13,000	50.05	24,000	J95	0.08	13,000	49.91	24,000	J95	0.08	13,000	46.90	22,000
J96	0.08	13,000	50.09	24,000	J96	0.08	13,000	49.95	24,000	J96	0.08	13,000	47.40	23,000
J97	0.08	13,000	41.72	19,000	J97	0.08	13,000	41.58	19,000	J97	0.08	13,000	38.04	18,000
J98	0.00	13,000	49.83	24,000	J98	0.00	13,000	49.69	24,000	J98	0.00	13,000	47.60	23,000

163401660 - Barrhaven Conservancy

Model Results - Reliability Analysis (AVDY+FF)

Option A - 2 Connections - Break Scenario 3				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	58.88	64,000
J02	0.00	13,000	59.33	64,000
J05	0.07	13,000	59.72	64,000
J06	0.07	13,000	59.80	64,000
J07	0.11	13,000	59.91	64,000
J08	0.11	13,000	59.74	64,000
J09	0.11	13,000	59.21	65,000
J10	0.11	13,000	59.45	66,000
J100	0.15	13,000	35.77	17,000
J101	0.15	13,000	43.09	21,000
J102	0.15	13,000	40.83	20,000
J103	0.15	13,000	33.93	17,000
J109	0.11	13,000	37.06	18,000
J11	0.11	13,000	59.34	67,000
J110	0.11	13,000	37.31	18,000
J111	0.11	13,000	38.13	18,000
J112	0.11	13,000	33.57	17,000
J113	0.11	13,000	25.70	15,000
J114	0.11	13,000	24.58	14,000
J115	0.11	13,000	27.21	15,000
J116	0.11	13,000	30.06	16,000
J117	0.11	13,000	28.33	15,000
J118	0.11	13,000	32.81	16,000
J119	0.11	13,000	34.45	17,000
J12	0.11	13,000	59.27	73,000
J120	0.11	13,000	33.09	17,000
J121	0.11	13,000	30.27	16,000
J122	0.11	13,000	24.03	14,000
J123	0.11	13,000	24.33	14,000
J124	0.11	13,000	31.26	16,000
J125	0.11	13,000	28.20	15,000
J128	0.00	6,000	53.34	13,000
J129	0.11	13,000	22.43	14,000
J130	0.11	13,000	25.93	15,000
J131	0.11	13,000	22.60	14,000
J132	0.11	13,000	26.18	15,000
J133	0.11	13,000	27.33	15,000
J134	0.11	13,000	24.28	14,000
J135	0.11	13,000	24.77	14,000
J136	0.11	13,000	26.76	15,000
J137	0.11	6,000	34.66	8,000
J14	0.11	6,000	52.29	12,000
J15	0.07	13,000	58.83	55,000
J152	0.11	13,000	54.93	34,000
J153	0.15	13,000	52.72	31,000
J154	0.11	13,000	38.00	18,000
J155	0.11	13,000	37.72	18,000
J156	0.00	13,000	36.56	18,000
J158	0.00	13,000	36.83	18,000
J16	0.07	13,000	58.57	52,000
J162	0.00	13,000	37.17	18,000
J164	0.00	13,000	35.57	17,000
J166	0.00	13,000	30.46	16,000
J168	0.00	13,000	27.34	15,000
J17	0.07	13,000	57.92	48,000
J170	0.00	13,000	21.97	14,000
J172	0.00	13,000	37.74	18,000
J174	0.15	13,000	39.29	19,000
J176	0.15	13,000	38.64	19,000
J178	0.08	13,000	38.14	18,000
J18	0.07	13,000	57.29	46,000
J180	0.08	13,000	37.32	18,000
J182	0.08	13,000	36.92	18,000
J184	0.08	13,000	36.85	18,000
J186	0.08	13,000	39.12	19,000
J188	0.00	13,000	37.03	18,000
J19	0.10	13,000	56.71	44,000
J20	0.10	13,000	57.00	43,000
J21	0.10	13,000	56.53	41,000
J22	0.10	13,000	56.33	40,000
J23	0.10	13,000	55.81	38,000
J24	0.10	13,000	55.29	36,000
J25	0.10	13,000	54.90	35,000
J26	0.10	13,000	54.94	35,000
J27	0.10	13,000	55.24	36,000
J28	0.10	13,000	55.09	35,000
J29	0.10	13,000	55.22	36,000
J30	0.07	13,000	55.58	37,000
J31	0.07	13,000	55.82	37,000
J32	0.07	13,000	56.16	39,000
J33	0.07	13,000	56.78	40,000
J34	0.07	13,000	57.38	43,000
J35	0.07	13,000	57.76	46,000
J36	0.07	13,000	58.73	51,000
J37	0.08	13,000	55.67	38,000
J38	0.08	13,000	38.93	19,000
J39	0.08	13,000	39.08	19,000
J40	0.11	13,000	59.28	72,000
J41	0.11	13,000	38.96	19,000
J42	0.11	13,000	38.84	19,000
J43	0.11	13,000	38.30	18,000
J44	0.11	13,000	37.93	18,000
J45	0.11	13,000	36.89	18,000
J46	0.11	13,000	59.30	70,000
J48	0.11	13,000	59.32	68,000
J50	0.11	13,000	52.03	30,000
J51	0.11	13,000	51.72	29,000
J52	0.11	13,000	49.09	25,000
J53	0.11	13,000	48.40	25,000
J55	0.11	13,000	50.82	27,000
J56	0.11	13,000	46.24	23,000
J57	0.11	13,000	48.29	24,000
J58	0.11	13,000	46.93	23,000
J59	0.11	13,000	43.11	21,000
J60	0.11	13,000	39.18	19,000
J61	0.11	13,000	38.78	18,000
J62	0.11	13,000	42.85	20,000
J63	0.11	13,000	43.22	21,000
J64	0.11	13,000	39.74	19,000
J65	0.11	13,000	39.82	19,000
J66	0.11	13,000	44.03	21,000
J67	0.11	13,000	44.63	21,000
J68	0.11	13,000	40.15	19,000
J69	0.11	13,000	40.18	19,000
J70	0.11	13,000	43.67	21,000
J71	0.11	13,000	44.16	21,000
J72	0.11	13,000	40.55	19,000
J73	0.11	13,000	40.73	19,000
J74	0.11	13,000	43.99	21,000
J75	0.10	13,000	46.89	23,000
J76	0.10	13,000	51.38	28,000
J77	0.10	13,000	46.18	23,000
J78	0.07	13,000	51.79	29,000
J79	0.07	13,000	48.26	24,000
J80	0.15	13,000	42.72	21,000
J81	0.15	13,000	46.07	23,000
J82	0.15	13,000	48.66	26,000
J83	0.15	13,000	52.47	31,000
J84	0.15	13,000	54.19	34,000
J85	0.15	13,000	37.63	18,000
J86	0.15	13,000	34.03	17,000
J87	0.15	13,000	34.07	17,000
J88	0.15	13,000	38.21	18,000
J89	0.15	13,000	55.51	38,000
J90	0.15	13,000	46.87	24,000
J91	0.15	13,000	53.37	32,000
J92	0.15	13,000	42.69	21,000
J93	0.15	13,000	39.51	19,000
J94	0.08	13,000	37.11	18,000
J95	0.08	13,000	36.78	18,000
J96	0.08	13,000	36.88	18,000
J97	0.08	13,000	28.54	15,000
J98	0.00	13,000	36.66	18,000

Option A - 2 Connections - Break Scenario 3				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	62.42	67,000
J02	0.00	13,000	62.99	66,000
J05	0.07	13,000	63.49	66,000
J06	0.07	13,000	63.66	66,000
J07	0.11	13,000	63.88	67,000
J08	0.11	13,000	63.84	67,000
J09	0.11	13,000	63.41	68,000
J10	0.11	13,000	63.79	69,000
J100	0.15	13,000	39.59	18,000
J101	0.15	13,000	46.91	22,000
J102	0.15	13,000	44.65	21,000
J103	0.15	13,000	37.75	18,000
J109	0.11	13,000	40.88	19,000
J11	0.11	13,000	63.80	71,000
J110	0.11	13,000	41.13	19,000
J111	0.11	13,000	41.95	19,000
J112	0.11	13,000	37.39	17,000
J113	0.11	13,000	29.52	15,000
J114	0.11	13,000	28.40	15,000
J115	0.11	13,000	31.03	16,000
J116	0.11	13,000	33.88	16,000
J117	0.11	13,000	32.15	16,000
J118	0.11	13,000	36.64	17,000
J119	0.11	13,000	38.27	18,000
J12	0.11	13,000	64.08	77,000
J120	0.11	13,000	36.91	17,000
J121	0.11	13,000	34.09	16,000
J122	0.11	13,000	27.86	15,000
J123	0.11	13,000	28.15	15,000
J124	0.11	13,000	35.09	17,000
J125	0.11	13,000	32.02	16,000
J128	0.00	6,000	55.37	13,000
J129	0.11	13,000	26.25	15,000
J130	0.11	13,000	29.75	15,000
J131	0.11	13,000	26.43	15,000
J132	0.11	13,000	30.00	15,000
J133	0.11	13,000	31.15	16,000
J134	0.11	13,000	28.10	15,000
J135	0.11	13,000	28.59	15,000
J136	0.11	13,000	30.58	16,000
J137	0.11	6,000	36.70	8,000
J14	0.11	6,000	54.33	13,000
J15	0.07	13,000	62.63	57,000
J152	0.11	13,000	58.85	36,000
J153	0.15	13,000	56.54	33,000
J154	0.11	13,000	41.83	19,000
J155	0.11	13,000	41.54	19,000
J156	0.00	13,000	40.39	19,000
J158	0.00	13,000	40.66	19,000
J16	0.07	13,000	62.38	54,000
J162	0.00	13,000	40.99	19,000
J164	0.00	13,000	39.39	18,000
J166	0.00	13,000	34.28	17,000
J168	0.00	13,000	31.16	16,000
J17	0.07	13,000	61.74	50,000
J170	0.00	13,000	25.79	15,000
J172	0.00	13,000	41.56	19,000
J174	0.15	13,000	43.12	20,000
J176	0.15	13,000	42.46	19,000
J178	0.08	13,000	41.97	19,000
J18	0.07	13,000	61.11	48,000
J180	0.08	13,000	41.14	19,000
J182	0.08	13,000	40.74	19,000
J184	0.08	13,000	40.67	19,000
J186	0.08	13,000	42.94	20,000
J188	0.00	13,000	40.85	19,000
J19	0.10	13,000	60.54	45,000
J20	0.10	13,000	60.82	45,000
J21	0.10	13,000	60.35	43,000
J22	0.10	13,000	60.15	42,000
J23	0.10	13,000	59.63	40,000
J24	0.10	13,000	59.11	38,000
J25	0.10	13,000	58.72	37,000
J26	0.10	13,000	58.77	37,000
J27	0.10	13,000	59.07	37,000
J28	0.10	13,000	58.92	37,000
J29	0.10	13,000	59.05	37,000
J30	0.07	13,000	59.41	38,000
J31	0.07	13,000	59.65	39,000
J32	0.07	13,000	59.98	40,000
J33	0.07	13,000	60.61	42,000
J34	0.07	13,000	61.21	45,000
J35	0.07	13,000	61.59	47,000
J36	0.07	13,000	62.58	53,000
J37	0.08	13,000	59.50	40,000
J38	0.08	13,000	42.75	20,000
J39	0.08	13,000	42.90	20,000
J40	0.11	13,000	64.01	75,000
J41	0.11	13,000	42.78	20,000
J42	0.11	13,000	42.66	19,000
J43	0.11	13,000	42.13	19,000
J44	0.11	13,000	41.75	19,000
J45	0.11	13,000	40.71	19,000
J46	0.11	13,000	63.94	74,000
J48	0.11	13,000	63.84	72,000
J50	0.11	13,000	56.45	31,000
J51	0.11	13,000	56.14	31,000
J52	0.11	13,000	53.26	27,000
J53	0.11	13,000	52.57	26,000
J55	0.11	13,000	54.72	28,000
J56	0.11	13,000	50.06	24,000
J57	0.11	13,000	52.12	25,000
J58	0.11	13,000	50.76	24,000
J59	0.11	13,000	46.93	21,000
J60	0.11	13,000	43.01	19,000
J61	0.11	13,000	42.60	19,000
J62	0.11	13,000	46.67	21,000
J63	0.11	13,000	47.05	22,000
J64	0.11	13,000	43.57	20,000
J65	0.11	13,000	43.65	20,000
J66	0.11	13,000	47.86	22,000
J67	0.11	13,000	48.45	22,000
J68	0.11	13,000	43.98	20,000
J69	0.11	13,000	44.01	20,000
J70	0.11	13,000	47.50	22,000
J71	0.11	13,000	47.99	22,000
J72	0.11	13,000	44.37	20,000
J73	0.11	13,000	44.55	20,000
J74	0.11	13,000	47.81	22,000
J75	0.10	13,000	50.71	24,000
J76	0.10	13,000	55.21	29,000
J77	0.10	13,000	50.00	24,000
J78	0.07	13,000	55.62	30,000
J79	0.07	13,000	52.08	25,000
J80	0.15	13,000	46.54	22,000
J81	0.15	13,000	49.89	24,000
J82	0.15	13,000	52.49	27,000
J83	0.15	13,000	56.29	32,000
J84	0.15	13,000	58.01	36,000
J85	0.15	13,000	41.45	19,000
J86	0.15	13,000	37.85	18,000
J87	0.15	13,000	37.90	18,000
J88	0.15	13,000	42.03	19,000
J89	0.15	13,000	59.33	40,000
J90	0.15	13,000	50.69	25,000
J91	0.15	13,000	57.20	33,000
J92	0.15	13,000	46.51	21,000
J93	0.15	13,000	43.33	20,000
J94	0.08	13,000	40.94	19,000
J95	0.08	13,000	40.61	19,000
J96	0.08	13,000	40.70	19,000
J97	0.08	13,000	32.37	16,000
J98	0.00	13,000	40.49	18,000

Option B - 3 Connections - Break Scenario 3				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	54.26	34,000
J02	0.00	13,000	55.02	35,000
J05	0.07	13,000	55.82	36,000
J06	0.07	13,000	55.83	36,000
J07	0.11	13,000	55.59	35,000
J08	0.11	13,000	55.08	34,000
J09	0.11	13,000	54.37	34,000
J10	0.11	13,000	54.48	34,000
J100	0.15	13,000	43.83	21,000
J101	0.15	13,000	50.19	27,000
J102	0.15	13,000	49.36	26,000
J103	0.15	13,000	43.12	21,000
J109	0.11	13,000	46.67	23,000
J11	0.11	13,000	54.34	34,000
J110	0.11	13,000	46.79	23,000
J111	0.11	13,000	47.31	23,000
J112	0.11	13,000	42.15	20,000
J113	0.11	13,000	34.06	17,000
J114	0.11	13,000	32.83	16,000
J115	0.11	13,000	35.36	17,000
J116	0.11	13,000	38.11	18,000
J117	0.11	13,000	36.45	18,000
J118	0.11	13,000	40.99	19,000
J119	0.11	13,000	42.14	20,000
J12	0.11	13,000	54.60	35,000
J120	0.11	13,000	40.75	19,000
J121	0.11	13,000	38.07	18,000
J122	0.11	13,000	31.65	16,000
J123	0.11	13,000	31.71	16,000
J124	0.11	13,000	38.19	18,000
J125	0.11	13,000	35.63	17,000
J128	0.00	6,000	54.39	14,000
J129	0.11	13,000	31.31	16,000
J130	0.11	13,000	34.90	17,000
J131	0.11	13,000	31.39	16,000
J132	0.11	13,000	34.79	17,000
J133	0.11	13,000	34.31	17,000
J134	0.11	13,000	31.21	16,000
J135	0.11	13,000	31.61	16,000
J136	0.11	13,000	33.51	17,000
J137	0.11	6,000	35.26	8,000
J14	0.11	6,000	52.89	13,000
J15	0.07	13,000	54.10	32,000
J152	0.11	13,000	50.98	27,000
J153	0.15	13,000	51.15	28,000
J154	0.11	13,000	44.98	22,000
J155	0.11	13,000	43.84	21,000
J156	0.00	13,000	40.22	19,000
J158	0.00	13,000	49.63	25,000
J16	0.07	13,000	53.94	32,000
J162	0.00	13,000	46.88	23,000
J164	0.00	13,000	45.22	22,000
J166	0.00	13,000	40.11	19,000
J168	0.00	13,000	36.99	18,000
J17	0.07	13,000	53.35	31,000
J170	0.00	13,000	31.62	16,000
J172	0.00	13,000	47.47	24,000
J174	0.15	13,000	48.90	25,000
J176	0.15	13,000	48.63	25,000
J178	0.08	13,000	49.15	25,000
J18	0.07	13,000	53.36	31,000
J180	0.08	13,000	49.12	25,000
J182	0.08	13,000	49.57	25,000
J184	0.08	13,000	50.09	26,000
J186	0.08	13,000	49.53	26,000
J188	0.00	13,000	46.68	23,000
J19	0.10	13,000	52.10	29,000
J20	0.10	13,000	52.67	30,000
J21	0.10	13,000	51.58	28,000
J22	0.10	13,000	51.54	28,000
J23	0.10	13,000	51.54	28,000
J24	0.10	13,000	51.25	27,000
J25	0.10	13,000	51.00	27,000
J26	0.10	13,000	51.18	27,000
J27	0.10	13,000	51.57	28,000
J28	0.10	13,000	51.51	28,000
J29	0.10	13,000	51.70	28,000
J30	0.07	13,000	52.11	29,000
J31	0.07	13,000	52.38	29,000
J32	0.07	13,000	52.74	30,000
J33	0.07	13,000	53.38	30,000
J34	0.07	13,000	53.97	32,000
J35	0.07	13,000	54.31	32,000
J36	0.07	13,000	55.13	34,000
J37	0.08	13,000	49.32	25,000
J38	0.08	13,000	48.87	25,000
J39	0.08	13,000	49.33	25,000
J40	0.11	13,000	54.48	35,000
J41	0.11	13,000	48.43	24,000
J42	0.11	13,000	47.86	24,000
J43	0.11	13,000	46.23	23,000
J44	0.11	13,000	44.70	21,000
J45	0.11	13,000	41.53	20,000
J46	0.11	13,000	54.39	34,000
J48	0.11	13,000	54.33	34,000
J50	0.11	13,000	47.24	24,000
J51	0.11	13,000	46.94	23,000
J52	0.11	13,000	44.56	21,000
J53	0.11	13,000	43.88	21,000
J55	0.11	13,000	47.06	23,000
J56	0.11	13,000	42.81	20,000
J57	0.11	13,000	44.87	21,000
J58	0.11	13,000	43.52	21,000
J59	0.11	13,000	39.66	19,000
J60	0.11	13,000	35.73	17,000
J61	0.11	13,000	35.32	17,000
J62	0.11	13,000	39.39	19,000
J63	0.11	13,000	39.68	19,000
J64	0.11	13,000	36.20	17,000
J65	0.11	13,000	36.28	17,000
J66	0.11	13,000	40.48	19,000
J67	0.11	13,000	40.93	19,000
J68	0.11	13,000	36.45	17,000
J69	0.11	13,000	36.48	17,000
J70	0.11	13,000	39.96	19,000
J71	0.11	13,000	40.20	19,000
J72	0.11	13,000	36.57	18,000
J73	0.11	13,000	36.75	18,000
J74	0.11	13,000	40.00	19,000
J75	0.10	13,000	43.11	21,000
J76	0.10	13,000	47.78	24,000
J77	0.10	13,000	42.73	20,000
J78	0.07	13,000	48.42	24,000
J79	0.07	13,000	44.89	22,000
J80	0.15	13,000	40.86	19,000
J81	0.15	13,000	50.60	27,000
J82	0.15	13,000	50.71	27,000
J83	0.15	13,000	51.77	29,000
J84	0.15	13,000	51.77	29,000
J85	0.15	13,000	34.91	17,000
J86	0.15	13,000	31.23	16,000
J87	0.15	13,000	31.24	16,000
J88	0.15	13,000	35.32	17,000
J89	0.15	13,000	52.54	30,000
J90	0.15	13,000	44.22	21,000
J91	0.15	13,000	50.97	27,000
J92	0.15	13,000	40.59	19,000
J93	0.15	13,000	37.53	18,000
J94	0.08	13,000	47.97	24,000
J95	0.08	13,000	48.43	24,000
J96	0.08	13,000	48.99	25,000
J97	0.08	13,000	39.60	19,000
J98	0.00	13,000	49.22	25,000

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Model Results - Reliability Analysis (AVDY+FF)

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Break Scenario 4					Option A - 2 Connections - Break Scenario 4					Option B - 3 Connections - Break Scenario 4				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)	Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)	Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	58.88	64,000	J01	0.07	13,000	62.42	67,000	J01	0.07	13,000	54.45	34,000
J02	0.00	13,000	59.33	64,000	J02	0.00	13,000	62.99	66,000	J02	0.00	13,000	55.26	35,000
J05	0.07	13,000	59.72	64,000	J05	0.07	13,000	63.49	66,000	J05	0.07	13,000	56.09	37,000
J06	0.07	13,000	59.80	64,000	J06	0.07	13,000	63.65	66,000	J06	0.07	13,000	56.12	37,000
J07	0.11	13,000	59.91	64,000	J07	0.11	13,000	63.88	67,000	J07	0.11	13,000	55.84	36,000
J08	0.11	13,000	59.74	64,000	J08	0.11	13,000	63.84	67,000	J08	0.11	13,000	55.29	35,000
J09	0.11	13,000	59.21	65,000	J09	0.11	13,000	63.41	68,000	J09	0.11	13,000	54.56	34,000
J10	0.11	13,000	59.45	66,000	J10	0.11	13,000	63.79	69,000	J10	0.11	13,000	54.64	34,000
J100	0.15	13,000	48.98	26,000	J100	0.15	13,000	52.80	27,000	J100	0.15	13,000	46.57	23,000
J101	0.15	13,000	54.27	35,000	J101	0.15	13,000	58.09	36,000	J101	0.15	13,000	51.83	29,000
J102	0.15	13,000	53.96	34,000	J102	0.15	13,000	57.78	35,000	J102	0.15	13,000	51.53	29,000
J103	0.15	13,000	48.46	25,000	J103	0.15	13,000	52.28	26,000	J103	0.15	13,000	45.99	23,000
J109	0.11	13,000	45.11	22,000	J109	0.11	13,000	48.94	23,000	J109	0.11	13,000	42.65	20,000
J11	0.11	13,000	59.34	67,000	J11	0.11	13,000	63.80	71,000	J11	0.11	13,000	54.48	34,000
J110	0.11	13,000	42.73	21,000	J110	0.11	13,000	46.55	22,000	J110	0.11	13,000	40.26	19,000
J111	0.11	13,000	38.74	19,000	J111	0.11	13,000	42.56	19,000	J111	0.11	13,000	36.28	17,000
J112	0.11	13,000	33.38	17,000	J112	0.11	13,000	37.21	17,000	J112	0.11	13,000	30.46	16,000
J113	0.11	13,000	25.38	15,000	J113	0.11	13,000	29.20	15,000	J113	0.11	13,000	22.27	14,000
J114	0.11	13,000	24.19	14,000	J114	0.11	13,000	28.02	15,000	J114	0.11	13,000	21.00	14,000
J115	0.11	13,000	26.76	15,000	J115	0.11	13,000	30.59	16,000	J115	0.11	13,000	23.48	14,000
J116	0.11	13,000	29.56	16,000	J116	0.11	13,000	33.39	16,000	J116	0.11	13,000	26.19	15,000
J117	0.11	13,000	27.87	15,000	J117	0.11	13,000	31.69	16,000	J117	0.11	13,000	24.55	14,000
J118	0.11	13,000	32.38	16,000	J118	0.11	13,000	36.20	17,000	J118	0.11	13,000	29.11	15,000
J119	0.11	13,000	33.73	17,000	J119	0.11	13,000	37.55	17,000	J119	0.11	13,000	30.06	16,000
J12	0.11	13,000	59.27	73,000	J12	0.11	13,000	64.08	77,000	J12	0.11	13,000	54.69	36,000
J120	0.11	13,000	32.38	16,000	J120	0.11	13,000	36.21	17,000	J120	0.11	13,000	28.68	15,000
J121	0.11	13,000	29.65	16,000	J121	0.11	13,000	33.47	16,000	J121	0.11	13,000	26.08	15,000
J122	0.11	13,000	23.34	14,000	J122	0.11	13,000	27.17	15,000	J122	0.11	13,000	19.60	13,000
J123	0.11	13,000	23.56	14,000	J123	0.11	13,000	27.38	15,000	J123	0.11	13,000	19.60	13,000
J124	0.11	13,000	30.36	16,000	J124	0.11	13,000	34.18	16,000	J124	0.11	13,000	26.00	15,000
J125	0.11	13,000	27.43	15,000	J125	0.11	13,000	31.25	16,000	J125	0.11	13,000	23.52	14,000
J128	0.00	6,000	53.07	12,000	J128	0.00	6,000	55.10	13,000	J128	0.00	6,000	51.18	12,000
J129	0.11	13,000	20.88	14,000	J129	0.11	13,000	24.70	14,000	J129	0.11	13,000	18.33	13,000
J130	0.11	13,000	24.37	14,000	J130	0.11	13,000	28.19	15,000	J130	0.11	13,000	21.86	14,000
J131	0.11	13,000	21.07	14,000	J131	0.11	13,000	24.90	14,000	J131	0.11	13,000	18.46	13,000
J132	0.11	13,000	24.67	14,000	J132	0.11	13,000	28.49	15,000	J132	0.11	13,000	21.92	14,000
J133	0.11	13,000	26.02	15,000	J133	0.11	13,000	29.84	15,000	J133	0.11	13,000	21.87	14,000
J134	0.11	13,000	22.97	14,000	J134	0.11	13,000	26.80	15,000	J134	0.11	13,000	18.78	13,000
J135	0.11	13,000	23.47	14,000	J135	0.11	13,000	27.29	15,000	J135	0.11	13,000	19.20	13,000
J136	0.11	13,000	25.46	15,000	J136	0.11	13,000	29.29	15,000	J136	0.11	13,000	21.11	14,000
J137	0.11	6,000	34.45	8,000	J137	0.11	6,000	36.49	8,000	J137	0.11	6,000	32.18	7,000
J14	0.11	6,000	52.07	12,000	J14	0.11	6,000	54.11	13,000	J14	0.11	6,000	49.80	12,000
J15	0.07	13,000	58.83	55,000	J15	0.07	13,000	62.63	57,000	J15	0.07	13,000	54.36	33,000
J152	0.11	13,000	54.93	34,000	J152	0.11	13,000	58.85	36,000	J152	0.11	13,000	51.24	27,000
J153	0.15	13,000	54.09	34,000	J153	0.15	13,000	57.91	36,000	J153	0.15	13,000	51.14	28,000
J154	0.11	13,000	36.69	18,000	J154	0.11	13,000	40.51	19,000	J154	0.11	13,000	32.53	16,000
J155	0.11	13,000	36.45	18,000	J155	0.11	13,000	40.28	18,000	J155	0.11	13,000	31.48	16,000
J156	0.00	13,000	35.33	17,000	J156	0.00	13,000	39.16	18,000	J156	0.00	13,000	27.90	15,000
J158	0.00	13,000	53.43	31,000	J158	0.00	13,000	57.25	33,000	J158	0.00	13,000	52.94	30,000
J16	0.07	13,000	58.57	52,000	J16	0.07	13,000	62.38	54,000	J16	0.07	13,000	54.20	32,000
J162	0.00	13,000	47.64	24,000	J162	0.00	13,000	51.47	25,000	J162	0.00	13,000	45.18	22,000
J164	0.00	13,000	44.56	22,000	J164	0.00	13,000	48.39	23,000	J164	0.00	13,000	42.10	20,000
J166	0.00	13,000	39.45	19,000	J166	0.00	13,000	43.28	20,000	J166	0.00	13,000	36.99	18,000
J168	0.00	13,000	36.33	18,000	J168	0.00	13,000	40.16	18,000	J168	0.00	13,000	33.87	17,000
J17	0.07	13,000	57.93	48,000	J17	0.07	13,000	61.74	50,000	J17	0.07	13,000	53.59	31,000
J170	0.00	13,000	30.96	16,000	J170	0.00	13,000	34.79	17,000	J170	0.00	13,000	28.50	15,000
J172	0.00	13,000	50.22	27,000	J172	0.00	13,000	54.05	28,000	J172	0.00	13,000	47.76	24,000
J174	0.15	13,000	53.56	33,000	J174	0.15	13,000	57.39	34,000	J174	0.15	13,000	51.10	28,000
J176	0.15	13,000	53.99	33,000	J176	0.15	13,000	57.81	35,000	J176	0.15	13,000	51.44	28,000
J178	0.08	13,000	54.49	34,000	J178	0.08	13,000	58.31	36,000	J178	0.08	13,000	52.27	29,000
J18	0.07	13,000	57.30	46,000	J18	0.07	13,000	61.12	48,000	J18	0.07	13,000	53.59	32,000
J180	0.08	13,000	53.78	32,000	J180	0.08	13,000	57.61	34,000	J180	0.08	13,000	52.34	29,000
J182	0.08	13,000	53.46	31,000	J182	0.08	13,000	57.28	33,000	J182	0.08	13,000	52.81	29,000
J184	0.08	13,000	53.42	31,000	J184	0.08	13,000	57.25	32,000	J184	0.08	13,000	53.30	30,000
J186	0.08	13,000	55.31	37,000	J186	0.08	13,000	59.13	38,000	J186	0.08	13,000	52.54	30,000
J188	0.00	13,000	46.02	23,000	J188	0.00	13,000	49.85	24,000	J188	0.00	13,000	43.56	21,000
J19	0.10	13,000	56.72	44,000	J19	0.10	13,000	60.54	45,000	J19	0.10	13,000	52.46	30,000
J20	0.10	13,000	57.02	43,000	J20	0.10	13,000	60.84	45,000	J20	0.10	13,000	53.25	31,000
J21	0.10	13,000	56.61	42,000	J21	0.10	13,000	60.44	44,000	J21	0.10	13,000	52.65	30,000
J22	0.10	13,000	56.53	41,000	J22	0.10	13,000	60.35	43,000	J22	0.10	13,000	53.43	31,000
J23	0.10	13,000	55.93	39,000	J23	0.10	13,000	59.75	40,000	J23	0.10	13,000	52.96	30,000
J24	0.10	13,000	55.37	36,000	J24	0.10	13,000	59.20	38,000	J24	0.10	13,000	52.45	29,000
J25	0.10	13,000	54.97	35,000	J25	0.10	13,000	58.79	37,000	J25	0.10	13,000	52.07	29,000
J26	0.10	13,000	55.00	35,000	J26	0.10	13,000	58.82	37,000	J26	0.10	13,000	52.12	29,000
J27	0.10	13,000	55.29	36,000	J27	0.10	13,000	59.11	37,000	J27	0.10	13,000	52.42	29,000
J28	0.10	13,000	55.12	35,000	J28	0.10	13,000	58.95	37,000	J28	0.10	13,000	52.26	29,000
J29	0.10	13,000	55.25	36,000	J29	0.10	13,000	59.07	37,000	J29	0.10	13,000	52.38	29,000
J30	0.07	13,000	55.60	37,000	J30	0.07	13,000	59.43	39,000	J30	0.07	13,000	52.72	30,000
J31	0.07	13,000	55.84	37,000	J31	0.07	13,000	59.67	39,000	J31	0.07	13,000	52.95	30,000
J32	0.07	13,000	56.17	39,000	J32	0.07	13,000	60.00	40,000	J32	0.07	13,000	53.25	31,000
J33	0.07	13,000	56.79	40,000	J33	0.07	13,000	60.62	42,000	J33	0.07	13,000	53.84	31,000
J34	0.07	13,000	57.38	43,000	J34	0.07	13,000	61.21	45,000	J34	0.07	13,000	54.39	33,000
J35	0.07	13,000	57.76	46,000	J35	0.07	13,000	61.59	47,000	J35	0.07	13,000	54.68	33,000
J36	0.07	13,000	58.73	51,000	J36	0.07	13,000	62.58	53,000	J36	0.07	13,000	55.45	35,000
J37	0.08	13,000	56.08	40,000	J37	0.08	13,000	59.91	42,000	J37	0.08	13,000	53.12	31,000
J38	0.08	13,000	55.90	39,000	J38	0.08	13,000	59.72	40,000	J38	0.08	13,000	53.28	31,000
J39	0.08	13,000	55.62	38,000	J39	0.08	13,000	59.44	39,000	J39	0.08	13,000	52.85	30,000
J40	0.11	13,000	59.28	72,000	J40	0.11	13,000	64.01	75,000	J40	0.11	13,000	54.58	35,000
J41	0.11	13,000	36.86	18,000	J41	0.11	13,000	40.69	19,000	J41	0.11	13,000	33.06	16,000
J42	0.11	13,000	37.26	18,000	J42	0.11	13,000	41.08	19,000	J42	0.11	13,000	34.76	17,000
J43	0.11	13,000	36.87	18,000	J43	0.11	13,000	40.69	19,000	J43	0.11	13,000	33.51	17,000
J44	0.11	13,000	36.64	18,000	J44	0.11	13,000	40.46	18,000	J44	0.11	13,000	32.31	16,000
J45	0.11	13,000	35.66	17,000	J45	0.11	13,000	39.48	18,000	J45	0.11	13,000	29.22	15,000
J46	0.11	13,000	59.30	70,000	J46	0.11	13,000	63.94	74,000	J46	0.11	13,000	54.50	35,000
J48	0.11	13,000	59.32	68,000	J48	0.11	13,000	63.84	72,000	J48	0.11	13,000	54.46	34,000
J50	0.11	13,000	52.03	30,000	J50	0.11	13,000	56.45	31,000	J50	0.11	13,000	47.39	24,000
J51	0.11	13,000	51.72	29,000	J51	0.11	13,000	56.14	31,000	J51	0.11	13,000	47.09	23,000
J52	0.11	13,000	49.09	25,000	J52	0.11	13,000	53.26	27,000	J52	0.11	13,000	44.76	22,000
J53	0.11	13,000	48.40	25,000	J53	0.11	13,000	52.57	26,000	J53	0.11	13,000	44.08	21,000
J55	0.11	13,000	50.82	27,000	J55	0.11	13,000	54.72	28,000	J55	0.11	13,000	47.34	23,000
J56	0.11	13,000	46.24	23,000	J56	0.11	13,000	50.07	24,000	J56	0.11	13,000	43.23	20,000
J57	0.11	13,000	48.29	24,000	J57	0.11	13,000	52.12	25,000	J57	0.11	13,000	45.31	22,000
J58	0.11	13,000	46.94	23,000	J58	0.11	13,000	50.77	24,000	J58	0.11	13,000	43.97	21,000
J59	0.11	13,000	43.13	21,000	J59	0.11	13,000	46.95	21,000	J59	0.11	13,000	40.24	19,000
J60	0.11	13,000	39.20	19,000	J60	0.11	13,000	43.02	19,000	J60	0.11	13,000	36.31	17,000
J61	0.11	13,000	38.79	18,000	J61	0.11	13,000	42.62	19,000	J61	0.11	13,000	35.91	17,000
J62	0.11	13,000	42.87	20,000	J62	0.11	13,000	46.69	21,000	J62	0.11	13,000	39.98	19,000
J63	0.11	13,000	43.25	21,000	J63	0.11	13,000	47.08	22,000	J63	0.11	13,000	40.38	19,000
J64	0.11	13,000	39.77	19,000	J64	0.11	13,000	43.60	20,000	J64	0.11	13,000	36.90	18,000
J65	0.11	13,000	39.85	19,000	J65	0.11	13,000	43.68	20,000	J65	0.11	13,000	36.98	18,000
J66	0.11	13,000	44.06	21,000	J66	0.11	13,000	47.89	22,000	J66	0.11	13,000	41.20	19,000
J67	0.11	13,000	44.68	22,000	J67	0.11	13,000	48.50	22,000	J67	0.11	13,000	41.80	20,000
J68	0.11	13,000	40.20	19,000	J68	0.11	13,000	44.03	20,000	J68	0.11	13,000	37.33	18,000
J69	0.11	13,000	40.23	19,000	J69	0.11	13,000	44.06	20,000	J69	0.11	13,000	37.36	18,000
J70	0.11	13,000	43.72	21,000	J70	0.11	13,000	47.55	22,000	J70	0.11	13,000	40.85	19,000
J71	0.11	13,000	44.24	21,000	J71	0.11	13,000	48.06	22,000	J71	0.11	13,000	41.33	20,000
J72	0.11	13,000	40.63	19,000	J72	0.11	13,000	44.45	20,000	J72	0.11	13,000	37.72	18,000
J73	0.11	13,000	40.81	19,000	J73	0.11	13,000	44.64	20,000	J73	0.11	13,000	37.90	18,000
J74	0.11	13,000	44.07	21,000	J74	0.11	13,000	47.89	22,000	J74	0.11	13,000	41.15	19,000
J75	0.10	13,000	46.94	23,000	J75	0.10	13,000	50.76	24,000	J75	0.10	13,000	44.03	21,000
J76	0.10	13,000	51.41	28,000	J76	0.10	13,000	55.24	29,000	J76	0.10	13,000	48.50	24,000
J77	0.10	13,000	46.19	23,000	J77	0.10	13,000	50.02	24,000	J77	0.10	13,000	43.30	21,000
J78	0.07	13,000	51.80	29,000	J78	0.07	13,000	55.63	30,000	J78	0.07	13,000	48.90	25,000
J79	0.07	13,000	48.26	24,000	J79	0.07	13,000	52.09	26,000	J79	0.07	13,000	45.35	22,000
J80	0.15	13,000	43.61	21,000	J80	0.15	13,000	47.44	22,000	J80	0.15	13,000	40.99	19,000
J81	0.15	13,000	53.94	34,000	J81	0.15	13,000	57.76	35,000	J81	0.15	13,000	51.42	28,000
J82	0.15	13,000	53.58	33,000	J82	0.15	13,000	57.40	34,000	J82	0.15	13,000	50.91	28,000
J83	0.15	13,000	54.58	35,000	J83	0.15	13,000	58.41	37,000	J83	0.15	13,000	51.74	29,000
J84	0.15	13,000	54.91	36,000	J84	0.15	13,000	58.74	38,000	J84	0.15	13,000	51.83	29,000
J85	0.15	13,000	38.16	18,000	J85	0.15	13,000	41.98	19,000	J85	0.15	13,000	35.01	17,000
J86	0.15	13,000	34.50	17,000	J86	0.15	13,000	38.32	18,000	J86	0.15	13,000	31.34	16,000
J87	0.15	13,000	34.52	17,000	J87	0.15	13,000	38.34	18,000	J87	0.15	13,000	31.35	16,000
J88	0.15	13,000	38.63	19,000	J88	0.15	13,000	42.45	19,000	J88	0.15	13,000	35.44	17,000
J89	0.15	13,000	55.88	39,000	J89	0.15	13,000	59.70	41,000	J89	0.15	13,000	52.67	30,000
J90	0.15	13,000	47.34	24,000	J90	0.15	13,000	51.17	25,000	J90	0.15	13,000	44.30	21,000
J91	0.15	13,000	53.99	33,000	J91	0.15	13,000	57.81	35,000	J91	0.15	13,000	51.07	27,000
J92	0.15	13,000	43.43	21,000	J92	0.15	13,000	47.25	22,000	J92	0.15	13,000	40.68	19,000
J93	0.15	13,000	40.32	19,000	J93	0.15	13,000	44.14	20,000	J93	0.15	13,000	37.63	18,000
J94	0.08	13,000	53.86	32,000	J94	0.08	13,000	57.69	34,000	J94	0.08	13,000	51.85	28,000
J95	0.08	13,000	53.46	31,000	J95	0.08	13,000	57.28	33,000	J95	0.08	13,000	52.01	28,000
J96	0.08	13,000	53.52	32,000	J96	0.08	13,000	57.34	33,000	J96	0.08	13,000	52.45	29,000
J97	0.08	13,000	45.14	22,000	J97	0.08	13,000	48.97	23,000	J97	0.08	13,000	43.19	21,000
J98	0.00	13,000	53.27	31,000	J98	0.00	13,000	57.10	33,000	J98	0.00	13,000	52.58	29,000

163401660 - Barrhaven Conservancy
Model Results - Reliability Analysis (AVDY+FF)

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Break Scenario 5				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	58.88	64,000
J02	0.00	13,000	59.33	64,000
J05	0.07	13,000	59.72	64,000
J06	0.07	13,000	59.80	64,000
J07	0.11	13,000	59.91	64,000
J08	0.11	13,000	59.74	64,000
J09	0.11	13,000	59.21	65,000
J10	0.11	13,000	59.45	66,000
J100	0.15	13,000	49.00	26,000
J101	0.15	13,000	54.39	35,000
J102	0.15	13,000	54.18	35,000
J103	0.15	13,000	48.47	25,000
J109	0.11	13,000	52.53	31,000
J11	0.11	13,000	59.34	67,000
J110	0.11	13,000	52.86	31,000
J111	0.11	13,000	53.86	33,000
J112	0.11	13,000	49.40	26,000
J113	0.11	13,000	41.55	20,000
J114	0.11	13,000	40.43	19,000
J115	0.11	13,000	43.06	21,000
J116	0.11	13,000	45.92	23,000
J117	0.11	13,000	44.19	21,000
J118	0.11	13,000	48.67	25,000
J119	0.11	13,000	50.32	27,000
J12	0.11	13,000	59.27	73,000
J120	0.11	13,000	48.96	25,000
J121	0.11	13,000	46.13	23,000
J122	0.11	13,000	39.90	19,000
J123	0.11	13,000	40.20	19,000
J124	0.11	13,000	47.14	24,000
J125	0.11	13,000	44.07	21,000
J128	0.00	6,000	57.00	16,000
J129	0.11	13,000	38.32	18,000
J130	0.11	13,000	41.82	20,000
J131	0.11	13,000	38.50	18,000
J132	0.11	13,000	42.07	20,000
J133	0.11	13,000	43.21	21,000
J134	0.11	13,000	40.16	19,000
J135	0.11	13,000	40.65	19,000
J136	0.11	13,000	42.64	20,000
J137	0.11	6,000	38.33	8,000
J14	0.11	6,000	55.95	15,000
J15	0.07	13,000	58.83	55,000
J152	0.11	13,000	54.93	34,000
J153	0.15	13,000	54.10	34,000
J154	0.11	13,000	53.89	33,000
J155	0.11	13,000	53.60	32,000
J156	0.00	13,000	52.45	30,000
J158	0.00	13,000	46.54	23,000
J16	0.07	13,000	58.57	52,000
J162	0.00	13,000	52.56	31,000
J164	0.00	13,000	51.01	28,000
J166	0.00	13,000	45.90	23,000
J168	0.00	13,000	42.78	21,000
J17	0.07	13,000	57.93	48,000
J170	0.00	13,000	37.41	18,000
J172	0.00	13,000	52.99	32,000
J174	0.15	13,000	54.23	34,000
J176	0.15	13,000	54.08	34,000
J178	0.08	13,000	53.48	32,000
J18	0.07	13,000	57.30	46,000
J180	0.08	13,000	50.71	27,000
J182	0.08	13,000	47.96	24,000
J184	0.08	13,000	46.35	23,000
J186	0.08	13,000	55.18	36,000
J188	0.00	13,000	52.47	31,000
J19	0.10	13,000	56.72	44,000
J20	0.10	13,000	57.02	43,000
J21	0.10	13,000	56.61	42,000
J22	0.10	13,000	56.53	41,000
J23	0.10	13,000	55.93	39,000
J24	0.10	13,000	55.37	36,000
J25	0.10	13,000	54.97	35,000
J26	0.10	13,000	55.00	35,000
J27	0.10	13,000	55.29	36,000
J28	0.10	13,000	55.12	35,000
J29	0.10	13,000	55.25	36,000
J30	0.07	13,000	55.60	37,000
J31	0.07	13,000	55.84	37,000
J32	0.07	13,000	56.17	39,000
J33	0.07	13,000	56.79	40,000
J34	0.07	13,000	57.38	43,000
J35	0.07	13,000	57.76	46,000
J36	0.07	13,000	58.73	51,000
J37	0.08	13,000	56.08	40,000
J38	0.08	13,000	55.90	39,000
J39	0.08	13,000	55.60	38,000
J40	0.11	13,000	59.28	72,000
J41	0.11	13,000	54.92	36,000
J42	0.11	13,000	54.74	35,000
J43	0.11	13,000	54.19	34,000
J44	0.11	13,000	53.81	33,000
J45	0.11	13,000	52.77	31,000
J46	0.11	13,000	59.30	70,000
J48	0.11	13,000	59.32	68,000
J50	0.11	13,000	52.03	30,000
J51	0.11	13,000	51.72	29,000
J52	0.11	13,000	49.09	25,000
J53	0.11	13,000	48.40	25,000
J55	0.11	13,000	50.82	27,000
J56	0.11	13,000	46.24	23,000
J57	0.11	13,000	48.29	24,000
J58	0.11	13,000	46.94	23,000
J59	0.11	13,000	43.13	21,000
J60	0.11	13,000	39.20	19,000
J61	0.11	13,000	38.79	18,000
J62	0.11	13,000	42.87	20,000
J63	0.11	13,000	43.25	21,000
J64	0.11	13,000	39.77	19,000
J65	0.11	13,000	39.85	19,000
J66	0.11	13,000	44.06	21,000
J67	0.11	13,000	44.68	22,000
J68	0.11	13,000	40.20	19,000
J69	0.11	13,000	40.23	19,000
J70	0.11	13,000	43.72	21,000
J71	0.11	13,000	44.24	21,000
J72	0.11	13,000	40.63	19,000
J73	0.11	13,000	40.81	19,000
J74	0.11	13,000	44.07	21,000
J75	0.10	13,000	46.94	23,000
J76	0.10	13,000	51.41	28,000
J77	0.10	13,000	46.19	23,000
J78	0.07	13,000	51.80	29,000
J79	0.07	13,000	48.26	24,000
J80	0.15	13,000	43.62	21,000
J81	0.15	13,000	54.02	34,000
J82	0.15	13,000	53.63	33,000
J83	0.15	13,000	54.60	35,000
J84	0.15	13,000	54.92	36,000
J85	0.15	13,000	38.16	18,000
J86	0.15	13,000	34.51	17,000
J87	0.15	13,000	34.53	17,000
J88	0.15	13,000	38.63	19,000
J89	0.15	13,000	55.89	39,000
J90	0.15	13,000	47.35	24,000
J91	0.15	13,000	54.00	33,000
J92	0.15	13,000	43.44	21,000
J93	0.15	13,000	40.33	19,000
J94	0.08	13,000	52.64	30,000
J95	0.08	13,000	50.12	26,000
J96	0.08	13,000	48.93	25,000
J97	0.08	13,000	43.94	21,000
J98	0.00	13,000	47.18	23,000

Option A - 2 Connections - Break Scenario 5				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	62.42	67,000
J02	0.00	13,000	62.99	66,000
J05	0.07	13,000	63.49	66,000
J06	0.07	13,000	63.65	66,000
J07	0.11	13,000	63.88	67,000
J08	0.11	13,000	63.84	67,000
J09	0.11	13,000	63.41	68,000
J10	0.11	13,000	63.79	69,000
J100	0.15	13,000	52.83	27,000
J101	0.15	13,000	58.21	36,000
J102	0.15	13,000	58.00	36,000
J103	0.15	13,000	52.29	26,000
J109	0.11	13,000	56.36	32,000
J11	0.11	13,000	63.80	71,000
J110	0.11	13,000	56.68	32,000
J111	0.11	13,000	57.68	34,000
J112	0.11	13,000	53.22	27,000
J113	0.11	13,000	45.37	21,000
J114	0.11	13,000	44.26	20,000
J115	0.11	13,000	46.89	22,000
J116	0.11	13,000	49.74	24,000
J117	0.11	13,000	48.01	22,000
J118	0.11	13,000	52.49	26,000
J119	0.11	13,000	54.14	28,000
J12	0.11	13,000	64.08	77,000
J120	0.11	13,000	52.78	26,000
J121	0.11	13,000	49.96	24,000
J122	0.11	13,000	43.73	20,000
J123	0.11	13,000	44.03	20,000
J124	0.11	13,000	50.96	25,000
J125	0.11	13,000	47.90	22,000
J128	0.00	6,000	59.04	17,000
J129	0.11	13,000	42.15	19,000
J130	0.11	13,000	45.65	21,000
J131	0.11	13,000	42.32	19,000
J132	0.11	13,000	45.89	21,000
J133	0.11	13,000	47.04	22,000
J134	0.11	13,000	43.99	20,000
J135	0.11	13,000	44.47	20,000
J136	0.11	13,000	46.47	21,000
J137	0.11	6,000	40.36	8,000
J14	0.11	6,000	57.99	15,000
J15	0.07	13,000	62.63	57,000
J152	0.11	13,000	58.85	36,000
J153	0.15	13,000	57.92	36,000
J154	0.11	13,000	57.71	34,000
J155	0.11	13,000	57.43	33,000
J156	0.00	13,000	56.27	31,000
J158	0.00	13,000	50.36	24,000
J16	0.07	13,000	62.38	54,000
J162	0.00	13,000	56.38	32,000
J164	0.00	13,000	54.83	29,000
J166	0.00	13,000	49.73	24,000
J168	0.00	13,000	46.61	21,000
J17	0.07	13,000	61.74	50,000
J170	0.00	13,000	41.24	19,000
J172	0.00	13,000	56.81	33,000
J174	0.15	13,000	58.05	36,000
J176	0.15	13,000	57.91	35,000
J178	0.08	13,000	57.30	33,000
J18	0.07	13,000	61.12	48,000
J180	0.08	13,000	54.53	28,000
J182	0.08	13,000	51.79	25,000
J184	0.08	13,000	50.17	24,000
J186	0.08	13,000	59.00	38,000
J188	0.00	13,000	56.30	32,000
J19	0.10	13,000	60.54	45,000
J20	0.10	13,000	60.84	45,000
J21	0.10	13,000	60.44	44,000
J22	0.10	13,000	60.36	43,000
J23	0.10	13,000	59.75	40,000
J24	0.10	13,000	59.20	38,000
J25	0.10	13,000	58.79	37,000
J26	0.10	13,000	58.82	37,000
J27	0.10	13,000	59.11	37,000
J28	0.10	13,000	58.95	37,000
J29	0.10	13,000	59.07	37,000
J30	0.07	13,000	59.43	39,000
J31	0.07	13,000	59.67	39,000
J32	0.07	13,000	60.00	40,000
J33	0.07	13,000	60.62	42,000
J34	0.07	13,000	61.21	45,000
J35	0.07	13,000	61.59	47,000
J36	0.07	13,000	62.58	53,000
J37	0.08	13,000	59.91	42,000
J38	0.08	13,000	59.72	40,000
J39	0.08	13,000	59.43	39,000
J40	0.11	13,000	64.01	75,000
J41	0.11	13,000	58.74	37,000
J42	0.11	13,000	58.56	36,000
J43	0.11	13,000	58.02	35,000
J44	0.11	13,000	57.63	34,000
J45	0.11	13,000	56.59	32,000
J46	0.11	13,000	63.94	74,000
J48	0.11	13,000	63.84	72,000
J50	0.11	13,000	56.45	31,000
J51	0.11	13,000	56.14	31,000
J52	0.11	13,000	53.26	27,000
J53	0.11	13,000	52.57	26,000
J55	0.11	13,000	54.72	28,000
J56	0.11	13,000	50.07	24,000
J57	0.11	13,000	52.12	25,000
J58	0.11	13,000	50.77	24,000
J59	0.11	13,000	46.95	21,000
J60	0.11	13,000	43.02	19,000
J61	0.11	13,000	42.62	19,000
J62	0.11	13,000	46.69	21,000
J63	0.11	13,000	47.08	22,000
J64	0.11	13,000	43.60	20,000
J65	0.11	13,000	43.68	20,000
J66	0.11	13,000	47.89	22,000
J67	0.11	13,000	48.50	22,000
J68	0.11	13,000	44.03	20,000
J69	0.11	13,000	44.06	20,000
J70	0.11	13,000	47.55	22,000
J71	0.11	13,000	48.06	22,000
J72	0.11	13,000	44.45	20,000
J73	0.11	13,000	44.64	20,000
J74	0.11	13,000	47.89	22,000
J75	0.10	13,000	50.76	24,000
J76	0.10	13,000	55.24	29,000
J77	0.10	13,000	50.02	24,000
J78	0.07	13,000	55.63	30,000
J79	0.07	13,000	52.09	26,000
J80	0.15	13,000	47.44	22,000
J81	0.15	13,000	57.85	36,000
J82	0.15	13,000	57.45	35,000
J83	0.15	13,000	58.43	37,000
J84	0.15	13,000	58.74	38,000
J85	0.15	13,000	41.98	19,000
J86	0.15	13,000	38.33	18,000
J87	0.15	13,000	38.35	18,000
J88	0.15	13,000	42.45	19,000
J89	0.15	13,000	59.71	41,000
J90	0.15	13,000	51.17	25,000
J91	0.15	13,000	57.82	35,000
J92	0.15	13,000	47.26	22,000
J93	0.15	13,000	44.15	20,000
J94	0.08	13,000	56.46	31,000
J95	0.08	13,000	53.94	27,000
J96	0.08	13,000	52.76	26,000
J97	0.08	13,000	47.77	22,000
J98	0.00	13,000	51.00	24,000

Option B - 3 Connections - Break Scenario 5				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	54.31	34,000
J02	0.00	13,000	55.09	35,000
J05	0.07	13,000	55.90	37,000
J06	0.07	13,000	55.92	37,000
J07	0.11	13,000	55.68	36,000
J08	0.11	13,000	55.15	35,000
J09	0.11	13,000	54.43	34,000
J10	0.11	13,000	54.53	34,000
J100	0.15	13,000	46.25	23,000
J101	0.15	13,000	51.70	29,000
J102	0.15	13,000	51.55	29,000
J103	0.15	13,000	45.80	23,000
J109	0.11	13,000	49.58	26,000
J11	0.11	13,000	54.38	34,000
J110	0.11	13,000	49.72	26,000
J111	0.11	13,000	50.27	26,000
J112	0.11	13,000	45.11	22,000
J113	0.11	13,000	37.03	18,000
J114	0.11	13,000	35.80	17,000
J115	0.11	13,000	38.32	18,000
J116	0.11	13,000	41.07	20,000
J117	0.11	13,000	39.41	19,000
J118	0.11	13,000	43.95	21,000
J119	0.11	13,000	45.10	22,000
J12	0.11	13,000	54.62	35,000
J120	0.11	13,000	43.71	21,000
J121	0.11	13,000	41.03	20,000
J122	0.11	13,000	34.62	17,000
J123	0.11	13,000	34.67	17,000
J124	0.11	13,000	41.15	20,000
J125	0.11	13,000	38.59	18,000
J128	0.00	6,000	54.73	15,000
J129	0.11	13,000	34.28	17,000
J130	0.11	13,000	37.86	18,000
J131	0.11	13,000	34.35	17,000
J132	0.11	13,000	37.76	18,000
J133	0.11	13,000	37.27	18,000
J134	0.11	13,000	34.17	17,000
J135	0.11	13,000	34.57	17,000
J136	0.11	13,000	36.47	17,000
J137	0.11	6,000	35.60	8,000
J14	0.11	6,000	53.23	14,000
J15	0.07	13,000	54.15	32,000
J152	0.11	13,000	51.06	27,000
J153	0.15	13,000	50.88	28,000
J154	0.11	13,000	47.95	24,000
J155	0.11	13,000	46.80	23,000
J156	0.00	13,000	43.18	21,000
J158	0.00	13,000	43.48	21,000
J16	0.07	13,000	53.97	32,000
J162	0.00	13,000	49.74	26,000
J164	0.00	13,000	48.11	24,000
J166	0.00	13,000	43.00	21,000
J168	0.00	13,000	39.88	19,000
J17	0.07	13,000	53.34	31,000
J170	0.00	13,000	34.51	17,000
J172	0.00	13,000	50.29	27,000
J174	0.15	13,000	51.64	28,000
J176	0.15	13,000	51.52	28,000
J178	0.08	13,000	52.30	29,000
J18	0.07	13,000	53.31	31,000
J180	0.08	13,000	51.95	28,000
J182	0.08	13,000	51.62	28,000
J184	0.08	13,000	51.46	27,000
J186	0.08	13,000	52.59	30,000
J188	0.00	13,000	49.57	26,000
J19	0.10	13,000	52.16	30,000
J20	0.10	13,000	52.93	30,000
J21	0.10	13,000	52.32	29,000
J22	0.10	13,000	53.06	31,000
J23	0.10	13,000	52.62	30,000
J24	0.10	13,000	52.13	29,000
J25	0.10	13,000	51.76	28,000
J26	0.10	13,000	51.82	28,000
J27	0.10	13,000	52.13	29,000
J28	0.10	13,000	51.98	28,000
J29	0.10	13,000	52.11	29,000
J30	0.07	13,000	52.46	29,000
J31	0.07	13,000	52.69	29,000
J32	0.07	13,000	53.01	30,000
J33	0.07	13,000	53.60	31,000
J34	0.07	13,000	54.16	32,000
J35	0.07	13,000	54.47	33,000
J36	0.07	13,000	55.25	34,000
J37	0.08	13,000	52.65	30,000
J38	0.08	13,000	52.66	30,000
J39	0.08	13,000	52.53	30,000
J40	0.11	13,000	54.51	35,000
J41	0.11	13,000	51.42	28,000
J42	0.11	13,000	50.83	27,000
J43	0.11	13,000	49.19	25,000
J44	0.11	13,000	47.66	24,000
J45	0.11	13,000	44.50	21,000
J46	0.11	13,000	54.43	35,000
J48	0.11	13,000	54.37	34,000
J50	0.11	13,000	47.29	24,000
J51	0.11	13,000	46.99	23,000
J52	0.11	13,000	44.62	22,000
J53	0.11	13,000	43.94	21,000
J55	0.11	13,000	47.15	23,000
J56	0.11	13,000	43.00	20,000
J57	0.11	13,000	45.08	21,000
J58	0.11	13,000	43.74	21,000
J59	0.11	13,000	39.98	19,000
J60	0.11	13,000	36.05	17,000
J61	0.11	13,000	35.65	17,000
J62	0.11	13,000	39.72	19,000
J63	0.11	13,000	40.11	19,000
J64	0.11	13,000	36.63	17,000
J65	0.11	13,000	36.71	18,000
J66	0.11	13,000	40.92	19,000
J67	0.11	13,000	41.51	20,000
J68	0.11	13,000	37.03	18,000
J69	0.11	13,000	37.06	18,000
J70	0.11	13,000	40.55	19,000
J71	0.11	13,000	41.01	19,000
J72	0.11	13,000	37.40	18,000
J73	0.11	13,000	37.58	18,000
J74	0.11	13,000	40.83	19,000
J75	0.10	13,000	43.72	21,000
J76	0.10	13,000	48.20	24,000
J77	0.10	13,000	43.02	20,000
J78	0.07	13,000	48.63	25,000
J79	0.07	13,000	45.10	22,000
J80	0.15	13,000	40.68	19,000
J81	0.15	13,000	51.24	28,000
J82	0.15	13,000	50.69	27,000
J83	0.15	13,000	51.48	28,000
J84	0.15	13,000	51.56	28,000
J85	0.15	13,000	34.73	17,000
J86	0.15	13,000	31.06	16,000
J87	0.15	13,000	31.07	16,000
J88	0.15	13,000	35.16	17,000
J89	0.15	13,000	52.39	30,000
J90	0.15	13,000	44.03	21,000
J91	0.15	13,000	50.79	27,000
J92	0.15	13,000	40.39	19,000
J93	0.15	13,000	37.33	18,000
J94	0.08	13,000	49.54	25,000
J95	0.08	13,000	47.05	23,000
J96	0.08	13,000	45.88	22,000
J97	0.08	13,000	40.93	19,000
J98	0.00	13,000	44.12	21,000

163401660 - Barrhaven Conservancy
Model Results - Reliability Analysis (AVDY+FF)

Option A - 2 Connections with Upgrades on Danson Gardens Grv - Break Scenario 6					Option A - 2 Connections - Break Scenario 6					Option B - 3 Connections - Break Scenario 6				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)	Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)	Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	58.88	64,000	J01	0.07	13,000	62.42	67,000	J01	0.07	13,000	54.45	34,000
J02	0.00	13,000	59.33	64,000	J02	0.00	13,000	62.99	66,000	J02	0.00	13,000	55.26	35,000
J05	0.07	13,000	59.72	64,000	J05	0.07	13,000	63.49	66,000	J05	0.07	13,000	56.09	37,000
J06	0.07	13,000	59.80	64,000	J06	0.07	13,000	63.65	66,000	J06	0.07	13,000	56.12	37,000
J07	0.11	13,000	59.91	64,000	J07	0.11	13,000	63.88	67,000	J07	0.11	13,000	55.85	36,000
J08	0.11	13,000	59.74	64,000	J08	0.11	13,000	63.84	67,000	J08	0.11	13,000	55.29	35,000
J09	0.11	13,000	59.21	65,000	J09	0.11	13,000	63.41	68,000	J09	0.11	13,000	54.56	34,000
J10	0.11	13,000	59.45	66,000	J10	0.11	13,000	63.79	69,000	J10	0.11	13,000	54.64	34,000
J100	0.15	13,000	48.99	26,000	J100	0.15	13,000	52.81	27,000	J100	0.15	13,000	46.58	23,000
J101	0.15	13,000	54.29	35,000	J101	0.15	13,000	58.11	36,000	J101	0.15	13,000	51.85	29,000
J102	0.15	13,000	53.99	34,000	J102	0.15	13,000	57.81	35,000	J102	0.15	13,000	51.56	29,000
J103	0.15	13,000	48.47	25,000	J103	0.15	13,000	52.29	26,000	J103	0.15	13,000	46.00	23,000
J109	0.11	13,000	46.16	23,000	J109	0.11	13,000	49.99	24,000	J109	0.11	13,000	40.28	19,000
J11	0.11	13,000	59.34	67,000	J11	0.11	13,000	63.80	71,000	J11	0.11	13,000	54.48	34,000
J110	0.11	13,000	48.81	25,000	J110	0.11	13,000	52.64	26,000	J110	0.11	13,000	42.93	20,000
J111	0.11	13,000	52.84	31,000	J111	0.11	13,000	56.66	32,000	J111	0.11	13,000	46.95	23,000
J112	0.11	13,000	48.94	25,000	J112	0.11	13,000	52.77	27,000	J112	0.11	13,000	42.54	20,000
J113	0.11	13,000	41.16	20,000	J113	0.11	13,000	44.98	21,000	J113	0.11	13,000	34.55	17,000
J114	0.11	13,000	40.08	19,000	J114	0.11	13,000	43.90	20,000	J114	0.11	13,000	33.35	17,000
J115	0.11	13,000	42.73	21,000	J115	0.11	13,000	46.55	22,000	J115	0.11	13,000	35.90	17,000
J116	0.11	13,000	45.60	23,000	J116	0.11	13,000	49.42	24,000	J116	0.11	13,000	38.68	18,000
J117	0.11	13,000	43.86	21,000	J117	0.11	13,000	47.68	22,000	J117	0.11	13,000	37.01	18,000
J118	0.11	13,000	48.33	25,000	J118	0.11	13,000	52.15	26,000	J118	0.11	13,000	41.54	20,000
J119	0.11	13,000	50.06	27,000	J119	0.11	13,000	53.88	28,000	J119	0.11	13,000	42.79	20,000
J12	0.11	13,000	59.27	73,000	J12	0.11	13,000	64.08	77,000	J12	0.11	13,000	54.69	36,000
J120	0.11	13,000	48.70	25,000	J120	0.11	13,000	52.52	26,000	J120	0.11	13,000	41.40	20,000
J121	0.11	13,000	45.85	23,000	J121	0.11	13,000	49.68	24,000	J121	0.11	13,000	38.69	18,000
J122	0.11	13,000	39.64	19,000	J122	0.11	13,000	43.46	20,000	J122	0.11	13,000	32.29	16,000
J123	0.11	13,000	39.96	19,000	J123	0.11	13,000	43.78	20,000	J123	0.11	13,000	32.37	16,000
J124	0.11	13,000	46.92	23,000	J124	0.11	13,000	50.74	24,000	J124	0.11	13,000	38.88	18,000
J125	0.11	13,000	43.83	21,000	J125	0.11	13,000	47.65	22,000	J125	0.11	13,000	36.29	17,000
J128	0.00	6,000	56.96	16,000	J128	0.00	6,000	59.00	16,000	J128	0.00	6,000	54.32	14,000
J129	0.11	13,000	38.15	18,000	J129	0.11	13,000	41.98	19,000	J129	0.11	13,000	32.15	16,000
J130	0.11	13,000	41.66	20,000	J130	0.11	13,000	45.48	21,000	J130	0.11	13,000	35.74	17,000
J131	0.11	13,000	38.33	18,000	J131	0.11	13,000	42.15	19,000	J131	0.11	13,000	32.21	16,000
J132	0.11	13,000	41.89	20,000	J132	0.11	13,000	45.72	21,000	J132	0.11	13,000	35.61	17,000
J133	0.11	13,000	43.03	21,000	J133	0.11	13,000	46.85	21,000	J133	0.11	13,000	35.06	17,000
J134	0.11	13,000	39.98	19,000	J134	0.11	13,000	43.80	20,000	J134	0.11	13,000	31.96	16,000
J135	0.11	13,000	40.47	19,000	J135	0.11	13,000	44.29	20,000	J135	0.11	13,000	32.36	16,000
J136	0.11	13,000	42.46	20,000	J136	0.11	13,000	46.28	21,000	J136	0.11	13,000	34.26	17,000
J137	0.11	6,000	38.28	8,000	J137	0.11	6,000	40.32	8,000	J137	0.11	6,000	35.18	8,000
J14	0.11	6,000	55.91	15,000	J14	0.11	6,000	57.95	15,000	J14	0.11	6,000	52.80	13,000
J15	0.07	13,000	58.83	55,000	J15	0.07	13,000	62.63	57,000	J15	0.07	13,000	54.36	33,000
J152	0.11	13,000	54.93	34,000	J152	0.11	13,000	58.85	36,000	J152	0.11	13,000	51.24	27,000
J153	0.15	13,000	54.09	34,000	J153	0.15	13,000	57.91	36,000	J153	0.15	13,000	51.15	28,000
J154	0.11	13,000	53.70	32,000	J154	0.11	13,000	57.53	34,000	J154	0.11	13,000	45.74	22,000
J155	0.11	13,000	53.42	32,000	J155	0.11	13,000	57.24	33,000	J155	0.11	13,000	44.58	21,000
J156	0.00	13,000	52.26	30,000	J156	0.00	13,000	56.08	31,000	J156	0.00	13,000	40.94	19,000
J158	0.00	13,000	53.42	31,000	J158	0.00	13,000	57.25	32,000	J158	0.00	13,000	52.94	30,000
J16	0.07	13,000	58.57	52,000	J16	0.07	13,000	62.38	54,000	J16	0.07	13,000	54.20	32,000
J162	0.00	13,000	43.49	21,000	J162	0.00	13,000	47.31	22,000	J162	0.00	13,000	37.60	18,000
J164	0.00	13,000	43.67	21,000	J164	0.00	13,000	47.49	22,000	J164	0.00	13,000	37.79	18,000
J166	0.00	13,000	38.56	19,000	J166	0.00	13,000	42.39	19,000	J166	0.00	13,000	32.68	16,000
J168	0.00	13,000	35.44	17,000	J168	0.00	13,000	39.26	18,000	J168	0.00	13,000	29.56	15,000
J17	0.07	13,000	57.93	48,000	J17	0.07	13,000	61.74	50,000	J17	0.07	13,000	53.59	31,000
J170	0.00	13,000	30.07	16,000	J170	0.00	13,000	33.89	16,000	J170	0.00	13,000	24.19	14,000
J172	0.00	13,000	50.38	27,000	J172	0.00	13,000	54.20	29,000	J172	0.00	13,000	47.91	24,000
J174	0.15	13,000	53.62	33,000	J174	0.15	13,000	57.45	34,000	J174	0.15	13,000	51.15	28,000
J176	0.15	13,000	54.02	34,000	J176	0.15	13,000	57.84	35,000	J176	0.15	13,000	51.47	28,000
J178	0.08	13,000	54.48	34,000	J178	0.08	13,000	58.31	36,000	J178	0.08	13,000	52.26	29,000
J18	0.07	13,000	57.30	46,000	J18	0.07	13,000	61.12	48,000	J18	0.07	13,000	53.59	32,000
J180	0.08	13,000	53.78	32,000	J180	0.08	13,000	57.60	34,000	J180	0.08	13,000	52.33	29,000
J182	0.08	13,000	53.45	31,000	J182	0.08	13,000	57.28	33,000	J182	0.08	13,000	52.80	29,000
J184	0.08	13,000	53.42	31,000	J184	0.08	13,000	57.24	32,000	J184	0.08	13,000	53.30	30,000
J186	0.08	13,000	55.30	37,000	J186	0.08	13,000	59.12	38,000	J186	0.08	13,000	52.53	30,000
J188	0.00	13,000	45.13	22,000	J188	0.00	13,000	48.95	23,000	J188	0.00	13,000	39.25	19,000
J19	0.10	13,000	56.72	44,000	J19	0.10	13,000	60.54	45,000	J19	0.10	13,000	52.46	30,000
J20	0.10	13,000	57.02	43,000	J20	0.10	13,000	60.84	45,000	J20	0.10	13,000	53.25	31,000
J21	0.10	13,000	56.61	42,000	J21	0.10	13,000	60.44	44,000	J21	0.10	13,000	52.65	30,000
J22	0.10	13,000	56.53	41,000	J22	0.10	13,000	60.35	43,000	J22	0.10	13,000	53.43	31,000
J23	0.10	13,000	55.93	39,000	J23	0.10	13,000	59.75	40,000	J23	0.10	13,000	52.96	30,000
J24	0.10	13,000	55.37	36,000	J24	0.10	13,000	59.20	38,000	J24	0.10	13,000	52.45	29,000
J25	0.10	13,000	54.97	35,000	J25	0.10	13,000	58.79	37,000	J25	0.10	13,000	52.07	29,000
J26	0.10	13,000	55.00	35,000	J26	0.10	13,000	58.82	37,000	J26	0.10	13,000	52.12	29,000
J27	0.10	13,000	55.29	36,000	J27	0.10	13,000	59.11	37,000	J27	0.10	13,000	52.42	29,000
J28	0.10	13,000	55.12	35,000	J28	0.10	13,000	58.95	37,000	J28	0.10	13,000	52.26	29,000
J29	0.10	13,000	55.25	36,000	J29	0.10	13,000	59.07	37,000	J29	0.10	13,000	52.38	29,000
J30	0.07	13,000	55.60	37,000	J30	0.07	13,000	59.43	39,000	J30	0.07	13,000	52.73	30,000
J31	0.07	13,000	55.84	37,000	J31	0.07	13,000	59.67	39,000	J31	0.07	13,000	52.95	30,000
J32	0.07	13,000	56.17	39,000	J32	0.07	13,000	60.00	40,000	J32	0.07	13,000	53.25	31,000
J33	0.07	13,000	56.79	40,000	J33	0.07	13,000	60.62	42,000	J33	0.07	13,000	53.84	31,000
J34	0.07	13,000	57.38	43,000	J34	0.07	13,000	61.21	45,000	J34	0.07	13,000	54.39	33,000
J35	0.07	13,000	57.76	46,000	J35	0.07	13,000	61.59	47,000	J35	0.07	13,000	54.68	33,000
J36	0.07	13,000	58.73	51,000	J36	0.07	13,000	62.58	53,000	J36	0.07	13,000	55.45	35,000
J37	0.08	13,000	56.08	40,000	J37	0.08	13,000	59.90	42,000	J37	0.08	13,000	53.12	31,000
J38	0.08	13,000	55.89	39,000	J38	0.08	13,000	59.72	40,000	J38	0.08	13,000	53.28	31,000
J39	0.08	13,000	55.62	38,000	J39	0.08	13,000	59.44	39,000	J39	0.08	13,000	52.85	30,000
J40	0.11	13,000	59.28	72,000	J40	0.11	13,000	64.01	75,000	J40	0.11	13,000	54.58	35,000
J41	0.11	13,000	54.89	35,000	J41	0.11	13,000	58.72	37,000	J41	0.11	13,000	50.40	27,000
J42	0.11	13,000	54.58	35,000	J42	0.11	13,000	58.40	36,000	J42	0.11	13,000	48.73	25,000
J43	0.11	13,000	54.02	33,000	J43	0.11	13,000	57.84	35,000	J43	0.11	13,000	47.02	23,000
J44	0.11	13,000	53.63	32,000	J44	0.11	13,000	57.45	34,000	J44	0.11	13,000	45.45	22,000
J45	0.11	13,000	52.58	30,000	J45	0.11	13,000	56.40	32,000	J45	0.11	13,000	42.26	20,000
J46	0.11	13,000	59.30	70,000	J46	0.11	13,000	63.94	74,000	J46	0.11	13,000	54.50	35,000
J48	0.11	13,000	59.32	68,000	J48	0.11	13,000	63.84	72,000	J48	0.11	13,000	54.46	34,000
J50	0.11	13,000	52.03	30,000	J50	0.11	13,000	56.45	31,000	J50	0.11	13,000	47.39	24,000
J51	0.11	13,000	51.72	29,000	J51	0.11	13,000	56.14	31,000	J51	0.11	13,000	47.09	23,000
J52	0.11	13,000	49.09	25,000	J52	0.11	13,000	53.26	27,000	J52	0.11	13,000	44.76	22,000
J53	0.11	13,000	48.40	25,000	J53	0.11	13,000	52.57	26,000	J53	0.11	13,000	44.08	21,000
J55	0.11	13,000	50.82	27,000	J55	0.11	13,000	54.72	28,000	J55	0.11	13,000	47.34	23,000
J56	0.11	13,000	46.24	23,000	J56	0.11	13,000	50.07	24,000	J56	0.11	13,000	43.23	20,000
J57	0.11	13,000	48.29	24,000	J57	0.11	13,000	52.12	25,000	J57	0.11	13,000	45.31	22,000
J58	0.11	13,000	46.94	23,000	J58	0.11	13,000	50.77	24,000	J58	0.11	13,000	43.97	21,000
J59	0.11	13,000	43.13	21,000	J59	0.11	13,000	46.95	21,000	J59	0.11	13,000	40.24	19,000
J60	0.11	13,000	39.20	19,000	J60	0.11	13,000	43.02	19,000	J60	0.11	13,000	36.31	17,000
J61	0.11	13,000	38.79	18,000	J61	0.11	13,000	42.62	19,000	J61	0.11	13,000	35.91	17,000
J62	0.11	13,000	42.87	20,000	J62	0.11	13,000	46.69	21,000	J62	0.11	13,000	39.98	19,000
J63	0.11	13,000	43.25	21,000	J63	0.11	13,000	47.08	22,000	J63	0.11	13,000	40.38	19,000
J64	0.11	13,000	39.77	19,000	J64	0.11	13,000	43.60	20,000	J64	0.11	13,000	36.90	18,000
J65	0.11	13,000	39.85	19,000	J65	0.11	13,000	43.68	20,000	J65	0.11	13,000	36.99	18,000
J66	0.11	13,000	44.06	21,000	J66	0.11	13,000	47.89	22,000	J66	0.11	13,000	41.20	19,000
J67	0.11	13,000	44.68	22,000	J67	0.11	13,000	48.50	22,000	J67	0.11	13,000	41.80	20,000
J68	0.11	13,000	40.20	19,000	J68	0.11	13,000	44.02	20,000	J68	0.11	13,000	37.33	18,000
J69	0.11	13,000	40.23	19,000	J69	0.11	13,000	44.06	20,000	J69	0.11	13,000	37.36	18,000
J70	0.11	13,000	43.72	21,000	J70	0.11	13,000	47.55	22,000	J70	0.11	13,000	40.85	19,000
J71	0.11	13,000	44.24	21,000	J71	0.11	13,000	48.06	22,000	J71	0.11	13,000	41.33	20,000
J72	0.11	13,000	40.63	19,000	J72	0.11	13,000	44.45	20,000	J72	0.11	13,000	37.72	18,000
J73	0.11	13,000	40.81	19,000	J73	0.11	13,000	44.63	20,000	J73	0.11	13,000	37.90	18,000
J74	0.11	13,000	44.07	21,000	J74	0.11	13,000	47.89	22,000	J74	0.11	13,000	41.15	19,000
J75	0.10	13,000	46.94	23,000	J75	0.10	13,000	50.76	24,000	J75	0.10	13,000	44.04	21,000
J76	0.10	13,000	51.41	28,000	J76	0.10	13,000	55.23	29,000	J76	0.10	13,000	48.50	24,000
J77	0.10	13,000	46.19	23,000	J77	0.10	13,000	50.02	24,000	J77	0.10	13,000	43.30	21,000
J78	0.07	13,000	51.80	29,000	J78	0.07	13,000	55.63	30,000	J78	0.07	13,000	48.90	25,000
J79	0.07	13,000	48.26	24,000	J79	0.07	13,000	52.09	26,000	J79	0.07	13,000	45.35	22,000
J80	0.15	13,000	43.62	21,000	J80	0.15	13,000	47.44	22,000	J80	0.15	13,000	40.99	19,000
J81	0.15	13,000	53.96	34,000	J81	0.15	13,000	57.78	35,000	J81	0.15	13,000	51.44	28,000
J82	0.15	13,000	53.59	33,000	J82	0.15	13,000	57.41	34,000	J82	0.15	13,000	50.93	28,000
J83	0.15	13,000	54.59	35,000	J83	0.15	13,000	58.41	37,000	J83	0.15	13,000	51.74	29,000
J84	0.15	13,000	54.92	36,000	J84	0.15	13,000	58.74	38,000	J84	0.15	13,000	51.83	29,000
J85	0.15	13,000	38.16	18,000	J85	0.15	13,000	41.98	19,000	J85	0.15	13,000	35.01	17,000
J86	0.15	13,000	34.50	17,000	J86	0.15	13,000	38.33	18,000	J86	0.15	13,000	31.34	16,000
J87	0.15	13,000	34.52	17,000	J87	0.15	13,000	38.35	18,000	J87	0.15	13,000	31.35	16,000
J88	0.15	13,000	38.63	19,000	J88	0.15	13,000	42.45	19,000	J88	0.15	13,000	35.44	17,000
J89	0.15	13,000	55.88	39,000	J89	0.15	13,000	59.71	41,000	J89	0.15	13,000	52.68	30,000
J90	0.15	13,000	47.35	24,000	J90	0.15	13,000	51.17	25,000	J90	0.15	13,000	44.31	21,000
J91	0.15	13,000	53.99	33,000	J91	0.15	13,000	57.82	35,000	J91	0.15	13,000	51.08	27,000
J92	0.15	13,000	43.43	21,000	J92	0.15	13,000	47.26	22,000	J92	0.15	13,000	40.68	19,000
J93	0.15	13,000	40.32	19,000	J93	0.15	13,000	44.15	20,000	J93	0.15	13,000	37.63	18,000
J94	0.08	13,000	53.86	32,000	J94	0.08	13,000	57.68	34,000	J94	0.08	13,000	51.85	28,000
J95	0.08	13,000	53.45	31,000	J95	0.08	13,000	57.27	33,000	J95	0.08	13,000	52.00	28,000
J96	0.08	13,000	53.51	32,000	J96	0.08	13,000	57.33	33,000	J96	0.08	13,000	52.44	29,000
J97	0.08	13,000	45.14	22,000	J97	0.08	13,000	48.96	23,000	J97	0.08	13,000	43.18	21,000
J98	0.00	13,000	53.27	31,000	J98	0.00	13,000	57.09	33,000	J98	0.00	13,000	52.58	29,000

Option B - 3 Connections - Break Scenario 7 (Connection 3 Break)				
Junction ID	Base Demand (AVDY; L/s)	Required Fire Flow (L/min)	Residual Pressure (psi)	Available Fire Flow at Residual 20 psi (L/min)
J01	0.07	13,000	50.75	28,000
J02	0.00	13,000	50.85	28,000
J05	0.07	13,000	51.07	28,000
J06	0.07	13,000	51.13	28,000
J07	0.11	13,000	51.35	28,000
J08	0.11	13,000	51.37	28,000
J09	0.11	13,000	51.02	28,000
J10	0.11	13,000	51.58	29,000
J100	0.15	13,000	35.85	17,000
J101	0.15	13,000	41.53	20,000
J102	0.15	13,000	40.97	20,000
J103	0.15	13,000	34.94	17,000
J109	0.11	13,000	38.31	18,000
J11	0.11	13,000	51.74	29,000
J110	0.11	13,000	38.43	18,000
J111	0.11	13,000	38.95	19,000
J112	0.11	13,000	33.79	17,000
J113	0.11	13,000	25.70	15,000
J114	0.11	13,000	24.48	14,000
J115	0.11	13,000	27.00	15,000
J116	0.11	13,000	29.75	16,000
J117	0.11	13,000	28.09	15,000
J118	0.11	13,000	32.63	16,000
J119	0.11	13,000	33.78	17,000
J12	0.11	13,000	52.90	32,000
J120	0.11	13,000	32.39	16,000
J121	0.11	13,000	29.71	16,000
J122	0.11	13,000	23.29	14,000
J123	0.11	13,000	23.35	14,000
J124	0.11	13,000	29.83	16,000
J125	0.11	13,000	27.27	15,000
J128	0.00	6,000	51.65	13,000
J129	0.11	13,000	22.95	14,000
J130	0.11	13,000	26.54	15,000
J131	0.11	13,000	23.03	14,000
J132	0.11	13,000	26.43	15,000
J133	0.11	13,000	25.95	15,000
J134	0.11	13,000	22.85	14,000
J135	0.11	13,000	23.25	14,000
J136	0.11	13,000	25.15	14,000
J137	0.11	6,000	32.53	7,000
J14	0.11	6,000	50.15	12,000
J15	0.07	13,000	48.53	25,000
J152	0.11	13,000	46.54	23,000
J153	0.15	13,000	42.30	20,000
J154	0.11	13,000	36.63	18,000
J155	0.11	13,000	35.48	17,000
J156	0.00	13,000	31.86	16,000
J158	0.00	13,000	39.85	19,000
J16	0.07	13,000	47.76	24,000
J162	0.00	13,000	38.51	19,000
J164	0.00	13,000	36.86	18,000
J166	0.00	13,000	31.75	16,000
J168	0.00	13,000	28.63	15,000
J17	0.07	13,000	46.35	23,000
J170	0.00	13,000	23.26	14,000
J172	0.00	13,000	39.11	19,000
J174	0.15	13,000	40.55	19,000
J176	0.15	13,000	40.26	19,000
J178	0.08	13,000	40.57	19,000
J18	0.07	13,000	45.44	22,000
J180	0.08	13,000	40.03	19,000
J182	0.08	13,000	39.80	19,000
J184	0.08	13,000	39.81	19,000
J186	0.08	13,000	41.19	20,000
J188	0.00	13,000	38.32	18,000
J19	0.10	13,000	43.99	21,000
J20	0.10	13,000	44.59	22,000
J21	0.10	13,000	43.81	21,000
J22	0.10	13,000	44.32	22,000
J23	0.10	13,000	44.26	21,000
J24	0.10	13,000	44.01	21,000
J25	0.10	13,000	43.82	21,000
J26	0.10	13,000	44.10	21,000
J27	0.10	13,000	44.59	22,000
J28	0.10	13,000	44.71	22,000
J29	0.10	13,000	45.04	22,000
J30	0.07	13,000	45.65	22,000
J31	0.07	13,000	46.08	23,000
J32	0.07	13,000	46.61	23,000
J33	0.07	13,000	47.37	24,000
J34	0.07	13,000	48.16	24,000
J35	0.07	13,000	48.80	25,000
J36	0.07	13,000	50.10	26,000
J37	0.08	13,000	43.11	21,000
J38	0.08	13,000	42.37	20,000
J39	0.08	13,000	41.67	20,000
J40	0.11	13,000	52.60	31,000
J41	0.11	13,000	40.08	19,000
J42	0.11	13,000	39.51	19,000
J43	0.11	13,000	37.87	18,000
J44	0.11	13,000	36.34	18,000
J45	0.11	13,000	33.18	17,000
J46	0.11	13,000	52.29	30,000
J48	0.11	13,000	51.93	30,000
J50	0.11	13,000	44.52	22,000
J51	0.11	13,000	44.20	21,000
J52	0.11	13,000	41.04	20,000
J53	0.11	13,000	40.35	19,000
J55	0.11	13,000	42.46	20,000
J56	0.11	13,000	37.12	18,000
J57	0.11	13,000	39.08	19,000
J58	0.11	13,000	37.63	18,000
J59	0.11	13,000	33.31	16,000
J60	0.11	13,000	29.37	15,000
J61	0.11	13,000	28.96	15,000
J62	0.11	13,000	33.01	16,000
J63	0.11	13,000	32.97	16,000
J64	0.11	13,000	29.49	15,000
J65	0.11	13,000	29.56	15,000
J66	0.11	13,000	33.75	17,000
J67	0.11	13,000	33.92	17,000
J68	0.11	13,000	29.43	15,000
J69	0.11	13,000	29.46	15,000
J70	0.11	13,000	32.92	16,000
J71	0.11	13,000	32.99	16,000
J72	0.11	13,000	29.36	15,000
J73	0.11	13,000	29.53	15,000
J74	0.11	13,000	32.78	16,000
J75	0.10	13,000	35.75	17,000
J76	0.10	13,000	40.43	19,000
J77	0.10	13,000	35.66	17,000
J78	0.07	13,000	41.59	20,000
J79	0.07	13,000	38.58	18,000
J80	0.15	13,000	31.52	16,000
J81	0.15	13,000	41.51	20,000
J82	0.15	13,000	41.49	20,000
J83	0.15	13,000	42.73	21,000
J84	0.15	13,000	43.17	21,000
J85	0.15	13,000	26.43	15,000
J86	0.15	13,000	22.78	14,000
J87	0.15	13,000	22.80	14,000
J88	0.15	13,000	26.90	15,000
J89	0.15	13,000	44.16	21,000
J90	0.15	13,000	35.62	17,000
J91	0.15	13,000	42.23	20,000
J92	0.15	13,000	31.56	16,000
J93	0.15	13,000	28.36	15,000
J94	0.08	13,000	40.38	19,000
J95	0.08	13,000	39.95	19,000
J96	0.08	13,000	39.97	19,000
J97	0.08	13,000	31.50	16,000
J98	0.00	13,000	39.70	19,000

Appendix E WATER AGE CALCULATIONS

163401660 - Barrhaven Conservancy

Water Age Assessment

Sizing Option A	Pipe Dimensions			Average Day Demand		Water Age		
Phase	Pipe Diameter	Pipe Length	Pipe Volume					
	(mm)	(m)	(m^3)	(L/s)	(m^3/s)	(s)	(h)	(d)
2	406	2,609	337.81	3.50	0.004	96,464	26.80	1.12
2	305	1,442	105.38	3.50	0.004	30,091	8.36	0.35
2	203	742	24.00	3.50	0.004	6,853	1.90	0.08
2	152	305	5.54	3.50	0.004	1,581	0.44	0.02
2	**Total**		***472.73***	***3.50***	***0.004***	***134,989***	***37.50***	***1.56***
3	406	2,609	337.81	6.64	0.007	50,906	14.14	0.59
3	305	2,326	169.96	6.64	0.007	25,612	7.11	0.30
3	203	2,001	64.75	6.64	0.007	9,757	2.71	0.11
3	152	427	7.75	6.64	0.007	1,167	0.32	0.01
3	**Total**		***580.27***	***6.64***	***0.007***	***87,442***	***24.29***	***1.01***
4	406	2,977	385.42	10.30	0.010	37,402	10.39	0.43
4	305	2,982	217.89	10.30	0.010	21,145	5.87	0.24
4	203	3,747	121.28	10.30	0.010	11,769	3.27	0.14
4	152	474	8.60	10.30	0.010	835	0.23	0.01
4	**Total**		***733.20***	***10.30***	***0.010***	***71,151***	***19.76***	***0.82***
Ultimate	406	2,977	385.42	13.92	0.014	27,691	7.69	0.32
Ultimate	305	2,982	217.89	13.92	0.014	15,654	4.35	0.18
Ultimate	203	6,024	194.98	13.92	0.014	14,008	3.89	0.16
Ultimate	152	555	10.08	13.92	0.014	724	0.20	0.01
Ultimate	**Total**		***808.38***	***13.92***	***0.014***	***58,078***	***16.13***	***0.67***

Sizing Option B	Pipe Dimensions			Average Day Demand		Water Age		
Phase	Pipe Diameter	Pipe Length	Pipe Volume					
	(mm)	(m)	(m^3)	(L/s)	(m^3/s)	(s)	(h)	(d)
2	406	0	0.00	3.50	0.004	0	0.00	0.00
2	305	3,933	287.37	3.50	0.004	82,059	22.79	0.95
2	203	742	24.00	3.50	0.004	6,853	1.90	0.08
2	152	305	5.54	3.50	0.004	1,581	0.44	0.02
2	**Total**		***316.90***	***3.50***	***0.004***	***90,493***	***25.14***	***1.05***
3	406	0	0.00	6.64	0.007	0	0.00	0.00
3	305	4,817	351.95	6.64	0.007	53,036	14.73	0.61
3	203	2,001	64.75	6.64	0.007	9,757	2.71	0.11
3	152	427	7.75	6.64	0.007	1,167	0.32	0.01
3	**Total**		***424.45***	***6.64***	***0.007***	***63,960***	***17.77***	***0.74***
4	406	0	0.00	10.30	0.010	0	0.00	0.00
4	305	5,841	426.75	10.30	0.010	41,413	11.50	0.48
4	203	3,747	121.28	10.30	0.010	11,769	3.27	0.14
4	152	474	8.60	10.30	0.010	835	0.23	0.01
4	**Total**		***556.64***	***10.30***	***0.010***	***54,017***	***15.00***	***0.63***
Ultimate	406	0	0.00	13.92	0.014	0	0.00	0.00
Ultimate	305	6,619	483.60	13.92	0.014	34,744	9.65	0.40
Ultimate	203	6,024	194.98	13.92	0.014	14,008	3.89	0.16
Ultimate	152	555	10.08	13.92	0.014	724	0.20	0.01
Ultimate	**Total**		***688.66***	***13.92***	***0.014***	***49,477***	***13.74***	***0.57***

Kennedy-Burnett Potable Water Master Servicing Study

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

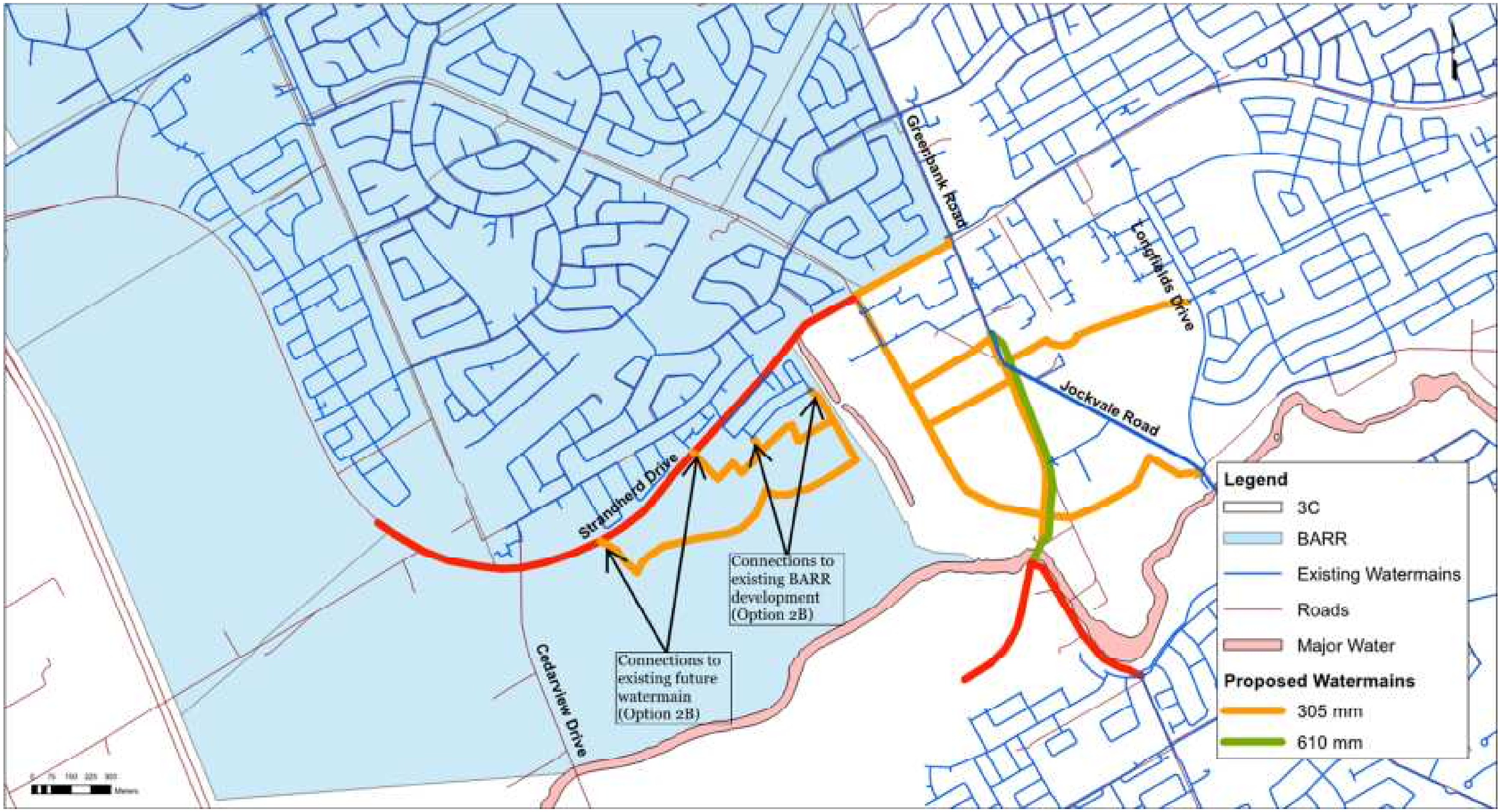

Figure 2-6: Proposed Pipe Layout Post Zone Reconfiguration – Scenario 2B

APPENDIX C

SANITARY

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M E M O R A N D U M

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.

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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

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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)

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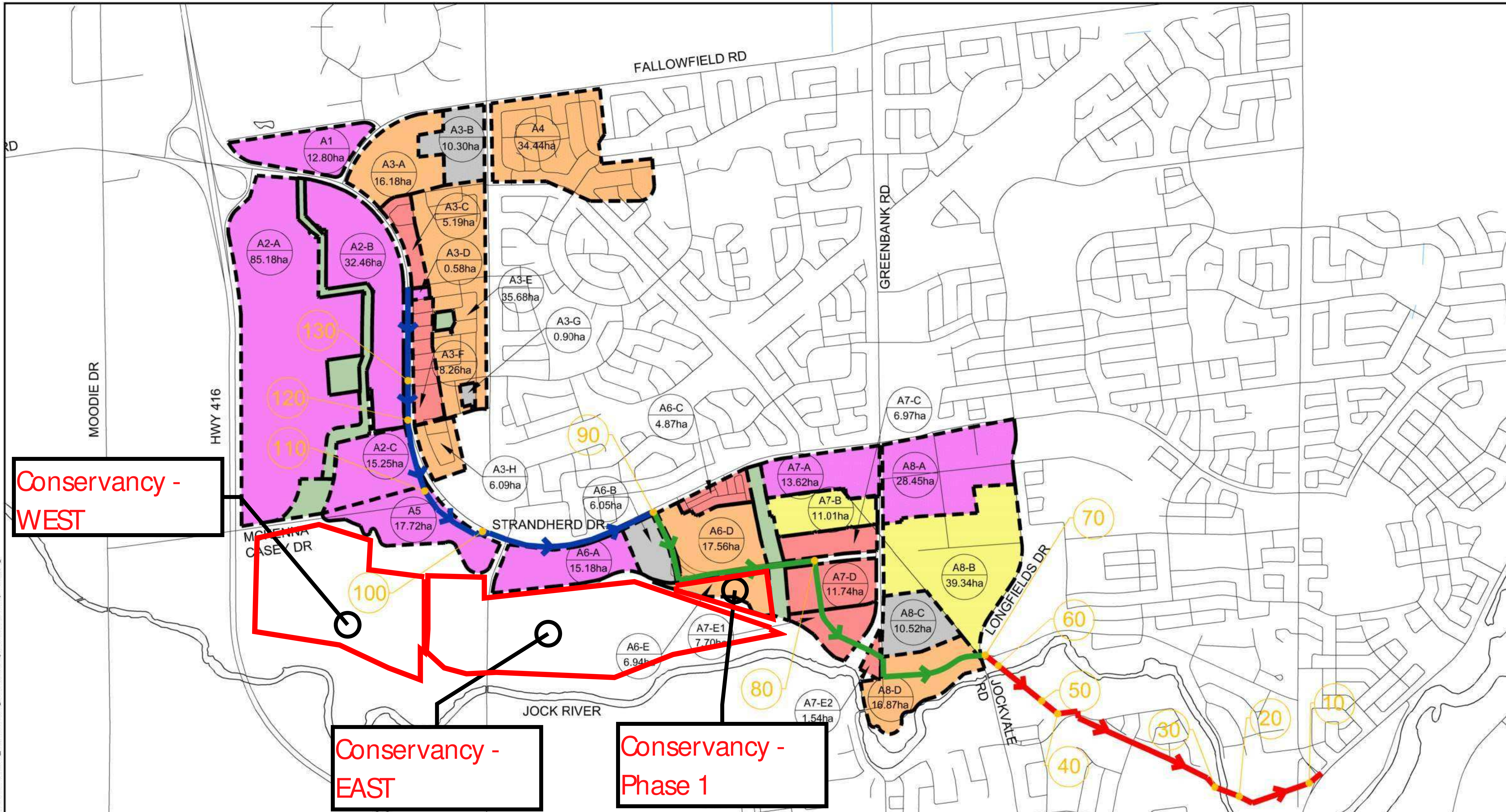
Table 6: Updated Allocation of Commercial, Institutional and Residential Demands to Phases 2 & 3 (Nodes 70 – 130) of the SNC by Collection Area

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)



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 2019	117190	FIG. 1

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

SANITARY SEWER DESIGN SHEET

South Nepean Collector - Phase 2 & 3

Theoretical Current Operational Peak Wastewater Flow

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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 ~401.58 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

NOVATECH
Engineers, Planners & Landscape Architects

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.

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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**.

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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

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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)

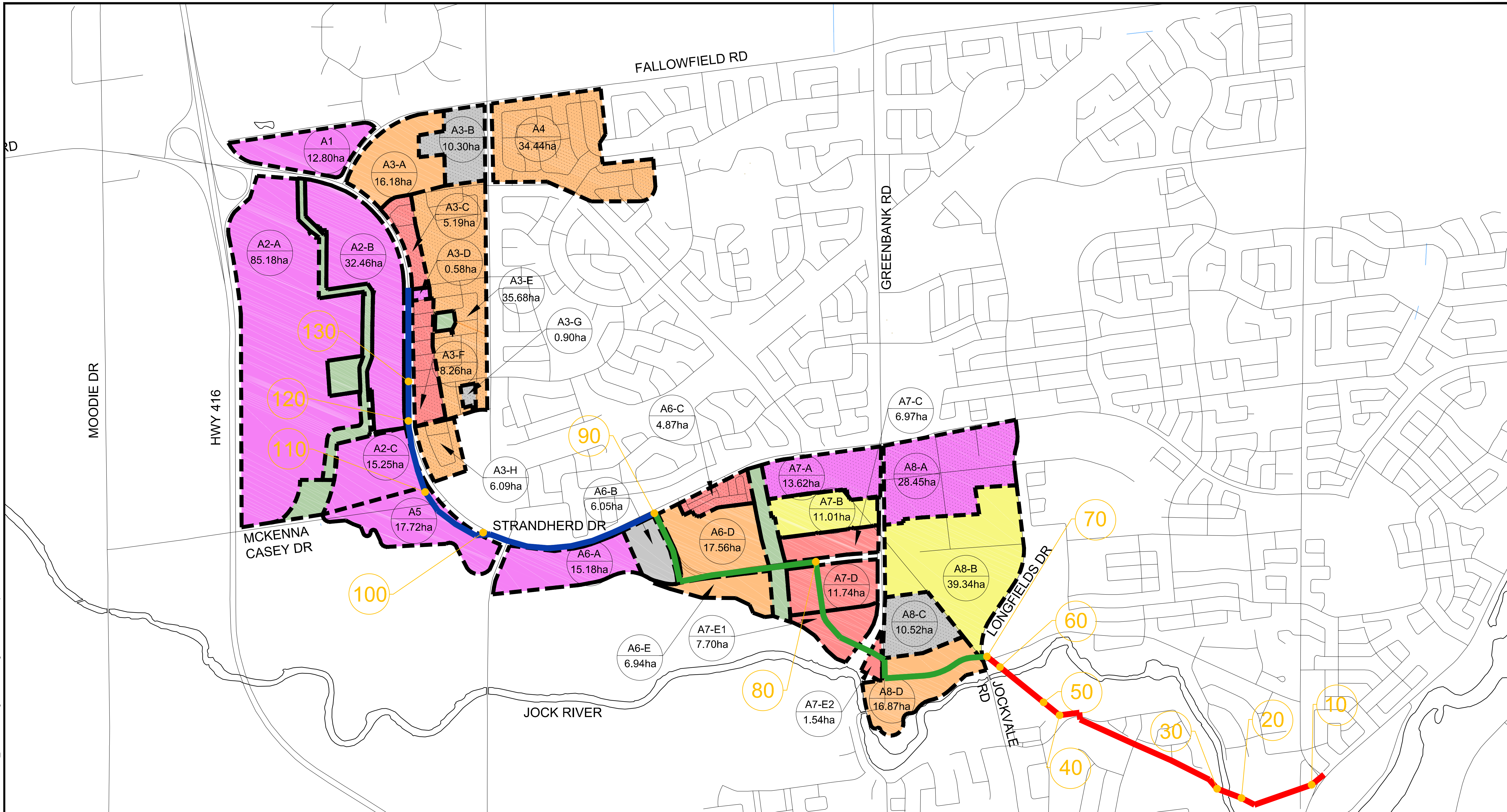
Table 6: Updated Allocation of Commercial, Institutional and Residential Demands to Phases 2 & 3 (Nodes 70 – 130) of the SNC by Collection Area

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

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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 2016	JOB 115075	FIGURE FIG. 1

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SHT11X17.DWG - 279mmX432mm

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 PARAMTERS AT THIS SAME NODE WITH CONSERVANCY WEST AND EAST INCLUDED IS ~401.58 < 423.6 L/S

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

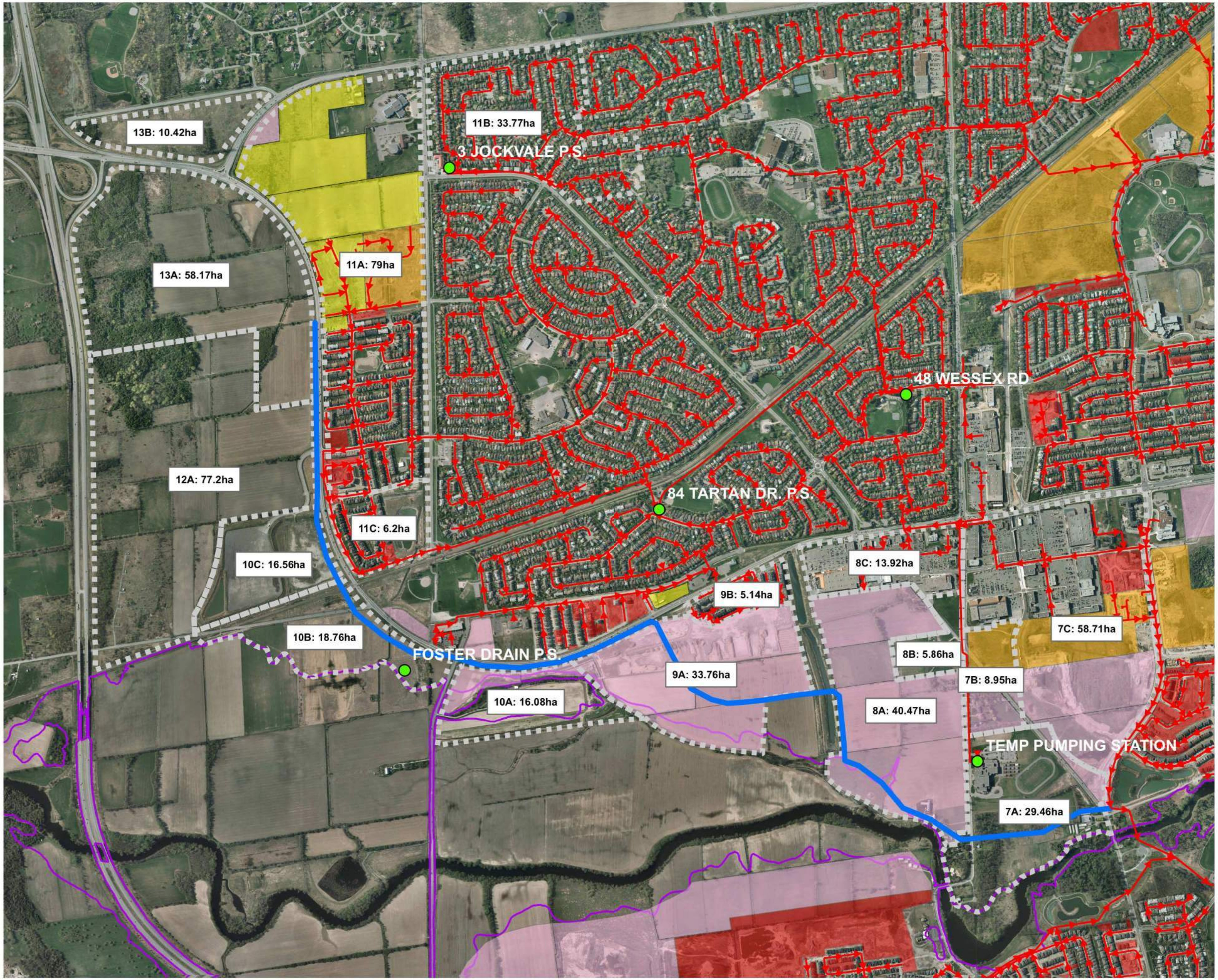
Where: P = population; K = correction factor = 1.0

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

N
W
E
S

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.

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2012 Operational current day

CITY OF OTTAWA

SOUTH NEPEAN COLLECTOR SEWER

SANITARY SEWER DESIGN SHEET - Operational Service (Average Flow Design Parameters)

Sheet 1 of 1

TRIBUTARY AREA	Design Factors	LOCATION FROM	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

DILLON CONSULTING

Project 11-5681

DESIGN	DJG
CHECKED	
TODAY:	7/18/2012

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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	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 (Sidewalks, roads)	TOTAL AREA (Gross ICI plus Gross Residential)
13A	1			58.5	43.9	14.6	0.0	0.0	0.0	58.5
13B	1		Node 130	12.5	9.4	3.1	0.0	0.0	0.0	12.5
12A	1	Node 130		77.2	57.9	19.3	0.0	0.0	0.0	77.2
11A	1			12.5	9.4	3.1	66.5	39.9	26.6	79.0
11B	1		Node 120	0.0	0.0	0.0	37.0	22.2	14.8	37.0
11C		Node 120		0.0	0.0	0.0	6.2	3.7	2.5	6.2
10C	1		Node 110	16.6	12.5	4.2	0.0	0.0	0.0	16.6
10B	1	Node 110	Node 100	18.8	14.1	4.7	0.0	0.0	0.0	18.8
10A	1	Node 100	Node 90	0.0	0.0	0.0	16.1	9.7	6.4	16.1
9A	1	Node 90	Node 80	0.0	0.0	0.0	33.8	18.6	15.2	33.8
8A	1	Node 80		0.0	0.0	0.0	40.0	24.1	15.9	40.0
8B	1			5.9	4.4	1.5	0.0	0.0	0.0	5.9
8C	1			13.9	10.4	3.5	0.0	0.0	0.0	13.9
7A	1			13.5	10.1	3.4	16.5	5.2	11.3	30.0
7B	1		Node 70	0.0	0.0	0.0	9.2	6.2	3.0	9.2
							225.3	129.7		454.7

TRIBUTARY AREA	INDIVIDUAL POP	DENSITY (pers/net ha.)	CUMULATIVE POP	Total I/C and Res AREA (ha.)	RESIDENTIAL PEAKING FACTOR	RESIDENT. FLOW (L/s)	COMMERCIAL & INSTITUTION PEAKING FACTOR	I/C CUM. AREA	I/C FLOW (l/s)	INFIL. INFLOW Q(p) (L/s)	PEAK DESIGN FLOW Q(d) (L/s)
13A	0		0	58.5	4.50	0.00	1.50	58.50	50.90	16.38	67.28
13B	0		0	71.0	4.50	0.00	1.50	71.00	61.77	19.88	81.65
12A	0		0	148.2	4.50	0.00	1.50	148.20	128.93	41.50	170.43
11A	3923	98.32	3923	227.2	3.34	53.09	1.50	160.70	139.81	63.62	256.52
11B	1550	69.82	5473	264.2	3.21	71.13	1.50	160.70	139.81	73.98	284.92
11C	306	82.26	5779	270.4	3.19	74.59	1.50	160.70	139.81	75.71	290.11
10C	0		5779	287.0	3.19	74.59	1.50	177.30	154.25	80.36	309.20
10B	0		5779	305.8	3.19	74.59	1.50	196.10	170.61	85.62	330.82
10A	1533	158.04	7312	321.9	3.09	91.48	1.50	196.10	170.61	90.13	352.22
9A	2161	116.18	9473	355.7	2.98	114.28	1.50	196.10	170.61	99.60	384.48
8A	12047	499.88	21520	395.7	2.62	228.45	1.50	196.10	170.61	110.80	509.85
8B	0		21520	401.6	2.62	228.45	1.50	202.00	175.74	112.45	516.64
8C	0		21520	415.5	2.62	228.45	1.50	215.90	187.83	116.34	532.62
7A	1637	314.81	23157	445.5	2.59	242.84	1.50	229.40	199.58	124.74	567.16
7B	3980	638.84	27137	454.7	2.52	277.05	1.50	229.40	199.58	127.32	603.94
	27,137.0										

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)	PEAK 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	0.81	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												

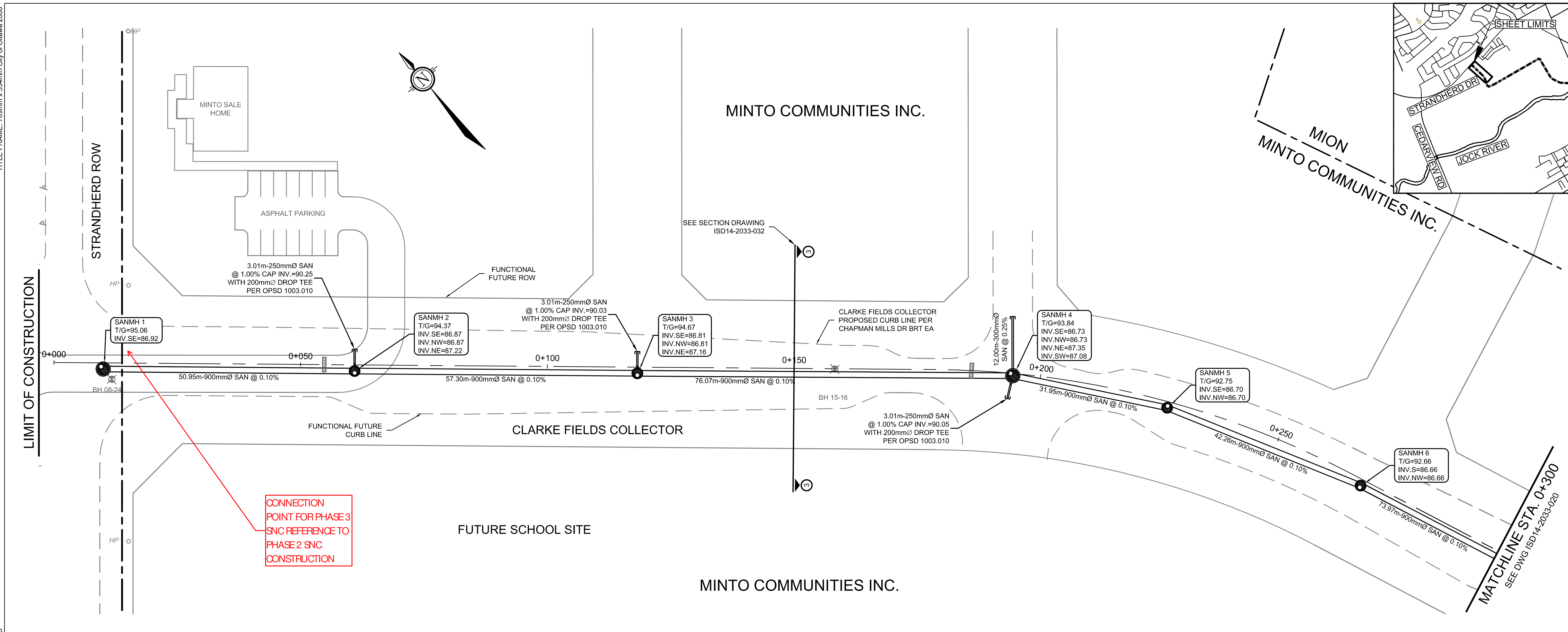
DEFAULTS

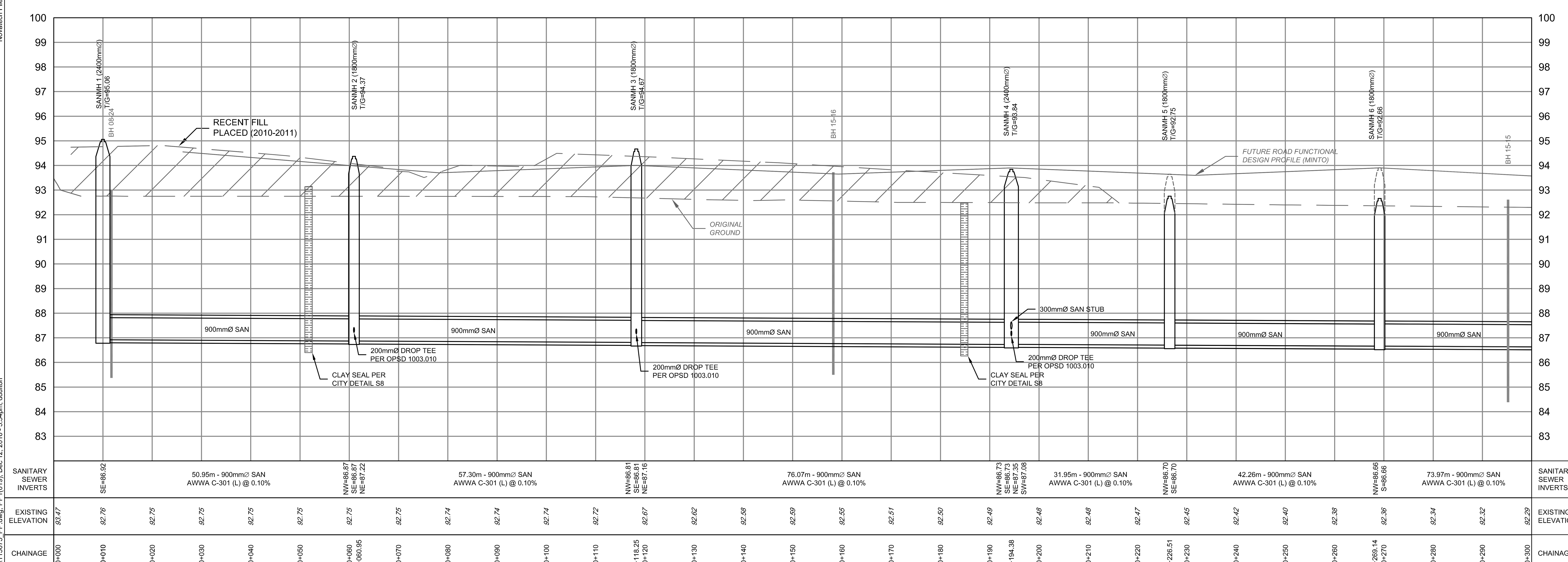
q=AVERAGE DAILY FLOW	350	L/CAP.D
I=UNIT OF PEAK EXTR.FLOW	0.280	L/Ha.s
Mannings 'n'	0.013	
q=AVERAGE COMMERCIAL AND INSTITUTIONAL	0.58	L/Ha.s

DESIGN	DJG
CHECKED	
TODAY:	7/18/2012

DILLON CONSULTING

Project 11-5681





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

Ottawa

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 (0 5 10 15 20) VERTICAL 1:100 (0 1 2 3 4)

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		PROPOSED ITEMS	
WATERMAIN		SANITARY SEWER	
WATERMAIN VALVE		SANITARY MH & LID	
STORM SEWER		CULVERT	
STORM MH	STM	FUTURE STRUCTURE T/G ADJUSTMENT	
CATCH BASIN & LEAD	CB		
CULVERT			
STORM STRUCTURE			
SANITARY SEWER			
SANITARY MH	SAN		

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)

TITLE FRAME: 709mm x 534mm City of Ottawa 2008

Novatech File No. 115075

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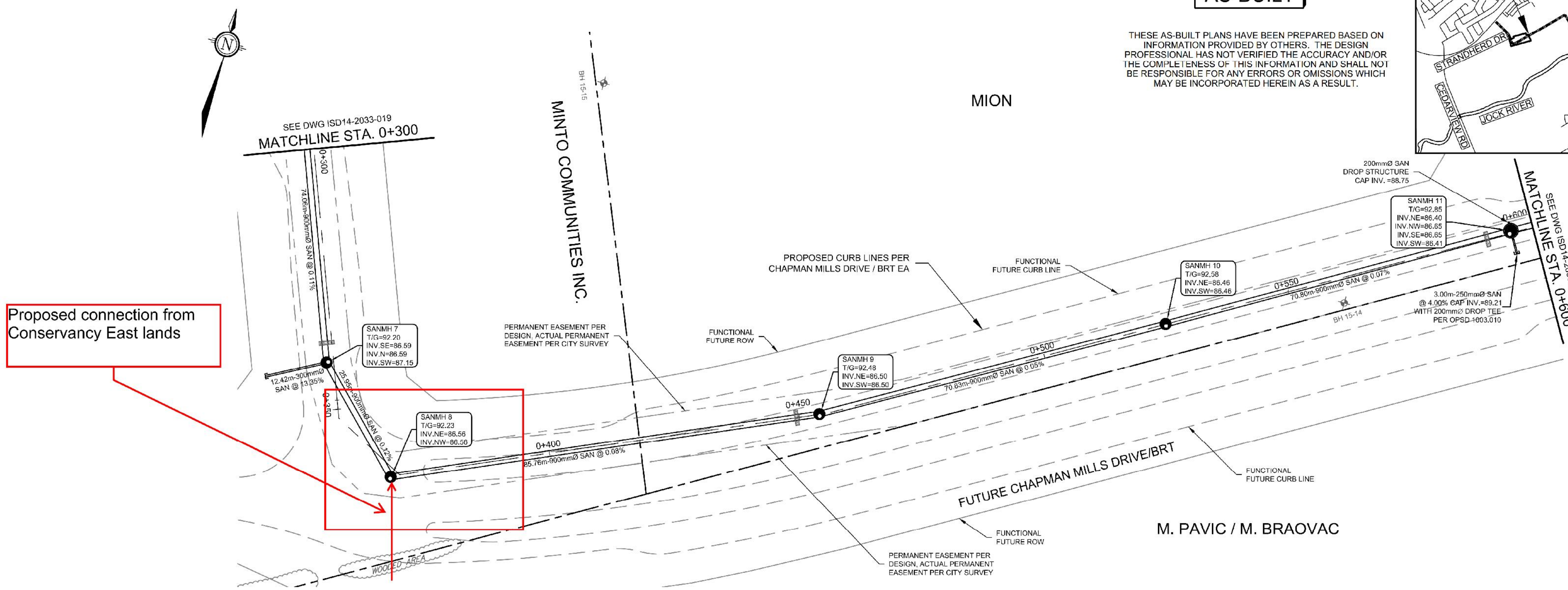
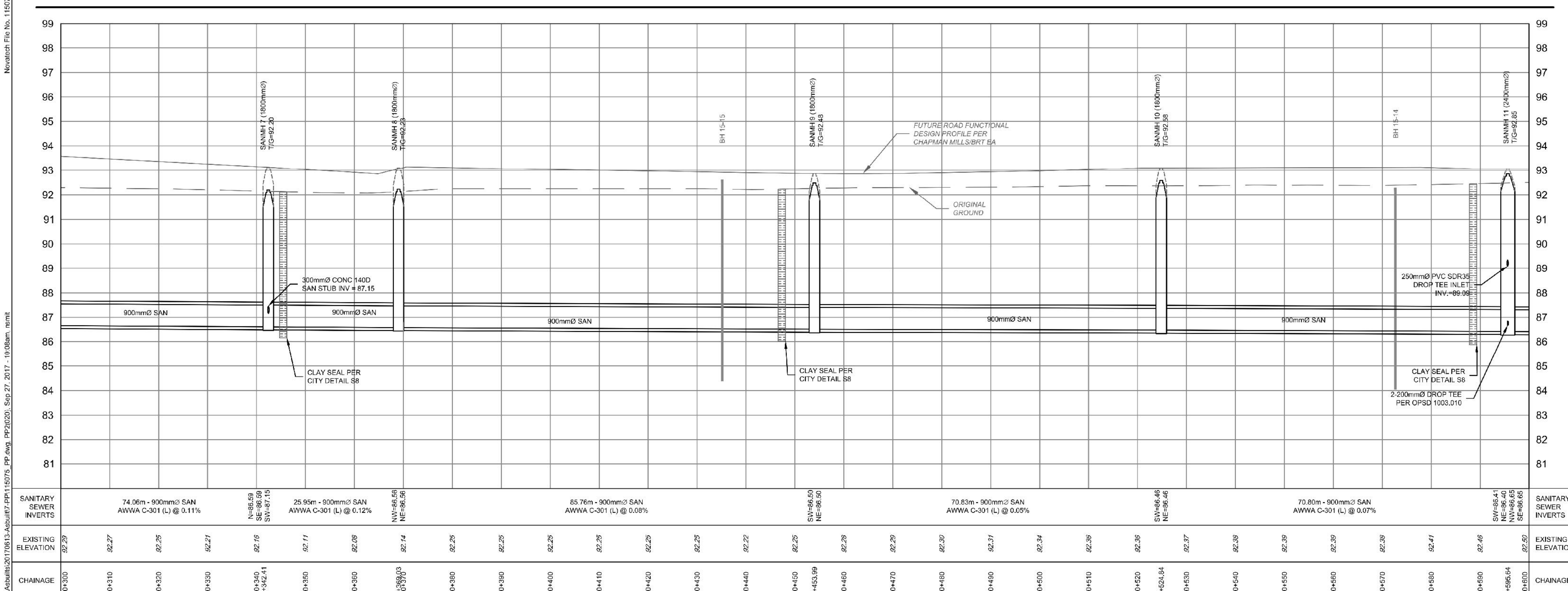
AS-BUILT

THESE AS-BUILT PLANS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE DESIGN PROFESSIONAL HAS NOT VERIFIED THE ACCURACY AND/OR THE COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.





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

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)

Novatech File No. 115075
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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)
Centerline13 - 13																											
	529A	530A	0.15		16	0.15	16	3.7	0.19		0.00		0.00		0.00	0.00	0.15	0.15	0.04	0.24	20.5	200	0.65	26.44	0.01	0.84	0.26
			0.19		20	0.34	36				0.00		0.00		0.00		0.19	0.34									
	530A	534A	0.26		53	0.60	89	3.6	1.04		0.00		0.00		0.00	0.00	0.26	0.60	0.17	1.21	70.5	250	0.25	29.73	0.04	0.61	0.29
			0.22		23	0.82	112				0.00		0.00		0.00		0.22	0.82									
	534A	531A	0.26		28	1.08	140	3.6	1.62		0.00		0.00		0.00	0.00	0.26	1.08	0.31	1.92	82.0	250	0.25	29.73	0.06	0.61	0.34
To Centerline1 - 01, Pipe 531A - 532A						1.08	140				0.00		0.00		0.00			1.08									
Centerline9 - 09																											
	525A	527A	0.62		65	0.62	65	3.6	0.77		0.00		0.00		0.00	0.00	0.62	0.62	0.18	0.94	104.0	200	0.65	26.44	0.04	0.84	0.39
To Centerline6 - 06, Pipe 527A - 528A						0.62	65				0.00		0.00		0.00			0.62									
Centerline6 - 06																											
	526A	527A	0.21		22	0.21	22	3.7	0.26		0.00		0.00	0.64	0.64	0.07	0.85	0.85	0.24	0.58	63.0	200	0.65	26.44	0.02	0.84	0.34
Contribution From Centerline9 - 09, Pipe 525A - 527A						0.62	65				0.00		0.00		0.00		0.62	1.47									
	527A	528A	0.12		12	0.95	99	3.6	1.15		0.00		0.00		0.64	0.07	0.12	1.59	0.45	1.68	44.5	200	0.35	19.40	0.09	0.62	0.37
To Centerline14 - 14, Pipe 528A - 531A						0.95	99				0.00		0.00		0.64			1.59									
Centerline14 - 14																											
	523A	524A				0.00				1.47	1.47		0.00		0.00	0.48	1.47	1.47	0.42	0.90	26.5	200	0.65	26.44	0.03	0.84	0.39
			0.25		26	0.25	26				1.47		0.00		0.00		0.25	1.72									
	524A	528A	0.45		47	0.70	73	3.6	0.86		1.47		0.00		0.00	0.48	0.45	2.17	0.62	1.95	117.5	200	0.35	19.40	0.10	0.62	0.39
Contribution From Centerline6 - 06, Pipe 527A - 528A						0.95	99				0.00		0.00		0.64		1.59	3.76									
	528A	531A	0.17		18	1.82	190	3.5	2.17		1.47		0.00		0.64	0.55	0.17	3.93	1.12	3.84	48.5	200	0.35	19.40	0.20	0.62	0.48
To Centerline1 - 01, Pipe 531A - 532A						1.82	190				1.47		0.00		0.64			3.93									
Centerline8 - 08																											
	533A	522A	0.16		14	0.16	14	3.7	0.17		0.00		0.00		0.00	0.00	0.16	0.16	0.05	0.21	40.5	200	0.65	26.44	0.01	0.84	0.24
	522A	520A				0.16	14	3.7	0.17		0.00		0.00		0.00	0.00	0.00	0.16	0.05	0.21	13.0	200	0.35	19.40	0.01	0.62	0.20
	520A	521A	0.86		72	1.02	86	3.6	1.01		0.00		0.00		0.00	0.00	0.86	1.02	0.29	1.30	137.0	250	0.25	29.73	0.04	0.61	0.30
To Centerline1 - 01, Pipe 521A - 531A						1.02	86				0.00		0.00		0.00			1.02									
Centerline15 - 15																											
	501A	503A	0.68		71	0.68	71	3.6	0.83		0.00		0.00		0.00	0.00	0.68	0.68	0.19	1.03	101.0	200	0.65	26.44	0.04	0.84	0.40
To Centerline4 - 04, Pipe 503A - 509A						0.68	71				0.00		0.00		0.00			0.68									
	502A	503A	0.49		51	0.49	51	3.7	0.60		0.00		0.00		0.00	0.00	0.49	0.49	0.14	0.74	21.0	200	0.65	26.44	0.03	0.84	0.37
To Centerline4 - 04, Pipe 503A - 509A						0.49	51				0.00		0.00		0.00			0.49									
Centerline4 - 04																											
Contribution From Centerline15 - 15, Pipe 501A - 503A						0.68	71				0.00		0.00		0.00		0.68	0.68									
Contribution From Centerline15 - 15, Pipe 502A - 503A						0.49	51				0.00		0.00		0.00		0.49	1.17									
	503A	509A	0.50		52	1.67	174	3.5	1.99		0.00		0.00		0.00	0.00	0.50	1.67	0.48	2.47	108.5	250	0.25	29.73	0.08	0.61	0.36
To Centerline11 - 11, Pipe 509A - 510A						1.67	174				0.00		0.00		0.00			1.67									
Centerline2 - 02																											
	507A	508A	0.41		43	0.41	43	3.7	0.51		0.00		0.00		0.00	0.00	0.41	0.41	0.12	0.63	93.5	200	0.65	26.44	0.02	0.84	0.35
To Centerline11 - 11, Pipe 508A - 509A						0.41	43				0.00		0.00		0.00			0.41									

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 =		0.286	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.S.	PROJECT: Barrhaven Conservancy East Phase 5		
Checked: W.L./V.W.	LOCATION: City of Ottawa		
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.	File Ref:	Date: 01 Dec 2022	Sheet No 1 of 2

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)
Centerline11 - 11																											
			0.21		22	0.21	22				0.00		0.00		0.00		0.21	0.21									
	504A	505A	0.27		28	0.48	50	3.7	0.59		0.00		0.00		0.00	0.00	0.27	0.48	0.14	0.73	85.5	200	0.65	26.44	0.03	0.84	0.36
	505A	506A	0.13		14	0.61	64	3.6	0.75		0.00		0.00		0.00	0.00	0.13	0.61	0.17	0.93	10.5	200	0.35	19.40	0.05	0.62	0.31
	506A	508A	0.17		18	0.78	82	3.6	0.96		0.00		0.00		0.00	0.00	0.17	0.78	0.22	1.18	40.0	250	0.25	29.73	0.04	0.61	0.29
Contribution From Centerline2 - 02, Pipe 507A - 508A						0.41	43				0.00		0.00		0.00		0.41	1.19									
	508A	509A	0.19		20	1.38	145	3.6	1.67		0.00		0.00		0.00	0.00	0.19	1.38	0.39	2.07	47.5	250	0.25	29.73	0.07	0.61	0.34
Contribution From Centerline4 - 04, Pipe 503A - 509A						1.67	174				0.00		0.00		0.00		1.67	3.05									
	509A	510A	0.20		21	3.25	340	3.4	3.79		0.00		0.00		0.00	0.00	0.20	3.25	0.93	4.72	48.0	250	0.25	29.73	0.16	0.61	0.44
	510A	511A	0.03		0	3.28	340	3.4	3.79		0.00		0.00		0.00	0.00	0.03	3.28	0.94	4.73	12.5	250	0.25	29.73	0.16	0.61	0.44
	511A	519A	0.09		0	3.37	340	3.4	3.79		0.00		0.00		0.00	0.00	0.09	3.37	0.96	4.76	59.5	250	0.25	29.73	0.16	0.61	0.44
To Centerline1 - 01, Pipe 519A - 521A						3.37	340				0.00		0.00		0.00			3.37									
Centerline10 - 10																											
	512A	513A	0.65		54	0.65	54	3.6	0.64		0.00		0.00		0.00	0.00	0.65	0.65	0.19	0.82	37.5	200	0.65	26.44	0.03	0.84	0.38
	513A	535A	0.23		34	0.88	88	3.6	1.03		0.00		0.00		0.00	0.00	0.23	0.88	0.25	1.28	48.0	200	0.35	19.40	0.07	0.62	0.34
To Centerline3 - 03, Pipe 535A - 518A						0.88	88				0.00		0.00		0.00			0.88									
	536A	514A	0.19		34	0.19	34	3.7	0.41		0.00		0.00		0.00	0.00	0.19	0.19	0.05	0.46	47.5	200	0.65	26.44	0.02	0.84	0.32
	514A	515A	0.15		12	0.34	46	3.7	0.55		0.00		0.00		0.00	0.00	0.15	0.34	0.10	0.64	11.0	200	0.35	19.40	0.03	0.62	0.28
	515A	519A	0.63		52	0.97	98	3.6	1.14		0.00		0.00		0.00	0.00	0.63	0.97	0.28	1.42	119.5	250	0.25	29.73	0.05	0.61	0.31
To Centerline1 - 01, Pipe 519A - 521A						0.97	98				0.00		0.00		0.00			0.97									
Centerline3 - 03																											
Contribution From Centerline10 - 10, Pipe 513A - 535A						0.88	88				0.00		0.00		0.00		0.88	0.88									
	535A	518A	0.54		45	1.42	133	3.6	1.54		0.00		0.00		0.00	0.00	0.54	1.42	0.41	1.94	109.0	250	0.25	29.73	0.07	0.61	0.34
To Centerline1 - 01, Pipe 518A - 519A						1.42	133				0.00		0.00		0.00			1.42									
Centerline1 - 01																											
			0.33		27	0.33	27			13.70	13.70		0.00	3.47	3.47		17.50	17.50									
			0.43		45	0.76	72				13.70		0.00		3.47		0.43	17.93									
	516A	518A	36.45		3771	37.21	3843	2.9	35.86		13.70		0.00		3.47	4.81	36.45	54.38	15.55	56.22	112.5	450	0.15	110.42	0.51	0.69	0.70
Contribution From Centerline3 - 03, Pipe 535A - 518A						1.42	133				0.00		0.00		0.00		1.42	55.80									
	518A	519A	0.24		25	38.87	4001	2.9	37.17		13.70		0.00		3.47	4.81	0.24	56.04	16.03	58.01	63.5	525	0.11	142.64	0.41	0.66	0.62
Contribution From Centerline11 - 11, Pipe 511A - 519A						3.37	340				0.00		0.00		0.00		3.37	59.41									
Contribution From Centerline10 - 10, Pipe 515A - 519A						0.97	98				0.00		0.00		0.00		0.97	60.38									
	519A	521A	0.19		20	43.40	4459	2.8	40.93		13.70		0.00		3.47	4.81	0.19	60.57	17.32	63.07	59.0	525	0.10	136.00	0.46	0.63	0.61
Contribution From Centerline8 - 08, Pipe 520A - 521A						1.02	86				0.00		0.00		0.00		1.02	61.59									
	521A	531A	0.20		21	44.62	4566	2.8	41.80		13.70		0.00		3.47	4.81	0.20	61.79	17.67	64.29	59.5	525	0.10	136.00	0.47	0.63	0.62
Contribution From Centerline14 - 14, Pipe 528A - 531A						1.82	190				1.47		0.00		0.64		3.93	65.72									
Contribution From Centerline13 - 13, Pipe 534A - 531A						1.08	140				0.00		0.00		0.00		1.08	66.80									
	531A	532A	0.10		0	47.62	4896	2.8	44.47		15.17		0.00		4.11	5.36	0.10	66.90	19.13	68.96	55.0	525	0.10	136.00	0.51	0.63	0.63

Lower flows that what was previously projected (77.81 L/s) in the Phase 2, 3, & 4 sanitary design sheet downstream.

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 =	0.286	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.S.	PROJECT: Barrhaven Conservancy East Phase 5		
Checked: W.L./V.W.	LOCATION: City of Ottawa		
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.	File Ref:	Date: 01 Dec 2022	Sheet No 2 of 2

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	UNITS Singles	UNITS Townhouse	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)
Ainsworth Crescent																													
	80A	81A	0.51	10	10		34	0.51	34	3.68	0.41		0.00		0.00		0.00	0.00	0.51	0.51	0.17	0.57	69.0	200	0.65	26.44	0.02	0.84	0.34
	81A	82A	0.38	11	11		38	0.89	72	3.62	0.85		0.00		0.00		0.00	0.00	0.38	0.89	0.29	1.14	70.0	250	0.25	29.73	0.04	0.61	0.29
To Sapling Grove, Pipe 82A - 85A								0.89	72				0.00		0.00		0.00			0.89									
	78A	59A	0.07	1	1		4	0.07	4	3.76	0.05		0.00		0.00		0.00	0.00	0.07	0.07	0.02	0.07	13.0	200	0.65	26.44	0.00	0.84	0.17
	59A	60A	0.45	11	11		38	0.52	42	3.66	0.50		0.00		0.00		0.00	0.00	0.45	0.52	0.17	0.67	76.0	250	0.25	29.73	0.02	0.61	0.24
	60A	61A	0.41	12	12		41	0.93	83	3.61	0.97		0.00		0.00		0.00	0.00	0.41	0.93	0.31	1.28	75.0	250	0.25	29.73	0.04	0.61	0.30
To Sapling Grove, Pipe 61A - 82A								0.93	83				0.00		0.00		0.00			0.93									
Syringa Court																													
	55A	56A	0.14	2	2		7	0.14	7	3.74	0.08		0.00		0.00		0.00	0.00	0.14	0.14	0.05	0.13	11.0	200	0.65	26.44	0.00	0.84	0.22
	56A	57A	0.42	11	11		38	0.56	45	3.66	0.53		0.00		0.00		0.00	0.00	0.42	0.56	0.18	0.72	67.0	250	0.65	47.94	0.01	0.98	0.35
	57A	58A	0.34	10	10		34	0.90	79	3.62	0.93		0.00		0.00		0.00	0.00	0.34	0.90	0.30	1.22	67.5	250	0.25	29.73	0.04	0.61	0.29
To Sapling Grove, Pipe 58A - 61A								0.90	79				0.00		0.00		0.00			0.90									
	55A	53A	0.17	3	3		11	0.17	11	3.73	0.13		0.00		0.00		0.00	0.00	0.17	0.17	0.06	0.19	45.5	200	0.65	26.44	0.01	0.84	0.24
	53A	49A	0.08	1	1		4	0.25	15	3.72	0.18		0.00		0.00		0.00	0.00	0.08	0.25	0.08	0.26	9.0	250	0.25	29.73	0.01	0.61	0.18
	49A	50A	0.44	11	11		38	0.69	53	3.65	0.63		0.00		0.00		0.00	0.00	0.44	0.69	0.23	0.85	68.5	250	0.25	29.73	0.03	0.61	0.27
	50A	51A	0.34	10	10		34	1.03	87	3.61	1.02		0.00		0.00		0.00	0.00	0.34	1.03	0.34	1.36	66.5	250	0.25	29.73	0.05	0.61	0.31
To Sapling Grove, Pipe 51A - 58A								1.03	87				0.00		0.00		0.00			1.03									
Ecology Lane																													
	880A	88A	0.44	10	10		34	0.44	34	3.68	0.41		0.00		0.00		0.00	0.00	0.44	0.44	0.15	0.55	76.0	200	0.65	26.44	0.02	0.84	0.33
Contribution From Sapling Grove, Pipe 85A - 88A								5.48	453				0.00		0.00		0.00		5.48	5.92									
	88A	91A	0.18	4	4		14	6.10	501	3.38	5.49		0.00		0.00		0.00	0.00	0.18	6.10	2.01	7.50	60.0	250	0.25	29.73	0.25	0.61	0.50
Contribution From Peninsula Road, Pipe 90A - 91A								0.78	79				0.00		0.00		0.00		0.78	6.88									
	91A	92A	0.08				0	6.96	580	3.35	6.30		0.00		0.00		0.00	0.00	0.08	6.96	2.30	8.60	62.5	250	0.25	29.73	0.29	0.61	0.52
To Conservancy Drive, Pipe 92A - 93A								6.96	580				0.00		0.00		0.00			6.96									
Anemone Mews																													
			0.09				0	0.09	0				0.00		0.00		0.00	0.00	0.09	0.09									
Contribution From Peninsula Road, Pipe 62A - 63A								0.95	90				0.00		0.00		0.00		0.95	1.04									
Contribution From Peninsula Road, Pipe 89A - 63A								0.17	14				0.00		0.00		0.00		0.17	1.21									
	63A	75A	0.09				0	1.30	104	3.59	1.21		0.00		0.00		0.00	0.00	0.09	1.30	0.43	1.64	62.5	250	0.25	29.73	0.06	0.61	0.32
To Conservancy Drive, Pipe 75A - 76A								1.30	104				0.00		0.00		0.00			1.30									
Contribution From Les Emmerson Drive (N), Pipe 70A - 72A								1.09	99				0.00		0.00		0.00		1.09	1.09									
Contribution From Les Emmerson Drive (N), Pipe 71A - 72A								2.25	216				0.00		0.00		0.00		2.25	3.34									
	72A	74A	0.27	6	6		21	3.61	336	3.45	3.75		0.00		0.00		0.00	0.00	0.27	3.61	1.19	4.94	58.5	250	0.25	29.73	0.17	0.61	0.45
Contribution From Les Emmerson Drive (S), Pipe 69A - 74A								1.30	132				0.00		0.00		0.00		1.30	4.91									
Contribution From Les Emmerson Drive (S), Pipe 73A - 74A								0.71	76				0.00		0.00		0.00		0.71	5.62									
	74A	750A	0.26	6	6		21	5.88	565	3.36	6.15		0.00		0.00		0.00	0.00	0.26	5.88	1.94	8.09	52.0	250	0.25	29.73	0.27	0.61	0.51
	750A	75A	0.01				0	5.89	565	3.36	6.15		0.00		0.00		0.00	0.00	0.01	5.89	1.94	8.09	10.5	250	0.25	29.73	0.27	0.61	0.51
To Conservancy Drive, Pipe 75A - 76A								5.89	565				0.00		0.00		0.00			5.89									
Gallium Crescent																													
	30A	31A	0.37	10	10		34	0.37	34	3.68	0.41		0.00		0.00		0.00	0.00	0.37	0.37	0.12	0.53	65.0	200	0.65	26.44	0.02	0.84	0.33

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 =	1.50				Townhouse coeff= 2.7
Institutional =	0.32	l/s/Ha			Single house coeff= 3.4

Designed: A.K.	PROJECT: **BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER**		
Checked: W.L.	LOCATION: **City of Ottawa**		
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112	File Ref: 20-1180	Date: **Aug 2022**	Sheet No. 1 of 6

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
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	UNITS Singles	UNITS Townhouse	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)
	31A	32A	0.34	9	9		31	0.71	65	3.63	0.77		0.00		0.00		0.00	0.00	0.34	0.71	0.23	1.00	64.0	250	0.25	29.73	0.03	0.61	0.28
To Sapling Grove, Pipe 32A - 37A								0.71	65				0.00		0.00		0.00			0.71									
	30A	33A	0.13	2	2		7	0.13	7	3.74	0.08		0.00		0.00		0.00	0.00	0.13	0.13	0.04	0.13	9.5	200	0.65	26.44	0.00	0.84	0.22
	33A	34A	0.16	3	3		11	0.29	18	3.71	0.22		0.00		0.00		0.00	0.00	0.16	0.29	0.10	0.31	43.5	250	0.25	29.73	0.01	0.61	0.19
	34A	35A	0.12	1	1		4	0.41	22	3.70	0.26		0.00		0.00		0.00	0.00	0.12	0.41	0.14	0.40	11.5	250	0.25	29.73	0.01	0.61	0.21
	35A	36A	0.44	11	11		38	0.85	60	3.64	0.71		0.00		0.00		0.00	0.00	0.44	0.85	0.28	0.99	68.5	250	0.25	29.73	0.03	0.61	0.27
	36A	37A	0.31	9	9		31	1.16	91	3.60	1.06		0.00		0.00		0.00	0.00	0.31	1.16	0.38	1.45	61.5	250	0.25	29.73	0.05	0.61	0.31
To Mineral Street, Pipe 37A - 39A								1.16	91				0.00		0.00		0.00			1.16									
Pollination Place																													
	250A	26A	0.11	2	2		7	0.11	7	3.74	0.08		0.00		0.00		0.00	0.00	0.11	0.11	0.04	0.12	24.5	200	0.65	26.44	0.00	0.84	0.20
								0.11	7				0.00		0.00		0.00		0.00	0.11									
	26A	27A	0.09	1	1		4	0.20	11	3.73	0.13		0.00		0.00		0.00	0.00	0.09	0.20	0.07	0.20	11.0	200	0.65	26.44	0.01	0.84	0.24
	27A	28A	0.39	10	10		34	0.59	45	3.66	0.53		0.00		0.00		0.00	0.00	0.39	0.59	0.19	0.73	63.5	250	0.25	29.73	0.02	0.61	0.25
	28A	29A	0.34	10	10		34	0.93	79	3.62	0.93		0.00		0.00		0.00	0.00	0.34	0.93	0.31	1.23	62.5	250	0.25	29.73	0.04	0.61	0.29
To Sapling Grove, Pipe 29A - 32A								0.93	79				0.00		0.00		0.00			0.93									
	250A	25A	0.09	2	2		7	0.09	7	3.74	0.08		0.00		0.00		0.00	0.00	0.09	0.09	0.03	0.11	20.5	200	0.65	26.44	0.00	0.84	0.20
	25A	19A	0.04				0	0.13	7	3.74	0.08		0.00		0.00		0.00	0.00	0.04	0.13	0.04	0.13	8.0	250	0.25	29.73	0.00	0.61	0.15
								0.13	7				0.00		0.00		0.00		0.00	0.13									
	19A	20A	0.28	5	5		17	0.41	24	3.70	0.29		0.00		0.00		0.00	0.00	0.28	0.41	0.14	0.42	71.0	250	0.25	29.73	0.01	0.61	0.21
	20A	21A	0.19	4	4		14	0.60	38	3.67	0.45		0.00		0.00		0.00	0.00	0.19	0.60	0.20	0.65	54.5	250	0.25	29.73	0.02	0.61	0.24
To Sapling Grove, Pipe 21A - 29A								0.60	38				0.00		0.00		0.00			0.60									
Sapling Grove																													
Contribution From Pollination Place, Pipe 20A - 21A								0.60	38				0.00		0.00		0.00		0.60	0.60									
	21A	29A	0.23	3	3		11	0.83	49	3.65	0.58		0.00		0.00		0.00	0.00	0.23	0.83	0.27	0.85	59.0	250	0.25	29.73	0.03	0.61	0.27
Contribution From Pollination Place, Pipe 28A - 29A								0.93	79				0.00		0.00		0.00		0.93	1.76									
	29A	32A	0.25	5	5		17	2.01	145	3.56	1.67		0.00		0.00		0.00	0.00	0.25	2.01	0.66	2.33	58.5	250	0.25	29.73	0.08	0.61	0.36
Contribution From Gallium Crescent, Pipe 31A - 32A								0.71	65				0.00		0.00		0.00		0.71	2.72									
	32A	37A	0.19	4	4		14	2.91	224	3.50	2.54		0.00		0.00		0.00	0.00	0.19	2.91	0.96	3.50	58.5	250	0.25	29.73	0.12	0.61	0.40
To Mineral Street, Pipe 37A - 39A								2.91	224				0.00		0.00		0.00			2.91									
	510A	51A	0.18	3	3		11	0.18	11	3.73	0.13		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.19	48.5	200	0.65	26.44	0.01	0.84	0.24
Contribution From Syringa Court, Pipe 50A - 51A								1.03	87				0.00		0.00		0.00		1.03	1.21									
	51A	58A	0.25	5	5		17	1.46	115	3.58	1.33		0.00		0.00		0.00	0.00	0.25	1.46	0.48	1.82	58.5	250	0.25	29.73	0.06	0.61	0.33
Contribution From Syringa Court, Pipe 57A - 58A								0.90	79				0.00		0.00		0.00		0.90	2.36									
	58A	61A	0.19	4	4		14	2.55	208	3.51	2.37		0.00		0.00		0.00	0.00	0.19	2.55	0.84	3.21	58.5	250	0.25	29.73	0.11	0.61	0.39
Contribution From Ainsworth Crescent, Pipe 60A - 61A								0.93	83				0.00		0.00		0.00		0.93	3.48									
	61A	82A	0.22	4	4		14	3.70	305	3.46	3.42		0.00		0.00		0.00	0.00	0.22	3.70	1.22	4.64	60.0	250	0.25	29.73	0.16	0.61	0.44
Contribution From Ainsworth Crescent, Pipe 81A - 82A								0.89	72				0.00		0.00		0.00		0.89	4.59									
	82A	85A	0.18	4	4		14	4.77	391	3.42	4.34		0.00		0.00		0.00	0.00	0.18	4.77	1.57	5.91	58.5	250	0.25	29.73	0.20	0.61	0.47
Contribution From Meander Way, Pipe 84A - 85A								0.50	45				0.00		0.00		0.00		0.50	5.27									
	85A	88A	0.21	5	5		17	5.48	453	3.40	4.99		0.00		0.00		0.00	0.00	0.21	5.48	1.81	6.79	58.5	250	0.25	29.73	0.23	0.61	0.49
To Ecology Lane, Pipe 88A - 91A								5.48	453				0.00		0.00		0.00			5.48									

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	
Industrial Flow =	35000	L/ha/da	0.40509	
Max Res. Peak Factor =	4.00			
Commercial/Inst./Park Peak Factor =	1.50			
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

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
PROVINCE OF ONTARIO

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112

PROJECT: **BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER**

LOCATION: **City of Ottawa**

File Ref: 20-1180

Date: **Aug 2022**

Sheet No. 2 of 6

1180_SAN_DesSheets_Sub4.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	UNITS Singles	UNITS Townhouse	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)
Mineral Street																													
	430A	46A	0.29	6	6		21	0.29	21	3.70	0.25		0.00		0.00		0.00	0.00	0.29	0.29	0.10	0.35	45.5	200	0.65	26.44	0.01	0.84	0.29
Contribution From Les Emmerson Drive (S), Pipe 45A - 46A								0.87	95				0.00		0.00		0.00		0.87	1.16									
	46A	47A	0.29	6	6		21	1.45	137	3.56	1.58		0.00		0.00		0.00	0.00	0.29	1.45	0.48	2.06	62.5	250	0.25	29.73	0.07	0.61	0.34
To Conservancy Drive, Pipe 47A - 48A								1.45	137				0.00		0.00		0.00			1.45									
Contribution From Sapling Grove, Pipe 32A - 37A								2.91	224				0.00		0.00		0.00		2.91	2.91									
Contribution From Gallium Crescent, Pipe 36A - 37A								1.16	91				0.00		0.00		0.00		1.16	4.07									
	37A	39A	0.08				0	4.15	315	3.46	3.53		0.00		0.00		0.00	0.00	0.08	4.15	1.37	4.90	60.0	250	0.25	29.73	0.16	0.61	0.44
Contribution From Peninsula Road, Pipe 38A - 39A								1.05	83				0.00		0.00		0.00		1.05	5.20									
	39A	47A	0.08				0	5.28	398	3.42	4.41		0.00		0.00		0.00	0.00	0.08	5.28	1.74	6.15	62.5	250	0.25	29.73	0.21	0.61	0.47
To Conservancy Drive, Pipe 47A - 48A								5.28	398				0.00		0.00		0.00			5.28									
Les Emmerson Drive (S)																													
	44A	17A	0.39	16		16	44	0.39	44	3.66	0.52		0.00		0.00		0.00	0.00	0.39	0.39	0.13	0.65	73.0	200	0.65	26.44	0.02	0.84	0.35
To Les Emmerson Drive (N), Pipe 17A - 18A								0.39	44				0.00		0.00		0.00			0.39									
	44A	45A	0.64	27		27	73	0.64	73	3.62	0.86		0.00		0.00		0.00	0.00	0.64	0.64	0.21	1.07	111.0	200	0.65	26.44	0.04	0.84	0.41
	45A	46A	0.23	8		8	22	0.87	95	3.60	1.11		0.00		0.00		0.00	0.00	0.23	0.87	0.29	1.40	61.5	250	0.25	29.73	0.05	0.61	0.31
To Mineral Street, Pipe 46A - 47A								0.87	95				0.00		0.00		0.00			0.87									
	730A	73A	0.46	20		20	54	0.46	54	3.65	0.64		0.00		0.00		0.00	0.00	0.46	0.46	0.15	0.79	74.0	200	0.65	26.44	0.03	0.84	0.37
	73A	74A	0.25	8		8	22	0.71	76	3.62	0.89		0.00		0.00		0.00	0.00	0.25	0.71	0.23	1.13	68.5	250	0.25	29.73	0.04	0.61	0.29
To Anemone Mews, Pipe 74A - 750A								0.71	76				0.00		0.00		0.00			0.71									
	65A	66A	0.17	5		5	14	0.17	14	3.72	0.17		0.00		0.00		0.00	0.00	0.17	0.17	0.06	0.22	37.5	200	0.65	26.44	0.01	0.84	0.26
	66A	67A	0.14	3		3	9	0.31	23	3.70	0.28		0.00		0.00		0.00	0.00	0.14	0.31	0.10	0.38	11.0	250	0.25	29.73	0.01	0.61	0.20
	67A	69A	0.58	24		24	65	0.89	88	3.61	1.03		0.00		0.00		0.00	0.00	0.58	0.89	0.29	1.32	100.0	250	0.25	29.73	0.04	0.61	0.30
	69A	74A	0.41	16		16	44	1.30	132	3.57	1.53		0.00		0.00		0.00	0.00	0.41	1.30	0.43	1.95	93.0	250	0.25	29.73	0.07	0.61	0.34
To Anemone Mews, Pipe 74A - 750A								1.30	132				0.00		0.00		0.00			1.30									
Les Emmerson Drive (N)																													
	16A	17A	0.22	4	4		14	0.22	14	3.72	0.17		0.00		0.00		0.00	0.00	0.22	0.22	0.07	0.24	52.5	200	0.65	26.44	0.01	0.84	0.26
Contribution From Les Emmerson Drive (S), Pipe 44A - 17A								0.39	44				0.00		0.00		0.00		0.39	0.61									
	17A	18A	0.22	5	5		17	0.83	75	3.62	0.88		0.00		0.00		0.00	0.00	0.22	0.83	0.27	1.15	63.0	250	0.25	29.73	0.04	0.61	0.29
To Conservancy Drive, Pipe 18A - 23A								0.83	75				0.00		0.00		0.00			0.83									
	64A	70A	0.44	10	10		34	0.44	34	3.68	0.41		0.00		0.00		0.00	0.00	0.44	0.44	0.15	0.55	70.5	200	0.65	26.44	0.02	0.84	0.33
	70A	72A	0.65	19	19		65	1.09	99	3.60	1.15		0.00		0.00		0.00	0.00	0.65	1.09	0.36	1.51	119.0	250	0.25	29.73	0.05	0.61	0.31
To Anemone Mews, Pipe 72A - 74A								1.09	99				0.00		0.00		0.00			1.09									
	16A	40A	0.07	1	1		4	0.07	4	3.76	0.05		0.00		0.00		0.00	0.00	0.07	0.07	0.02	0.07	10.0	200	0.65	26.44	0.00	0.84	0.17
	40A	41A	0.36	10	10		34	0.43	38	3.67	0.45		0.00		0.00		0.00	0.00	0.36	0.43	0.14	0.59	58.0	250	0.65	47.94	0.01	0.98	0.33
	41A	42A	0.63	20	20		68	1.06	106	3.59	1.23		0.00		0.00		0.00	0.00	0.63	1.06	0.35	1.58	108.5	250	0.25	29.73	0.05	0.61	0.32
	42A	43A	0.31	7	7		24	1.37	130	3.57	1.50		0.00		0.00		0.00	0.00	0.31	1.37	0.45	1.96	64.5	250	0.25	29.73	0.07	0.61	0.34
	43A	71A	0.50	14	14		48	1.87	178	3.53	2.04		0.00		0.00		0.00	0.00	0.50	1.87	0.62	2.66	98.0	250	0.25	29.73	0.09	0.61	0.37
	71A	72A	0.38	11	11		38	2.25	216	3.51	2.46		0.00		0.00		0.00	0.00	0.38	2.25	0.74	3.20	76.5	250	0.25	29.73	0.11	0.61	0.39
To Anemone Mews, Pipe 72A - 74A								2.25	216				0.00		0.00		0.00			2.25									

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	
Industrial Flow =	35000	L/ha/da	0.40509	
Max Res. Peak Factor =	4.00			
Commercial/Inst./Park Peak Factor =	1.50			
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		

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER			
Checked: W.L.	LOCATION: City of Ottawa			
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112	File Ref: 20-1180	Date: Aug 2022	Sheet No. 3 of 6	

1180_SAN_DesSheets_Sub4.xlsx

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	UNITS Singles	UNITS Townhouse	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)
Deciduous Crescent																													
	8A	9A	0.44	17		17	46	0.44	46	3.66	0.55		0.00		0.00		0.00	0.00	0.44	0.44	0.15	0.69	62.0	200	0.65	26.44	0.03	0.84	0.36
	9A	11A	0.26	10		10	27	0.70	73	3.62	0.86		0.00		0.00		0.00	0.00	0.26	0.70	0.23	1.09	66.0	250	0.25	29.73	0.04	0.61	0.29
To Conservancy Drive, Pipe 11A - 15A								0.70	73				0.00		0.00		0.00			0.70									
	12A	13A	0.09	2		2	6	0.09	6	3.75	0.07		0.00		0.00		0.00	0.00	0.09	0.09	0.03	0.10	7.5	200	0.65	26.44	0.00	0.84	0.20
	13A	14A	0.38	15		15	41	0.47	47	3.66	0.56		0.00		0.00		0.00	0.00	0.38	0.47	0.16	0.71	66.0	250	0.25	29.73	0.02	0.61	0.25
	14A	15A	0.30	11		11	30	0.77	77	3.62	0.90		0.00		0.00		0.00	0.00	0.30	0.77	0.25	1.16	69.5	250	0.25	29.73	0.04	0.61	0.29
To Conservancy Drive, Pipe 15A - 18A								0.77	77				0.00		0.00		0.00			0.77									
Ephemeral Crescent																													
	2A	3A	0.16	1	1		4	0.16	4	3.76	0.05		0.00		0.00		0.00	0.00	0.16	0.16	0.05	0.10	13.0	200	0.70	27.44	0.00	0.87	0.19
			0.25	5	5		17	0.41	21				0.00		0.00		0.00		0.25	0.41									
	3A	4A	0.31	13		13	36	0.72	57	3.64	0.67		0.00		0.00		0.00	0.00	0.31	0.72	0.24	0.91	107.5	250	0.25	29.73	0.03	0.61	0.27
	4A	15A	0.35	9		9	25	1.07	82	3.61	0.96		0.00		0.00		0.00	0.00	0.35	1.07	0.35	1.31	112.0	250	0.25	29.73	0.04	0.61	0.30
To Conservancy Drive, Pipe 15A - 18A								1.07	82				0.00		0.00		0.00			1.07									
	5A	500A	0.14	6		6	17	0.14	17	3.71	0.20		0.00		0.00		0.00	0.00	0.14	0.14	0.05	0.25	21.0	200	0.65	26.44	0.01	0.84	0.26
	500A	6A	0.45	22		22	60	0.59	77	3.62	0.90		0.00		0.00		0.00	0.00	0.45	0.59	0.19	1.10	78.5	250	0.25	29.73	0.04	0.61	0.29
	6A	11A	0.48	21		21	57	1.07	134	3.57	1.55		0.00		0.00		0.00	0.00	0.48	1.07	0.35	1.90	104.5	250	0.25	29.73	0.06	0.61	0.34
To Conservancy Drive, Pipe 11A - 15A								1.07	134				0.00		0.00		0.00			1.07									
Borrisokane Road																													
	1002A	1001A	0.18	4		4	11	0.18	11	3.73	0.13		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.19	40.0	200	0.65	26.44	0.01	0.84	0.24
	1001A	10A	0.40	12		12	33	0.58	44	3.66	0.52		0.00		0.00		0.00	0.00	0.40	0.58	0.19	0.71	100.0	250	0.25	29.73	0.02	0.61	0.25
To Conservancy Drive, Pipe 10A - 11A								0.58	44				0.00		0.00		0.00			0.58									
	1004A	1003A	0.50	14		14	38	0.50	38	3.67	0.45		0.00		0.00		0.00	0.00	0.50	0.50	0.17	0.62	98.5	200	0.65	26.44	0.02	0.84	0.35
	1003A	10A	0.41	13		13	36	0.91	74	3.62	0.87		0.00		0.00		0.00	0.00	0.41	0.91	0.30	1.17	100.0	250	0.25	29.73	0.04	0.61	0.29
To Conservancy Drive, Pipe 10A - 11A								0.91	74				0.00		0.00		0.00			0.91									
Conservancy Drive																													
			12.88				1182	12.88	1182			4.21	4.21		0.00	0.58	0.58		17.67	17.67									
	PLUG	10A	36.45				3771	49.33	4953	2.80	44.93	13.70	17.91		0.00	3.47	4.05	9.36	53.62	71.29	23.53	77.81	20.5	525	0.10	136.00	0.57	0.63	0.65
Contribution From Borrisokane Road, Pipe 1001A - 10A								0.58	44				0.00		0.00		0.00		0.58	71.87									
Contribution From Borrisokane Road, Pipe 1003A - 10A								0.91	74				0.00		0.00		0.00		0.91	72.78									
	10A	11A	0.15				0	50.97	5071	2.79	45.87		17.91		0.00		4.05	9.36	0.15	72.93	24.07	79.30	71.5	525	0.10	136.00	0.58	0.63	0.65
Contribution From Ephemeral Crescent, Pipe 6A - 11A								1.07	134				0.00		0.00		0.00		1.07	74.00									
Contribution From Deciduous Crescent, Pipe 9A - 11A								0.70	73				0.00		0.00		0.00		0.70	74.70									
	11A	15A	0.30	6	6		21	53.04	5299	2.78	47.69		17.91		0.00		4.05	9.36	0.30	75.00	24.75	81.80	59.0	525	0.10	136.00	0.60	0.63	0.66
Contribution From Deciduous Crescent, Pipe 14A - 15A								0.77	77				0.00		0.00		0.00		0.77	75.77									
Contribution From Ephemeral Crescent, Pipe 4A - 15A								1.07	82				0.00		0.00		0.00		1.07	76.84									
	15A	18A	0.12				0	55.00	5458	2.77	48.95		17.91		0.00		4.05	9.36	0.12	76.96	25.40	83.71	58.5	525	0.10	136.00	0.62	0.63	0.66
Contribution From Les Emmerson Drive (N), Pipe 17A - 18A								0.83	75				0.00		0.00		0.00		0.83	77.79									
Contribution From Park (Block 773), Pipe 210A - 18A								0.00	0.00				0.00		0.00		3.22		3.22	81.01									
	18A	23A	0.31	5	5		17	56.14	5550	2.76	49.68		17.91		0.00		4.05	9.36	0.31	81.32	26.84	85.88	76.5	525	0.10	136.00	0.63	0.63	0.66
	23A	24A	0.49	11	11		38	56.63	5588	2.76	49.98		17.91		0.00		4.05	9.36	0.49	81.81	27.00	86.34	71.0	525	0.10	136.00	0.63	0.63	0.66
	24A	47A	0.61	15	15		51	57.24	5639	2.76	50.38		17.91		0.00		4.05	9.36	0.61	82.42	27.20	86.94	106.0	525	0.10	136.00	0.64	0.63	0.67

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
Industrial Flow =	35000	L/ha/da	0.40509
Max Res. Peak Factor =	4.00		
Commercial/Inst./Park Peak Factor =	1.50		
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		

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER			
Checked: W.L.	LOCATION: City of Ottawa			
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112	File Ref: 20-1180	Date: Aug 2022	Sheet No. 4 of 6	

1180_SAN_DesSheets_Sub4.xlsx

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION: STREET	FROM M.H.	TO M.H.	RESIDENTIAL: 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)	C+I+I: PEAK FLOW (l/s)	INFILTRATION: TOTAL AREA (ha)	INFILTRATION: ACCU. AREA (ha)	INFILTRATION: 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)
Contribution From Mineral Street, Pipe 39A - 47A								5.28	398				0.00		0.00		0.00		5.28	87.70									
Contribution From Mineral Street, Pipe 46A - 47A								1.45	137				0.00		0.00		0.00		1.45	89.15									
	47A	48A	0.56	14	14		48	64.53	6222	2.72	54.94		17.91		0.00		4.05	9.36	0.56	89.71	29.60	93.90	99.0	525	0.10	136.00	0.69	0.63	0.68
	48A	75A	0.42	10	10		34	64.95	6256	2.72	55.20		17.91		0.00		4.05	9.36	0.42	90.13	29.74	94.30	76.5	525	0.10	136.00	0.69	0.63	0.68
Contribution From Anemone Mews, Pipe 63A - 75A								1.30	104				0.00		0.00		0.00		1.30	91.43									
Contribution From Anemone Mews, Pipe 750A - 75A								5.89	565				0.00		0.00		0.00		5.89	97.32									
	75A	76A	0.31	7	7		24	72.45	6949	2.69	60.53		17.91		0.00		4.05	9.36	0.31	97.63	32.22	102.11	62.0	525	0.10	136.00	0.75	0.63	0.69
	76A	77A	0.39	11	11		38	72.84	6987	2.69	60.82		17.91		0.00		4.05	9.36	0.39	98.02	32.35	102.52	60.0	525	0.10	136.00	0.75	0.63	0.69
	77A	92A	0.33	9	9		31	73.17	7018	2.68	61.05		17.91		0.00		4.05	9.36	0.33	98.35	32.46	102.87	53.0	525	0.10	136.00	0.76	0.63	0.69
Contribution From Ecology Lane, Pipe 91A - 92A								6.96	580				0.00		0.00		0.00		6.96	105.31									
	92A	93A	0.51	12	12		41	80.64	7639	2.66	65.75		17.91		0.00		4.05	9.36	0.51	105.82	34.92	110.03	90.5	525	0.10	136.00	0.81	0.63	0.70
	93A	119A	0.37	6	6		21	81.01	7660	2.65	65.91		17.91		0.00	0.52	4.57	9.44	0.89	106.71	35.21	110.56	88.0	525	0.10	136.00	0.81	0.63	0.70
To Canoe Street, Pipe 119A - 120A								81.01	7660				17.91		0.00		4.57			106.71									
Meander Way																													
	84A	85A	0.50	13	13		45	0.50	45	3.66	0.53		0.00		0.00		0.00	0.00	0.50	0.50	0.17	0.70	92.5	200	0.65	26.44	0.03	0.84	0.36
To Sapling Grove, Pipe 85A - 88A								0.50	45				0.00		0.00		0.00			0.50									
	84A	86A	0.16	1	1		4	0.16	4	3.76	0.05		0.00		0.00		0.00	0.00	0.16	0.16	0.05	0.10	13.0	200	0.65	26.44	0.00	0.84	0.20
	86A	87A	0.22	4	4		14	0.38	18	3.71	0.22		0.00		0.00		0.00	0.00	0.22	0.38	0.13	0.34	50.5	250	0.65	47.94	0.01	0.98	0.28
	87A	114A	0.23	5	5		17	0.61	35	3.67	0.42		0.00		0.00		0.00	0.00	0.23	0.61	0.20	0.62	58.0	250	0.25	29.73	0.02	0.61	0.24
	114A	115A	0.07	1	1		4	0.68	39	3.67	0.46		0.00		0.00		0.00	0.00	0.07	0.68	0.22	0.69	10.0	250	0.25	29.73	0.02	0.61	0.25
	115A	116A	0.63	17	17		58	1.31	97	3.60	1.13		0.00		0.00		0.00	0.00	0.63	1.31	0.43	1.56	110.5	250	0.25	29.73	0.05	0.61	0.32
To Peninsula Road, Pipe 116A - 117A								1.31	97				0.00		0.00		0.00			1.31									
Peninsula Road																													
	89A	63A	0.17	4	4		14	0.17	14	3.72	0.17		0.00		0.00		0.00	0.00	0.17	0.17	0.06	0.22	41.0	200	0.65	26.44	0.01	0.84	0.26
To Anemone Mews, Pipe 63A - 75A								0.17	14				0.00		0.00		0.00			0.17									
	380A	38A	0.45	8	8		28	0.45	28	3.69	0.33		0.00		0.00		0.00	0.00	0.45	0.45	0.15	0.48	57.0	200	0.65	26.44	0.02	0.84	0.32
	38A	39A	0.60	16	16		55	1.05	83	3.61	0.97		0.00		0.00		0.00	0.00	0.60	1.05	0.35	1.32	108.5	250	0.25	29.73	0.04	0.61	0.30
To Mineral Street, Pipe 39A - 47A								1.05	83				0.00		0.00		0.00			1.05									
	620A	62A	0.50	13	13		45	0.50	45	3.66	0.53		0.00		0.00		0.00	0.00	0.50	0.50	0.17	0.70	83.0	200	0.65	26.44	0.03	0.84	0.36
	62A	63A	0.45	13	13		45	0.95	90	3.60	1.05		0.00		0.00		0.00	0.00	0.45	0.95	0.31	1.36	82.0	250	0.25	29.73	0.05	0.61	0.31
To Anemone Mews, Pipe 63A - 75A								0.95	90				0.00		0.00		0.00			0.95									
	89A	90A	0.41	13	13		45	0.41	45	3.66	0.53		0.00		0.00		0.00	0.00	0.41	0.41	0.14	0.67	67.0	200	0.65	26.44	0.03	0.84	0.35
	90A	91A	0.37	10	10		34	0.78	79	3.62	0.93		0.00		0.00		0.00	0.00	0.37	0.78	0.26	1.18	68.5	250	0.75	51.50	0.02	1.05	0.42
To Ecology Lane, Pipe 91A - 92A								0.78	79				0.00		0.00		0.00			0.78									
	91A	116A	0.18	4	4		14	0.18	14	3.72	0.17		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.23	58.5	200	0.65	26.44	0.01	0.84	0.26
Contribution From Meander Way, Pipe 115A - 116A								1.31	97				0.00		0.00		0.00		1.31	1.49									
	116A	117A	0.23	6	6		21	1.72	132	3.57	1.53		0.00		0.00		0.00	0.00	0.23	1.72	0.57	2.09	58.5	250	0.25	29.73	0.07	0.61	0.34
Contribution From Elation Heights, Pipe 109A - 117A								0.74	55				0.00		0.00		0.00		0.74	2.46									
	117A	118A	0.18	3	3		11	2.64	198	3.52	2.26		0.00		0.00		0.00	0.00	0.18	2.64	0.87	3.13	59.0	250	0.25	29.73	0.11	0.61	0.39
To Canoe Street, Pipe 118A - 1180A								2.64	198				0.00		0.00		0.00			2.64									

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 = 1.50
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

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
PROVINCE OF ONTARIO

Designed: A.K.
Checked: W.L.
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112

PROJECT: BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER
LOCATION: City of Ottawa
File Ref: 20-1180
Date: Aug 2022
Sheet No. 5 of 6

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

Ottawa

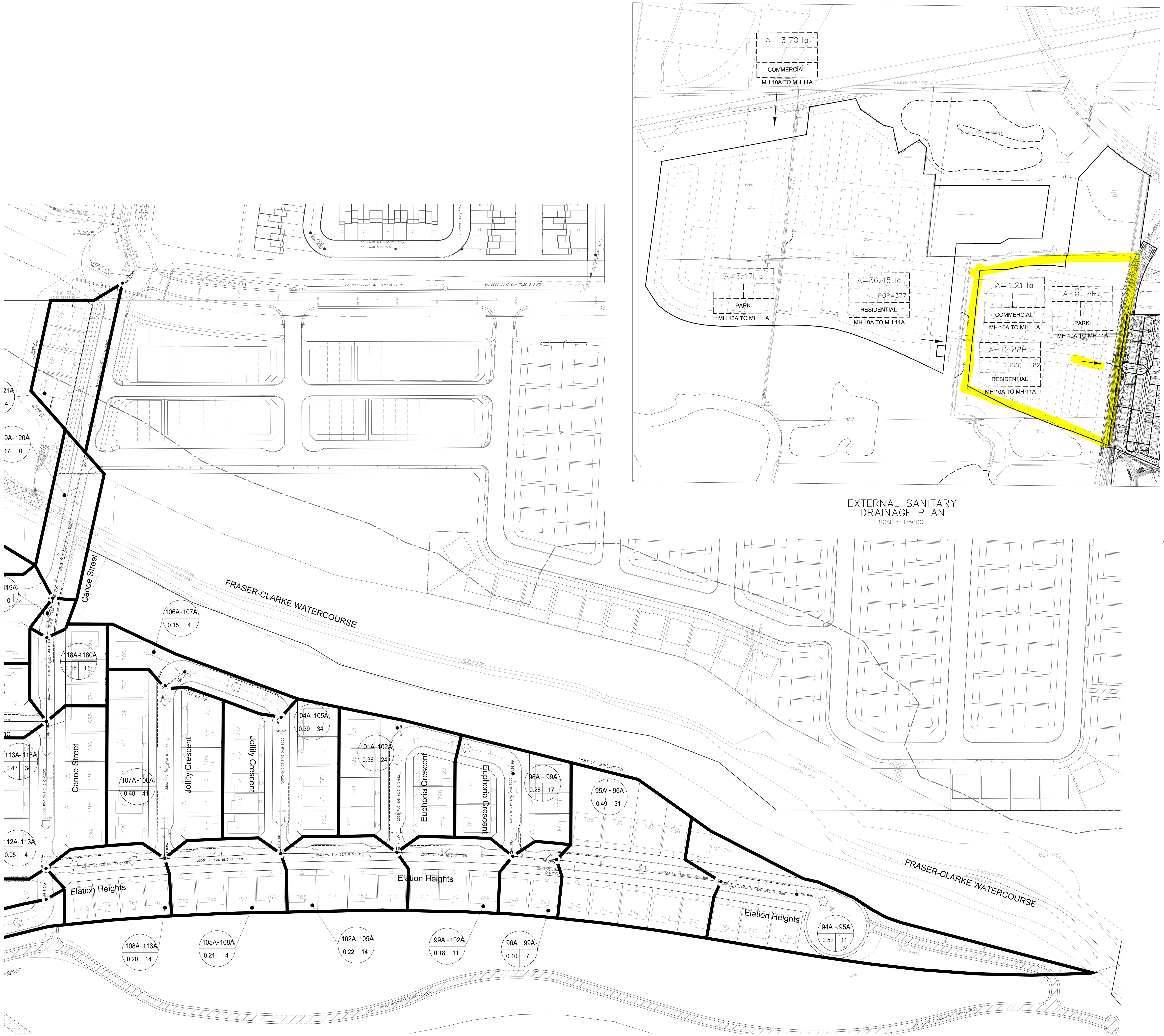
LOCATION			RESIDENTIAL AREA AND POPULATION									COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (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)
Elation Heights																													
	112A	113A	0.05	1	1		4	0.05	4	3.76	0.05		0.00		0.00		0.00	0.00	0.05	0.05	0.02	0.07	15.5	200	0.65	26.44	0.00	0.84	0.17
To Canoe Street, Pipe 113A - 118A								0.05	4				0.00		0.00		0.00			0.05									
	110A	109A	0.16	1	1		4	0.16	4	3.76	0.05		0.00		0.00		0.00	0.00	0.16	0.16	0.05	0.10	13.5	200	0.65	26.44	0.00	0.84	0.20
	109A	117A	0.58	15	15		51	0.74	55	3.64	0.65		0.00		0.00		0.00	0.00	0.58	0.74	0.24	0.89	103.0	250	0.25	29.73	0.03	0.61	0.27
To Peninsula Road, Pipe 117A - 118A								0.74	55				0.00		0.00		0.00			0.74									
Jollity Crescent																													
	104A	105A	0.39	10	10		34	0.39	34	3.68	0.41		0.00		0.00		0.00	0.00	0.39	0.39	0.13	0.53	69.0	200	0.80	29.34	0.02	0.93	0.35
To Canoe Street, Pipe 105A - 108A								0.39	34				0.00		0.00		0.00			0.39									
	106A	107A	0.15	1	1		4	0.15	4	3.76	0.05		0.00		0.00		0.00	0.00	0.15	0.15	0.05	0.10	12.0	200	0.70	27.44	0.00	0.87	0.19
	107A	108A	0.48	12	12		41	0.63	45	3.66	0.53		0.00		0.00		0.00	0.00	0.48	0.63	0.21	0.74	87.0	250	0.25	29.73	0.02	0.61	0.25
To Canoe Street, Pipe 108A - 113A								0.63	45				0.00		0.00		0.00			0.63									
Euphoria Crescent																													
	101A	102A	0.36	7	7		24	0.36	24	3.70	0.29		0.00		0.00		0.00	0.00	0.36	0.36	0.12	0.41	62.5	250	0.65	47.94	0.01	0.98	0.30
To Canoe Street, Pipe 102A - 105A								0.36	24				0.00		0.00		0.00			0.36									
	98A	99A	0.28	5	5		17	0.28	17	3.71	0.20		0.00		0.00		0.00	0.00	0.28	0.28	0.09	0.30	41.5	200	1.20	35.93	0.01	1.14	0.33
To Canoe Street, Pipe 99A - 102A								0.28	17				0.00		0.00		0.00			0.28									
Canoe Street																													
	94A	95A	0.52	3	3		11	0.52	11	3.73	0.13		0.00		0.00		0.00	0.00	0.52	0.52	0.17	0.30	38.5	200	0.65	26.44	0.01	0.84	0.28
	95A	96A	0.49	9	9		31	1.01	42	3.66	0.50		0.00		0.00		0.00	0.00	0.49	1.01	0.33	0.83	83.5	250	0.25	29.73	0.03	0.61	0.26
	96A	99A	0.10	2	2		7	1.11	49	3.65	0.58		0.00		0.00		0.00	0.00	0.10	1.11	0.37	0.95	22.0	250	0.25	29.73	0.03	0.61	0.27
Contribution From Euphoria Crescent, Pipe 98A - 99A								0.28	17				0.00		0.00		0.00		0.28	1.39									
	99A	102A	0.18	3	3		11	1.57	77	3.62	0.90		0.00		0.00		0.00	0.00	0.18	1.57	0.52	1.42	58.5	250	0.25	29.73	0.05	0.61	0.31
Contribution From Euphoria Crescent, Pipe 101A - 102A								0.36	24				0.00		0.00		0.00		0.36	1.93									
	102A	105A	0.22	4	4		14	2.15	115	3.58	1.33		0.00		0.00		0.00	0.00	0.22	2.15	0.71	2.04	58.5	250	0.25	29.73	0.07	0.61	0.34
Contribution From Jollity Crescent, Pipe 104A - 105A								0.39	34				0.00		0.00		0.00		0.39	2.54									
	105A	108A	0.21	4	4		14	2.75	163	3.54	1.87		0.00		0.00		0.00	0.00	0.21	2.75	0.91	2.78	58.5	250	0.25	29.73	0.09	0.61	0.38
Contribution From Jollity Crescent, Pipe 107A - 108A								0.63	45				0.00		0.00		0.00		0.63	3.38									
	108A	113A	0.20	4	4		14	3.58	222	3.50	2.52		0.00		0.00		0.00	0.00	0.20	3.58	1.18	3.70	60.0	250	0.25	29.73	0.12	0.61	0.41
Contribution From Elation Heights, Pipe 112A - 113A								0.05	4				0.00		0.00		0.00		0.05	3.63									
	113A	118A	0.43	10	10		34	4.06	260	3.48	2.94		0.00		0.00		0.00	0.00	0.43	4.06	1.34	4.27	74.0	250	0.25	29.73	0.14	0.61	0.43
Contribution From Peninsula Road, Pipe 117A - 118A								2.64	198				0.00		0.00		0.00		2.64	6.70									
	118A	1180A	0.16	3	3		11	6.86	469	3.39	5.15		0.00		0.00		0.00	0.00	0.16	6.86	2.26	7.42	42.5	250	0.25	29.73	0.25	0.61	0.50
	1180A	119A	0.03				0	6.89	469	3.39	5.15		0.00		0.00		0.00	0.00	0.03	6.89	2.27	7.43	20.0	250	0.25	29.73	0.25	0.61	0.50
Contribution From Conservancy Drive, Pipe 93A - 119A								81.01	7660				17.91		0.00		4.57		106.71	113.60									
	119A	120A	0.17				0	88.07	8129	2.63	69.41		17.91		0.00		4.57	9.44	0.17	113.77	37.54	116.40	75.0	525	0.10	136.00	0.86	0.63	0.71
	120A	121A	0.21	4	4		14	88.28	8143	2.63	69.51		17.91		0.00		4.57	9.44	0.21	113.98	37.61	116.57	87.5	525	0.10	136.00	0.86	0.63	0.71
	121A	Ex. MH 8						88.28	8143	2.63	69.51		17.91		0.00		4.57	9.44	0.00	113.98	37.61	116.57	10.0	525	0.10	136.00	0.86	0.63	0.71
Park (Block 773)																													
	210A	18A						0.00					0.00		0.00	3	3.22	0.52	3.22	3.22	1.06	1.58	11.5	200	0.65	26.44	0.06	0.84	0.46
To Conservancy Drive, Pipe 18A - 23A								0.00	0				0.00		0.00		3.22			3.22									

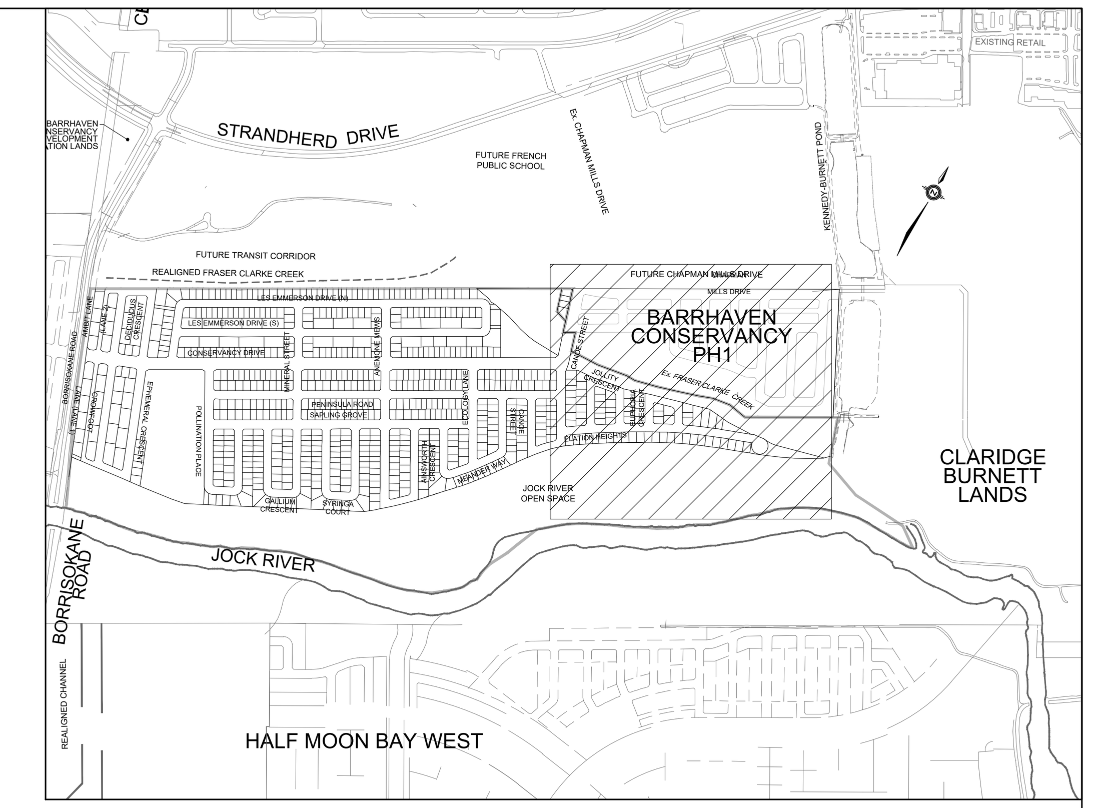
DESIGN PARAMETERS

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		Extraneous Flow =		0.330	L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509		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 =	1.50				Townhouse coeff=		2.7	
Institutional =	0.32	l/s/Ha			Single house coeff=		3.4	

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER				
Checked: W.L.	LOCATION: City of Ottawa				
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112	File Ref:	20-1180	Date: Aug 2022	Sheet No.	6 of 6





LEGEND

SANITARY DRAINAGE BOUNDARY
SANITARY SUB-DRAINAGE BOUNDARY
UPSTREAM MH TO DOWNSTREAM MH — 43A - 44A
AREA IN HECTARES — 0.78
POPULATION — 61
UPSTREAM MH TO DOWNSTREAM MH — 43A-44A
AREA IN OTHER PHASES IN HECTARES — 0.78
POPULATION — 61
EXTERNAL AREA IN HECTARES — A=53.63
EXTERNAL POPULATION — POP=5739
DENSITY (PERSONS/HECTARE) — 107
EXTERNAL LAND USE — RESIDENTIAL
MAINTENANCE HOLE — MH202A
CAP
EXISTING SANITARY MAINTENANCE HOLE

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED, PROJECT No. 16-10-127-00. SURVEY DATED APRIL 10, 2018.

LEGAL INFORMATION

M-PLAN PROVIDED BY J.D. BARNES., PROJECT No. 16-10-127-00, RECEIVED ON AUGUST 2, 2022.

NOT FOR CONSTRUCTION

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE REFERRED TO THE PUBLISHED BENCH MARK No. 0011964U3710

ELEVATION = 71.724m

No.	BY	DATE	DESCRIPTION
7	W.L.	22-09-28	RETAINING WALL UPDATES
6	W.L.	22-09-27	WATERMAIN AND CUP UPDATES
5	W.L.	22-08-31	CITY COMMENTS AND TRANSPORATION UPDATES
4	W.L.	22-08-10	REVISED STREET NAME & LOT 99 SIGHT TRIANGLE
3	W.L.	22-06-28	3rd SUBMISSION
2	W.L.	22-04-22	2nd SUBMISSION
1	W.L.	21-12-22	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 20-1180

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-09-28
PROVINCE OF ONTARIO

SANITARY DRAINAGE PLAN

BARRHAVEN CONSERVANCY DEVELOPMENT CORPORATION

BARRHAVEN CONSERVANCY EAST
PHASE 2, 3 & JOCK RIVER

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

DRAWN BY: A.K./R.A./V.W.	CHECKED BY: W.L.	SHEET NO.	
DESIGNED BY: W.L.	CHECKED BY: C.M.	112	
SCALE: 1:1000	DATE: DECEMBER 2021		

CITY PLAN No. 18754

CITY FILE No. D07-16-20-0021

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)
<u>Vacant land on the north side of the Jock River generally bounded by Highway 416 and the Fraser Clarke Creek, City of Ottawa</u>

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)

Manning 0.013

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
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
Centerline7 - 07																																	
	501	502	0.32	0.67	0.60	0.60			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	46	375	375	PVC	0.30	118.0	96.0323	0.8695	2.2619	0.477
	502	505	0.02	0.67	0.04	0.63			0.00	0.00			0.00	0.00			0.00	0.00	12.26	69.09	93.59	109.66	160.23	44	450	450	CONC	0.25	31.5	142.5531	0.8963	0.5857	0.307
To Centerline15 - 15, Pipe 505 - 507						0.63				0.00				0.00				0.00	12.85														
Centerline4 - 04																																	
Contribution From Centerline15 - 15, Pipe 505 - 507						0.63				0.69				0.00				0.00	13.24														
Contribution From Centerline15 - 15, Pipe 506 - 507						0.00				0.00				0.85				0.00	11.43														
			0.22	0.80	0.49	1.12			0.00	0.69			0.00	0.85			0.00	0.00															
	507	513	0.29	0.67	0.54	1.66			0.00	0.69			0.00	0.85			0.00	0.00	13.24	66.26	89.71	105.08	153.51	261	750	750	CONC	0.11	114.5	369.2322	0.8358	2.2833	0.707
To Centerline11 - 11, Pipe 513 - 514						1.66				0.69				0.85				0.00	15.52														
Centerline2 - 02																																	
	511	512	0.42	0.80	0.93	0.93			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	72	450	450	CONC	0.20	99.5	127.5033	0.8017	2.0685	0.563
To Centerline11 - 11, Pipe 512 - 513						0.93				0.00				0.00				0.00	12.07														
Centerline11 - 11																																	
			0.20	0.80	0.44	0.44			0.00	0.00			0.00	0.00			0.00	0.00															
	508	509	0.29	0.67	0.54	0.98			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	76	450	450	CONC	0.20	90.5	127.5033	0.8017	1.8814	0.593
	509	510	0.12	0.67	0.22	1.21			0.00	0.00			0.00	0.00			0.00	0.00	11.88	70.26	95.20	111.56	163.01	85	450	450	CONC	0.20	10.5	127.5033	0.8017	0.2183	0.666
	510	512	0.16	0.67	0.30	1.51			0.00	0.00			0.00	0.00			0.00	0.00	12.10	69.58	94.27	110.46	161.40	105	525	525	CONC	0.20	39.0	192.3297	0.8885	0.7316	0.545
Contribution From Centerline2 - 02, Pipe 511 - 512						0.93				0.00				0.00				0.00	12.07														
	512	513	0.19	0.67	0.35	2.79			0.00	0.00			0.00	0.00			0.00	0.00	12.83	67.41	91.29	106.95	156.24	188	675	675	CONC	0.15	47.5	325.5584	0.9098	0.8702	0.579
Contribution From Centerline4 - 04, Pipe 507 - 513						1.66				0.69				0.85				0.00	15.52														
	513	514	0.21	0.67	0.39	4.85			0.00	0.69			0.00	0.85			0.00	0.00	15.52	60.56	81.90	95.90	140.03	431	900	900	CONC	0.11	51.0	600.4123	0.9438	0.9006	0.718
	514	515	0.03	0.67	0.06	4.90			0.00	0.69			0.00	0.85			0.00	0.00	16.43	58.60	79.22	92.75	135.41	421	900	900	CONC	0.11	8.5	600.4123	0.9438	0.1501	0.700
	515	516	0.09	0.67	0.17	5.07			0.00	0.69			0.00	0.85			0.00	0.00	16.58	58.28	78.79	92.25	134.67	428	900	900	CONC	0.11	56.5	600.4123	0.9438	0.9978	0.713
To Centerline1 - 01, Pipe 516 - 521						5.07				0.69				0.85				0.00	17.57														
Centerline3 - 03																																	
Contribution From Centerline1 - 01, Pipe 516 - 521						5.07				1.15				0.85				0.00	18.60														
Contribution From Centerline1 - 01, Pipe 519 - 521						0.00				1.40				0.00				0.00	12.21														
	521	524	0.55	0.67	1.02	6.10			0.00	2.55			0.00	0.85			0.00	0.00	18.60	54.40	73.49	86.01	125.53	592	900	900	CONC	0.17	110.0	746.4104	1.1733	1.5626	0.793
To Centerline10 - 10, Pipe 524 - 525						6.10				2.55				0.85				0.00	20.16														
Centerline10 - 10																																	
	520	517	0.62	0.67	1.15	1.15			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	89	450	450	CONC	0.20	104.5	127.5033	0.8017	2.1725	0.696
	517	518	0.17	0.67	0.32	1.47			0.00	0.00			0.00	0.00			0.00	0.00	12.17	69.36	93.97	110.10	160.87	102	450	450	CONC	0.25	10.5	142.5531	0.8963	0.1952	0.716
	518	525	0.18	0.67	0.34	1.81			0.00	0.00			0.00	0.00			0.00	0.00	12.37	68.77	93.15	109.14	159.47	124	525	525	CONC	0.20	48.0	192.3297	0.8885	0.9004	0.646
To Centerline5 - 05, Pipe 525 - HW10						1.81				0.00				0.00				0.00	13.27														
	522	523	0.65	0.67	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	39.0	127.5033	0.8017	0.8108	0.729
	523	524	0.21	0.67	0.39	1.60			0.00	0.00			0.00	0.00			0.00	0.00	10.81	73.83	100.10	117.32	171.47	118	525	525	CONC	0.20	49.0	192.3297	0.8885	0.9192	0.615
Contribution From Centerline3 - 03, Pipe 521 - 524						6.10				2.55				0.85				0.00	20.16														
	524	525			0.00	7.70			0.00	2.55			0.00	0.85			0.00	0.00	20.16	51.78	69.90	81.80	119.35	646	1050	1050	CONC	0.11	8.0	905.6791	1.0459	0.1275	0.714
To Centerline5 - 05, Pipe 525 - HW10						7.70				2.55				0.85				0.00	20.29														
Centerline5 - 05																																	
Contribution From Centerline10 - 10, Pipe 518 - 525						1.81				0.00				0.00				0.00	13.27														
Contribution From Centerline10 - 10, Pipe 524 - 525						7.70				2.55				0.85				0.00	20.29														
	525	HW10	0.02	0.67	0.04	9.54			0.00	2.55			0.00	0.85			0.00	0.00	20.29	51.57	69.63	81.48	118.87	739	1050	1050	CONC	0.11	32.0	905.6791	1.0459	0.5099	0.816
Centerline12 - 12																																	
Contribution From Centerline9 - 09, Pipe 545 - 546						1.38				0.00				0.00				0.00	13.14														
					0.00	1.38	0.05	0.67	0.09	0.09			0.00	0.00			0.00	0.00															
	546	547	0.36	0.80	0.80	2.18			0.00	0.09			0.00	0.00			0.00	0.00	13.14	66.55	90.10	105.55	154.20	153	600	600	CONC	0.15	91.5	237.8056	0.8411	1.8132	0.645
	547	548	0.45	0.80	1.00	3.18			0.00	0.09			0.00	0.00			0.00	0.00	14.95	61.89	83.72	98.04	143.17	205	600	600	CONC	0.20	97.0	274.5943	0.9712	1.6646	0.745

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: A.S.
Checked: W.L./V.W.
Dwg. Reference:

PROJECT: **Barrhaven Conservancy East Phase 5**
LOCATION: **City of Ottawa**
File Ref:
Date: 01 Dec 2022
Sheet No. SHEET 1 OF 3

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	Intensity	Intensity	Intensity	Intensity	Peak Flow	SEWER DATA 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
	548	528	0.03	0.67	0.06	3.24			0.00	0.09			0.00	0.00			0.00	0.00	16.61	58.20	78.68	92.12	134.48	196	600	600	CONC	0.25	36.0	307.0058	1.0858	0.5526	0.637
To Centerline13 - 13, Pipe 528 - HW9						3.24				0.09				0.00				0.00	17.17														
Centerline8 - 08																																	
	539	540	0.32	0.67	0.60	0.60			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	46	300	300	PVC	0.40	52.0	61.1589	0.8652	1.0017	0.749
	540	541	0.41	0.67	0.76	1.36			0.00	0.00			0.00	0.00			0.00	0.00	11.00	73.16	99.18	116.24	169.89	99	450	450	CONC	0.20	68.0	127.5033	0.8017	1.4137	0.780
	541	542	0.13	0.67	0.24	1.60			0.00	0.00			0.00	0.00			0.00	0.00	12.42	68.63	92.96	108.91	159.13	110	450	450	CONC	0.25	10.5	142.5531	0.8963	0.1952	0.771
	542	543	0.17	0.67	0.32	1.92			0.00	0.00			0.00	0.00			0.00	0.00	12.61	68.05	92.17	107.98	157.76	131	600	600	CONC	0.15	48.0	237.8056	0.8411	0.9512	0.549
To Centerline13 - 13, Pipe 543 - 528						1.92				0.00				0.00				0.00	13.56														
Centerline1 - 01																																	
	519	521			0.00	0.00	0.75	0.67	1.40	1.40			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	146	525	525	CONC	0.20	118.0	192.3297	0.8885	2.2136	0.757
To Centerline3 - 03, Pipe 521 - 524						0.00				1.40				0.00				0.00	12.21														
	535	536			0.00	0.00	0.21	0.80	0.47	0.47			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	49	375	375	PVC	0.30	51.5	96.0323	0.8695	0.9872	0.507
	536	537			0.00	0.00	0.18	0.80	0.40	0.87			0.00	0.00			0.00	0.00	10.99	73.21	99.25	116.32	170.01	86	450	450	CONC	0.20	53.5	127.5033	0.8017	1.1122	0.675
To Centerline13 - 13, Pipe 537 - 538						0.00				0.87				0.00				0.00	12.10														
Contribution From Centerline11 - 11, Pipe 515 - 516						5.07				0.69				0.85				0.00	17.57														
	516	521			0.00	5.07	0.25	0.67	0.47	1.15			0.00	0.85			0.00	0.00	17.57	56.29	76.07	89.05	129.98	449	900	900	CONC	0.11	58.0	600.4123	0.9438	1.0242	0.748
To Centerline3 - 03, Pipe 521 - 524						5.07				1.15				0.85				0.00	18.60														
Centerline9 - 09																																	
			0.25	0.80	0.56	0.56			0.00	0.00			0.00	0.00			0.00	0.00															
	531	533	0.36	0.67	0.67	1.23			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	94	525	525	CONC	0.20	104.5	192.3297	0.8885	1.9603	0.490
To Centerline6 - 06, Pipe 533 - 534						1.23				0.00				0.00				0.00	11.96														
	544	545	0.36	0.80	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	78.5	96.0323	0.8695	1.5047	0.640
	545	546	0.26	0.80	0.58	1.38			0.00	0.00			0.00	0.00			0.00	0.00	11.50	71.47	96.86	113.51	165.88	99	450	450	CONC	0.20	78.5	127.5033	0.8017	1.6320	0.773
To Centerline12 - 12, Pipe 546 - 547						1.38				0.00				0.00				0.00	13.14														
Centerline6 - 06																																	
			0.20	0.80	0.44	0.44			0.00	0.00			0.00	0.00			0.00	0.00															
	532	533	0.64	0.40	0.71	1.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	89	450	450	CONC	0.20	62.0	127.5033	0.8017	1.2889	0.697
Contribution From Centerline9 - 09, Pipe 531 - 533						1.23				0.00				0.00				0.00	11.96														
	533	534	0.13	0.80	0.29	2.67			0.00	0.00			0.00	0.00			0.00	0.00	11.96	70.02	94.87	111.16	162.43	187	600	600	CONC	0.20	44.5	274.5943	0.9712	0.7637	0.681
To Centerline14 - 14, Pipe 534 - 537						2.67				0.00				0.00				0.00	12.72														
Centerline15 - 15																																	
	506	507			0.00	0.00			0.00	0.00	0.36	0.85	0.85	0.85			0.00	0.00	10.00	76.81	104.19	122.14	178.56	104	450	450	CONC	0.25	77.0	142.5531	0.8963	1.4318	0.729
To Centerline4 - 04, Pipe 507 - 513						0.00				0.00				0.85				0.00	11.43														
					0.00	0.00			0.00	0.00	0.23	0.85	0.54	0.54			0.00	0.00															
	526	529	0.93	0.80	2.07	2.07			0.00	0.00			0.00	0.54			0.00	0.00	10.00	76.81	104.19	122.14	178.56	225	600	600	CONC	0.25	62.0	307.0058	1.0858	0.9517	0.734
To Centerline14 - 14, Pipe 529 - 530						2.07				0.00				0.54				0.00	10.95														
	527	529			0.00	0.00			0.00	0.00	0.26	0.85	0.61	0.61			0.00	0.00	10.00	76.81	104.19	122.14	178.56	75	375	375	PVC	0.35	46.0	103.7267	0.9392	0.8163	0.723
To Centerline14 - 14, Pipe 529 - 530						0.00				0.00				0.61				0.00	10.82														
	503	504			0.00	0.00	0.10	0.85	0.24	0.24			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	25	300	300	PVC	0.35	41.0	57.2089	0.8093	0.8443	0.430
	504	505			0.00	0.00	0.14	0.85	0.33	0.57			0.00	0.00			0.00	0.00	10.84	73.71	99.94	117.13	171.19	57	375	375	PVC	0.30	60.0	96.0323	0.8695	1.1501	0.590
Contribution From Centerline7 - 07, Pipe 502 - 505						0.63				0.00				0.00				0.00	12.85														
	505	507			0.00	0.63	0.05	0.85	0.12	0.69			0.00	0.00			0.00	0.00	12.85	67.36	91.22	106.87	156.13	105	525	525	CONC	0.20	21.0	192.3297	0.8885	0.3939	0.547
To Centerline4 - 04, Pipe 507 - 513						0.63				0.69				0.00				0.00	13.24														

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: A.S.	PROJECT: **Barrhaven Conservancy East Phase 5**	
Checked: W.L./V.W.	LOCATION: **City of Ottawa**	
Dwg. Reference:	File Ref:	Date: 01 Dec 2022 / Sheet No. SHEET 2 OF 3

1180A-5_STM_Dec0122.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
Centerline14 - 14																																	
Contribution From Centerline15 - 15, Pipe 526 - 529						2.07				0.00				0.54				0.00	10.95														
Contribution From Centerline15 - 15, Pipe 527 - 529						0.00				0.00				0.61				0.00	10.82														
	529	530	0.52	0.80	1.16	3.22			0.00	0.00			0.00	1.16			0.00	0.00	10.95	73.33	99.42	116.52	170.30	371	825	825	CONC	0.11	26.5	476.0801	0.8906	0.4959	0.780
	530	534			0.00	3.22			0.00	0.00			0.00	1.16			0.00	0.00	11.45	71.66	97.12	113.81	166.33	363	825	825	CONC	0.11	117.0	476.0801	0.8906	2.1895	0.762
Contribution From Centerline6 - 06, Pipe 533 - 534						2.67				0.00				0.00				0.00	12.72														
	534	537	0.11	0.80	0.24	6.14			0.00	0.00			0.00	1.16			0.00	0.00	13.64	65.18	88.24	103.36	150.97	520	900	900	CONC	0.15	48.5	701.1305	1.1021	0.7334	0.742
To Centerline13 - 13, Pipe 537 - 538						6.14				0.00				1.16				0.00	14.37														
Centerline13 - 13																																	
Contribution From Centerline14 - 14, Pipe 534 - 537						6.14				0.00				1.16				0.00	14.37														
Contribution From Centerline1 - 01, Pipe 536 - 537						0.00				0.87				0.00				0.00	12.10														
					0.00	6.14	0.06	0.67	0.11	0.98			0.00	1.16			0.00	0.00															
	537	538	0.28	0.67	0.52	6.66			0.00	0.98			0.00	1.16			0.00	0.00	14.37	63.29	85.65	100.31	146.50	622	975	975	CONC	0.15	83.0	867.9562	1.1625	1.1899	0.716
	538	543	0.25	0.67	0.47	7.13			0.00	0.98			0.00	1.16			0.00	0.00	15.56	60.48	81.79	95.77	139.84	622	975	975	CONC	0.15	69.0	867.9562	1.1625	0.9892	0.717
Contribution From Centerline8 - 08, Pipe 542 - 543						1.92				0.00				0.00				0.00	13.56														
	543	528	0.05	0.67	0.09	9.14			0.00	0.98			0.00	1.16			0.00	0.00	16.55	58.34	78.86	92.33	134.80	717	1050	1050	CONC	0.11	29.0	905.6791	1.0459	0.4621	0.792
Contribution From Centerline12 - 12, Pipe 548 - 528						3.24				0.09				0.00				0.00	17.17														
	528	HW9			0.00	12.38			0.00	1.07			0.00	1.16			0.00	0.00	17.17	57.08	77.15	90.32	131.84	894	1050	1050	CONC	0.20	4.5	1221.2174	1.4103	0.0532	0.732

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: A.S.	PROJECT: Barrhaven Conservancy East Phase 5
Checked: W.L./V.W.	LOCATION: City of Ottawa
Dwg. Reference:	File Ref: / Date: 01 Dec 2022 / Sheet No. SHEET 3 OF 3

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:**	K. Murphy
OGS #:	9	**Report Date:**	20-Oct-22

Area	7.21	ha	**Rainfall Station #**	215	
Weighted C	0.72		**Particle Size Distribution**	FINE	
CDS Model	4045	(OFFLINE)	**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%	14.4	14.4	6.8	96.9	10.3
1.5	9.9%	29.7%	21.6	21.6	10.2	95.9	9.5
2.0	8.4%	38.1%	28.9	28.9	13.6	95.0	8.0
2.5	7.7%	45.8%	36.1	36.1	17.0	94.0	7.2
3.0	5.9%	51.7%	43.3	43.3	20.4	93.0	5.5
3.5	4.4%	56.1%	50.5	50.5	23.8	92.0	4.0
4.0	4.7%	60.7%	57.7	57.7	27.2	91.1	4.2
4.5	3.3%	64.0%	64.9	64.9	30.6	90.1	3.0
5.0	3.0%	67.1%	72.2	72.2	34.0	89.1	2.7
6.0	5.4%	72.4%	86.6	86.6	40.8	87.2	4.7
7.0	4.4%	76.8%	101.0	101.0	47.6	85.2	3.7
8.0	3.5%	80.3%	115.5	115.5	54.4	83.3	2.9
9.0	2.8%	83.2%	129.9	129.9	61.2	81.3	2.3
10.0	2.2%	85.3%	144.3	144.3	67.9	79.4	1.7
15.0	7.0%	92.3%	216.5	212.4	100.0	68.9	4.8
20.0	4.5%	96.9%	288.6	212.4	100.0	51.7	2.3
25.0	1.4%	98.3%	360.8	212.4	100.0	41.3	0.6
30.0	0.7%	99.0%	432.9	212.4	100.0	34.4	0.2
35.0	0.5%	99.5%	505.1	212.4	100.0	29.5	0.1
40.0	0.5%	100.0%	577.3	212.4	100.0	25.8	0.1
							87.1
						Removal Efficiency Adjustment[2] =	6.5%
						Predicted Net Annual Load Removal Efficiency =	**80.6%**
						Predicted Annual Rainfall Treated =	**97.1%**

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

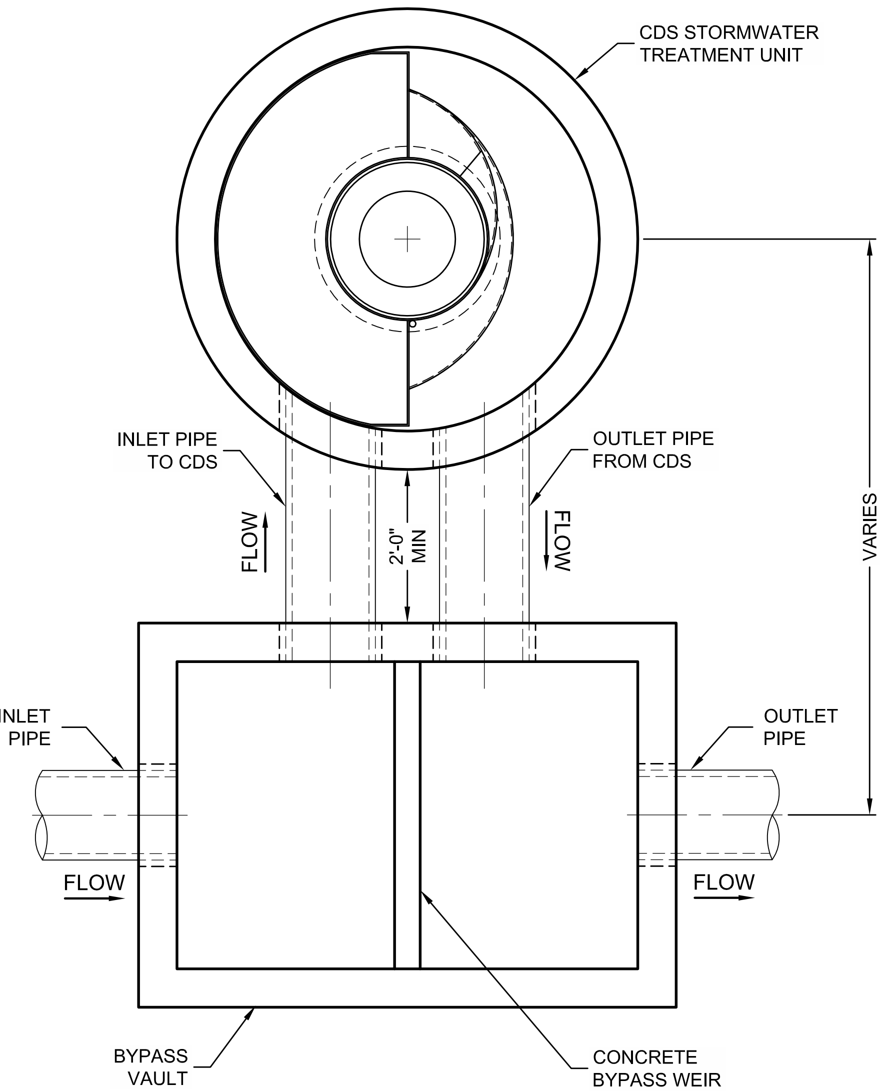
CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION

Project Name: 891 Conservancy East | **Engineer:** DSEL
Location: Ottawa, ON | **Contact:** K. Murphy
OGS #: 10 | **Report Date:** 20-Oct-22

Area 6.61 ha | **Rainfall Station #** 215
Weighted C 0.70 | **Particle Size Distribution** FINE
CDS Model 4045 (OFFLINE) | **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%	12.9	12.9	6.1	97.1	10.3
1.5	9.9%	29.7%	19.3	19.3	9.1	96.3	9.5
2.0	8.4%	38.1%	25.7	25.7	12.1	95.4	8.0
2.5	7.7%	45.8%	32.2	32.2	15.1	94.5	7.3
3.0	5.9%	51.7%	38.6	38.6	18.2	93.6	5.6
3.5	4.4%	56.1%	45.0	45.0	21.2	92.8	4.0
4.0	4.7%	60.7%	51.5	51.5	24.2	91.9	4.3
4.5	3.3%	64.0%	57.9	57.9	27.3	91.0	3.0
5.0	3.0%	67.1%	64.3	64.3	30.3	90.2	2.7
6.0	5.4%	72.4%	77.2	77.2	36.3	88.4	4.8
7.0	4.4%	76.8%	90.0	90.0	42.4	86.7	3.8
8.0	3.5%	80.3%	102.9	102.9	48.4	85.0	3.0
9.0	2.8%	83.2%	115.8	115.8	54.5	83.2	2.3
10.0	2.2%	85.3%	128.6	128.6	60.6	81.5	1.8
15.0	7.0%	92.3%	192.9	192.9	90.8	72.8	5.1
20.0	4.5%	96.9%	257.3	212.4	100.0	58.0	2.6
25.0	1.4%	98.3%	321.6	212.4	100.0	46.4	0.7
30.0	0.7%	99.0%	385.9	212.4	100.0	38.6	0.3
35.0	0.5%	99.5%	450.2	212.4	100.0	33.1	0.2
40.0	0.5%	100.0%	514.5	212.4	100.0	29.0	0.2
							88.4
						Removal Efficiency Adjustment[2] =	6.5%
						Predicted Net Annual Load Removal Efficiency =	**81.9%**
						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



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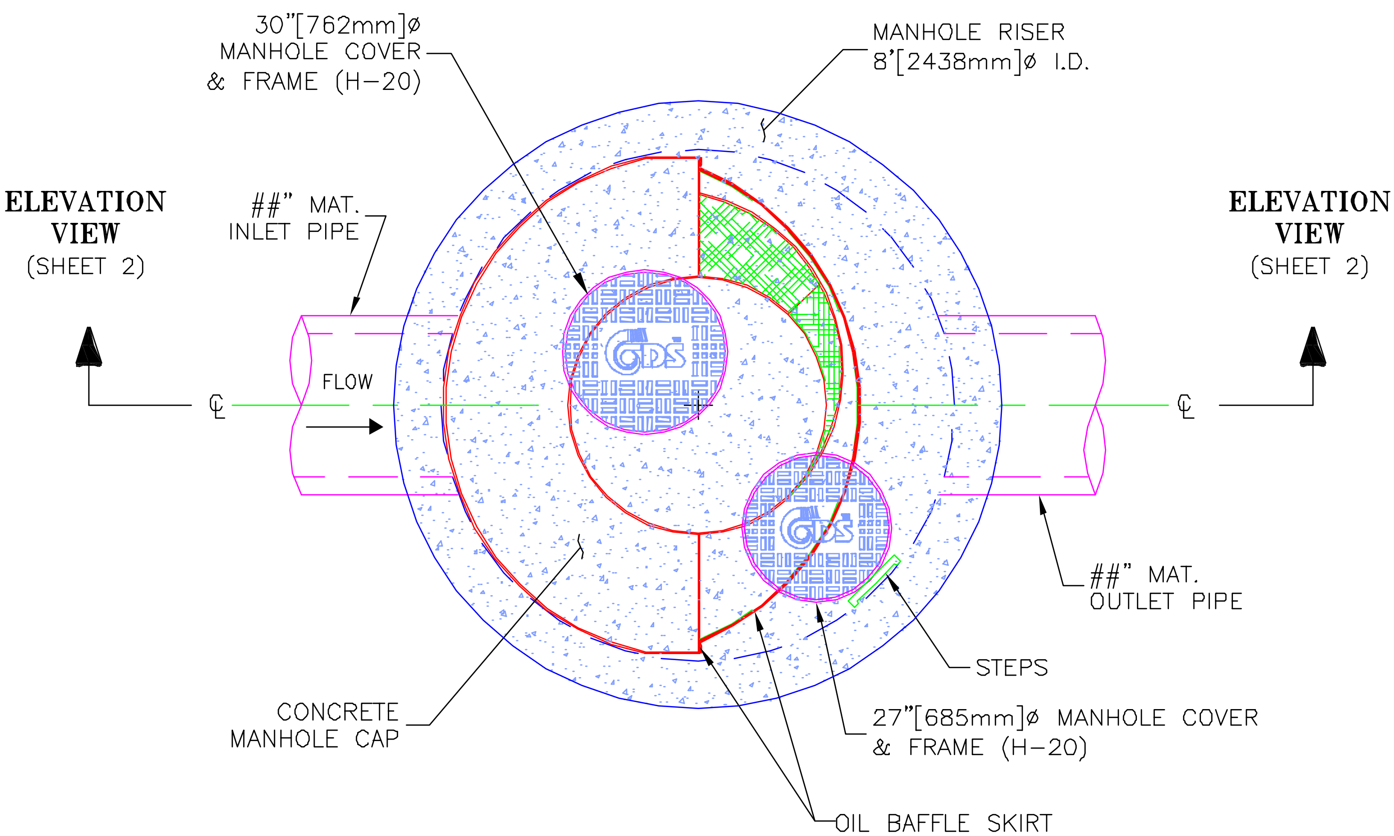
CDS STORMWATER TREATMENT SYSTEM
TYPICAL OFFLINE LAYOUT
WITH BYPASS VAULT STRUCTURE

DATE:03/12/13	SCALE: NONE	PROJECT No.: N/A	SEQ. No.: N/A	DRAWN: N/A	CHECKED: N/A

I:\STORMWATER\COMMOPS\22 CDS\40 STANDARD DRAWINGS\OFFLINE LAYOUTS DWG\OFFLINE CDS-C LAYOUT BYPASS VAULT STRUCTURE.DWG 3/12/2013 3:35 PM

PLAN VIEW



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

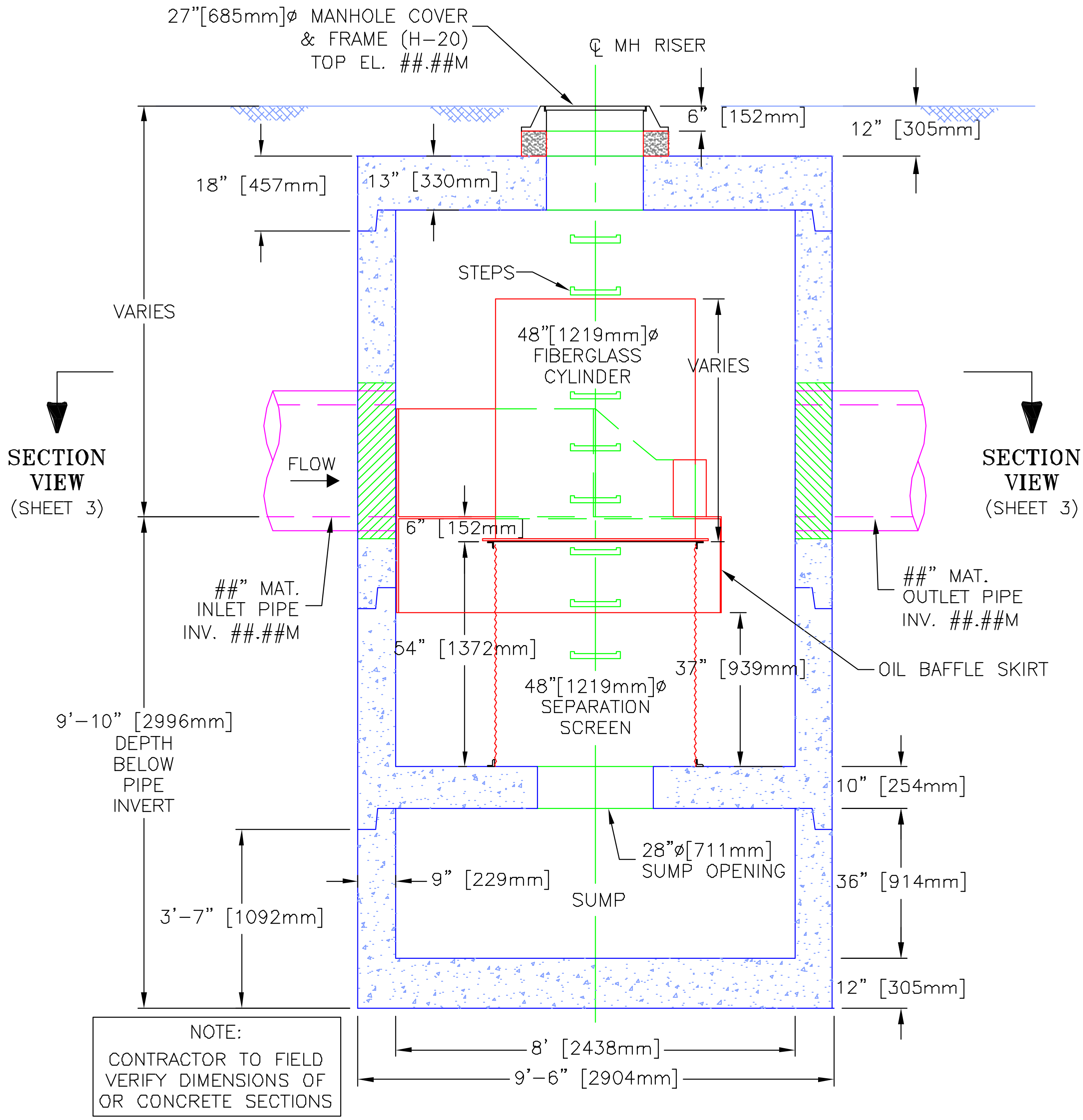
CONTECH STORMWATER SOLUTIONS

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



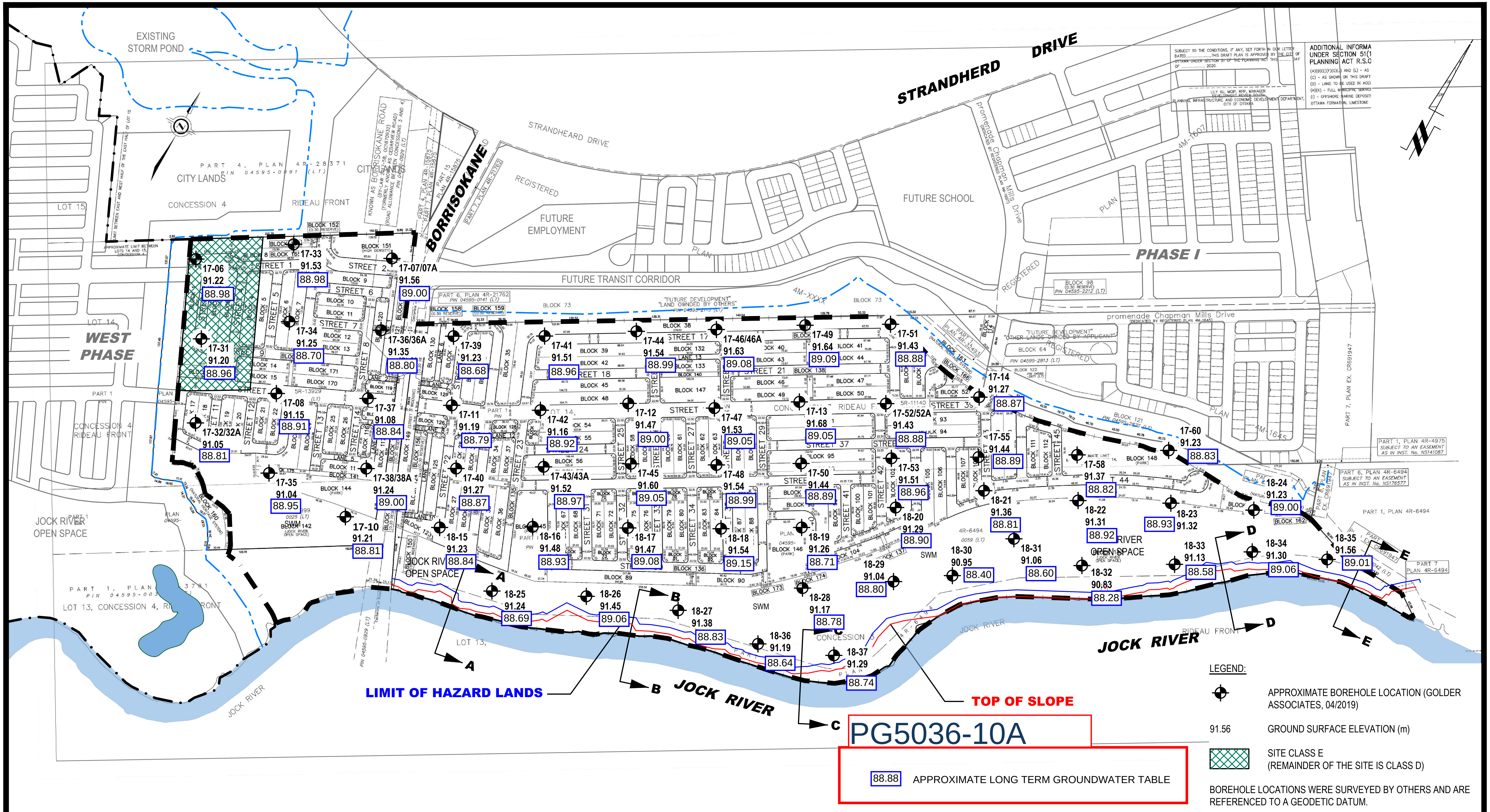
CDS MODEL PMSU40_45m, 7.5 CFS TREATMENT CAPACITY
STORM WATER TREATMENT UNIT

CONTECH 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



patersongroup
consulting engineers

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

NO.	REVISIONS	DATE	INITIAL
1	CONCEPTUAL PLAN ADDED	09/01/2020	DJG

CAIVAN COMMUNITIES

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

Title:
TEST HOLE LOCATION PLAN

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

11x17

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

jfsa.com

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Québec. QC

December 01, 2022 Project Number: 1474(03)

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

Attention: **Kevin Murphy, P.Eng**

Subject: **BCDC Phase 5 – Preliminary HGL Analysis**

Introduction

Phase 5 of the Barrhaven Conservancy Development is located in Barrhaven, Ontario, north of the Jock River, east of the Foster Creek and West of Borrisokane Road. The proposed development is approximately **13.17 ha** that will primarily comprise of single and townhouse residential lots along with a **0.64 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 5 development were completed using PCSWMM modelling software. Pipe data, trunk 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 14% increase in flows for the 100-year event is based on the assumption that the head on a lead pipe/ICD will increase by 35 cm (maximum allowable major system ponding depth) during the 100-Year event. Taking a typical 250 mm lead pipe and assuming that the head on the pipe is just below the top of the grate (assumed at 1.38 m) results in a peak flow of 209 L/s, then assuming that the head is increased by 35 cm during the 100-Year (head of 1.730m) the flow through the lead pipe would increase to 234.5 L/s, which results in a 12% increase in peak flows. It is important to note that a 12% increase is observed when the same calculations are applied to the various lead pipe and ICD sizes. An additional 2% is added as a safety factor to allow some flexibility in the design, as it is likely that not all lead pipes will have a head of 1.38 m (just below the top of MH) for the level of service specified.

The proposed storm sewer infrastructure data was extracted from DSEL's 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 in line 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
- Level of service (2/5/10-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 m^3/s**, while the 5-year spring flow is around **123 m^3/s**, therefore the downstream boundary condition applied is conservative.

Within the proposed development Oil and Grit Separators (OGS) units in conjunction with LID measures will be implemented to ensure the site meets quality control requirements. Preliminary OGS units and associated by-pass weir elevations have also been included in the model, based on similar drainage areas and imperviousness seen in BCDC Phase 2.

Trunk Sewer 9 will have a drainage area of **7.21 ha** at **75%** imperviousness, Trunk Sewer 10 has a drainage area of **6.56 ha** at **80%** imperviousness. In a preliminary consultation with the OGS manufacturer, it was suggested that the closest match to the detailed OGS sizing for BCDC Phase 2 is **OGS 3**, which used a **PMSU 4045-8** OGS unit with a weir height of **0.65m**, this unit had a drainage area of **6.77 ha** at **64%** imperviousness.

Results

The maximum HGL obtained at each MH has been extracted from the level of service (2/5/10-year) event / 100-year Jock River water level scenario and the 100-year event / 5-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 level of service 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 **0.64 m** at **MH-514** to **MH-516** and **MH-521**), with an average freeboard of **0.74 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 **1.22 m** at **MH-514** and **MH-515**), with an average freeboard of **1.38 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 5 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 events on the development and a 5-year spring water level on the Jock River and a level of service (2/5/10 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.

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: PCSWMM Model Overview

Tables
Table 1: HGL Result Tables - Level of service (2/5/10-year) BCDC Development & 100-Year Jock River
Table 2: HGL Result Tables - 100-Year BCDC Development & 5-Year Jock River

Attachments
Attachment A: DSEL Rational Method Calculations

Modelling Files - Provided Electronically
PCSWMM: BCDC-P5_HGL_v01.1-2-5-10-YrDev-100YrJock.inp
BCDC-P5_HGL_v01.1-100-YrDev-5YrJock.inp

N

Legend

- Junctions
- Outfalls
- Conduits
- Weirs
- Site Plan

SCALE: 1:2500

0 50 100 150 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

Barrhaven Conservancy Development
Phase 5

Figure 1: Preliminary HGL Analysis
Model Overview

PROJECT	1474(03)-21
DRAWN	JB
DATE	December 2022

C:\OneDrive\J.F. Sabourin and Associates Inc\JFSA-OTTAWA-SERVER - Documents\PROJ\1474(03)-21\202212-BCDC Phase 5 - Prelim Design\Design\GIS\20221021-Preliminary HGL Analysis Figures

Table 1: BCDC Phase 5 - Preliminary HGL Analysis
Level of Service (2/5/10 Year) BCDC Development & 100-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
MH-507	90.62	93.26	92.54	0.72
MH-513	90.42	93.10	92.43	0.67
MH-514	90.34	93.02	92.38	0.64
MH-515	90.30	93.00	92.36	0.64
MH-516	90.17	92.91	92.27	0.64
MH-521	90.05	92.83	92.19	0.64
MH-524	89.71	92.66	91.99	0.67
MH-525	89.64	92.65	91.93	0.72
MH-525-1	89.63	92.64	91.88	0.76
MH-528	89.63	92.67	91.89	0.78
MH-528-1	89.63	92.67	91.83	0.84
MH-529	90.43	93.01	92.23	0.78
MH-530	90.37	93.01	92.20	0.81
MH-534	90.17	92.99	92.11	0.88
MH-537	90.02	92.91	92.07	0.84
MH-538	89.87	92.91	92.01	0.90
MH-543	89.69	92.65	91.96	0.69
			Min	0.64
			Max	0.90
			Average	0.74

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

Model Name:BCDC-P5_HGL_v01.1-2-5-10-YrDev-100YrJock.inp

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

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
MH-507	90.62	93.26	92.02	1.24
MH-513	90.42	93.10	91.87	1.23
MH-514	90.34	93.02	91.81	1.22
MH-515	90.30	93.00	91.78	1.22
MH-516	90.17	92.91	91.67	1.24
MH-521	90.05	92.83	91.56	1.27
MH-524	89.71	92.66	91.29	1.37
MH-525	89.64	92.65	91.22	1.43
MH-525-1	89.63	92.64	91.16	1.48
MH-528	89.63	92.67	91.19	1.48
MH-528-1	89.63	92.67	91.12	1.55
MH-529	90.43	93.01	91.63	1.38
MH-530	90.37	93.01	91.59	1.42
MH-534	90.17	92.99	91.47	1.52
MH-537	90.02	92.91	91.42	1.49
MH-538	89.87	92.91	91.34	1.57
MH-543	89.69	92.65	91.27	1.38
			Min	1.22
			Max	1.57
			Average	1.38

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

Model Name:BCDC-P5_HGL_v01.1-100-YrDev-5YrJock.inp

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

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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

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
Centerline7 - 07																																	
	501	502	0.32	0.67	0.60	0.60			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	46	375	375	PVC	0.30	118.0	96.0323	0.8695	2.2619	0.477
	502	505	0.02	0.67	0.04	0.63			0.00	0.00			0.00	0.00			0.00	0.00	12.26	69.09	93.59	109.66	160.23	44	450	450	CONC	0.25	31.5	142.5531	0.8963	0.5857	0.307
To Centerline15 - 15, Pipe 505 - 507						0.63				0.00				0.00				0.00	12.85														
Centerline4 - 04																																	
Contribution From Centerline15 - 15, Pipe 505 - 507						0.63				0.69				0.00				0.00	13.24														
Contribution From Centerline15 - 15, Pipe 506 - 507						0.00				0.00				0.85				0.00	11.43														
			0.22	0.80	0.49	1.12			0.00	0.69			0.00	0.85			0.00	0.00															
	507	513	0.29	0.67	0.54	1.66			0.00	0.69			0.00	0.85			0.00	0.00	13.24	66.26	89.71	105.08	153.51	261	750	750	CONC	0.11	114.5	369.2322	0.8358	2.2833	0.707
To Centerline11 - 11, Pipe 513 - 514						1.66				0.69				0.85				0.00	15.52														
Centerline2 - 02																																	
	511	512	0.42	0.80	0.93	0.93			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	72	450	450	CONC	0.20	99.5	127.5033	0.8017	2.0685	0.563
To Centerline11 - 11, Pipe 512 - 513						0.93				0.00				0.00				0.00	12.07														
Centerline11 - 11																																	
			0.20	0.80	0.44	0.44			0.00	0.00			0.00	0.00			0.00	0.00															
	508	509	0.29	0.67	0.54	0.98			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	76	450	450	CONC	0.20	90.5	127.5033	0.8017	1.8814	0.593
	509	510	0.12	0.67	0.22	1.21			0.00	0.00			0.00	0.00			0.00	0.00	11.88	70.26	95.20	111.56	163.01	85	450	450	CONC	0.20	10.5	127.5033	0.8017	0.2183	0.666
	510	512	0.16	0.67	0.30	1.51			0.00	0.00			0.00	0.00			0.00	0.00	12.10	69.58	94.27	110.46	161.40	105	525	525	CONC	0.20	39.0	192.3297	0.8885	0.7316	0.545
Contribution From Centerline2 - 02, Pipe 511 - 512						0.93				0.00				0.00				0.00	12.07														
	512	513	0.19	0.67	0.35	2.79			0.00	0.00			0.00	0.00			0.00	0.00	12.83	67.41	91.29	106.95	156.24	188	675	675	CONC	0.15	47.5	325.5584	0.9098	0.8702	0.579
Contribution From Centerline4 - 04, Pipe 507 - 513						1.66				0.69				0.85				0.00	15.52														
	513	514	0.21	0.67	0.39	4.85			0.00	0.69			0.00	0.85			0.00	0.00	15.52	60.56	81.90	95.90	140.03	431	900	900	CONC	0.11	51.0	600.4123	0.9438	0.9006	0.718
	514	515	0.03	0.67	0.06	4.90			0.00	0.69			0.00	0.85			0.00	0.00	16.43	58.60	79.22	92.75	135.41	421	900	900	CONC	0.11	8.5	600.4123	0.9438	0.1501	0.700
	515	516	0.09	0.67	0.17	5.07			0.00	0.69			0.00	0.85			0.00	0.00	16.58	58.28	78.79	92.25	134.67	428	900	900	CONC	0.11	56.5	600.4123	0.9438	0.9978	0.713
To Centerline1 - 01, Pipe 516 - 521						5.07				0.69				0.85				0.00	17.57														
Centerline3 - 03																																	
Contribution From Centerline1 - 01, Pipe 516 - 521						5.07				1.15				0.85				0.00	18.60														
Contribution From Centerline1 - 01, Pipe 519 - 521						0.00				1.40				0.00				0.00	12.21														
	521	524	0.55	0.67	1.02	6.10			0.00	2.55			0.00	0.85			0.00	0.00	18.60	54.40	73.49	86.01	125.53	592	900	900	CONC	0.17	110.0	746.4104	1.1733	1.5626	0.793
To Centerline10 - 10, Pipe 524 - 525						6.10				2.55				0.85				0.00	20.16														
Centerline10 - 10																																	
	520	517	0.62	0.67	1.15	1.15			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	89	450	450	CONC	0.20	104.5	127.5033	0.8017	2.1725	0.696
	517	518	0.17	0.67	0.32	1.47			0.00	0.00			0.00	0.00			0.00	0.00	12.17	69.36	93.97	110.10	160.87	102	450	450	CONC	0.25	10.5	142.5531	0.8963	0.1952	0.716
	518	525	0.18	0.67	0.34	1.81			0.00	0.00			0.00	0.00			0.00	0.00	12.37	68.77	93.15	109.14	159.47	124	525	525	CONC	0.20	48.0	192.3297	0.8885	0.9004	0.646
To Centerline5 - 05, Pipe 525 - HW10						1.81				0.00				0.00				0.00	13.27														
	522	523	0.65	0.67	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	39.0	127.5033	0.8017	0.8108	0.729
	523	524	0.21	0.67	0.39	1.60			0.00	0.00			0.00	0.00			0.00	0.00	10.81	73.83	100.10	117.32	171.47	118	525	525	CONC	0.20	49.0	192.3297	0.8885	0.9192	0.615
Contribution From Centerline3 - 03, Pipe 521 - 524						6.10				2.55				0.85				0.00	20.16														
	524	525			0.00	7.70			0.00	2.55			0.00	0.85			0.00	0.00	20.16	51.78	69.90	81.80	119.35	646	1050	1050	CONC	0.11	8.0	905.6791	1.0459	0.1275	0.714
To Centerline5 - 05, Pipe 525 - HW10						7.70				2.55				0.85				0.00	20.29														
Centerline5 - 05																																	
Contribution From Centerline10 - 10, Pipe 518 - 525						1.81				0.00				0.00				0.00	13.27														
Contribution From Centerline10 - 10, Pipe 524 - 525						7.70				2.55				0.85				0.00	20.29														
	525	HW10	0.02	0.67	0.04	9.54			0.00	2.55			0.00	0.85			0.00	0.00	20.29	51.57	69.63	81.48	118.87	739	1050	1050	CONC	0.11	32.0	905.6791	1.0459	0.5099	0.816
Centerline12 - 12																																	
Contribution From Centerline9 - 09, Pipe 545 - 546						1.38				0.00				0.00				0.00	13.14														
					0.00	1.38	0.05	0.67	0.09	0.09			0.00	0.00			0.00	0.00															
	546	547	0.36	0.80	0.80	2.18			0.00	0.09			0.00	0.00			0.00	0.00	13.14	66.55	90.10	105.55	154.20	153	600	600	CONC	0.15	91.5	237.8056	0.8411	1.8132	0.645
	547	548	0.45	0.80	1.00	3.18			0.00	0.09			0.00	0.00			0.00	0.00	14.95	61.89	83.72	98.04	143.17	205	600	600	CONC	0.20	97.0	274.5943	0.9712	1.6646	0.745

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: A.S.
Checked: W.L./V.W.
Dwg. Reference:

PROJECT: **Barrhaven Conservancy East Phase 5**
LOCATION: **City of Ottawa**
File Ref:
Date: 01 Dec 2022
Sheet No. SHEET 1 OF 3

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
	548	528	0.03	0.67	0.06	3.24			0.00	0.09			0.00	0.00			0.00	0.00	16.61	58.20	78.68	92.12	134.48	196	600	600	CONC	0.25	36.0	307.0058	1.0858	0.5526	0.637
To Centerline13 - 13, Pipe 528 - HW9						3.24				0.09				0.00				0.00	17.17														
Centerline8 - 08																																	
	539	540	0.32	0.67	0.60	0.60			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	46	300	300	PVC	0.40	52.0	61.1589	0.8652	1.0017	0.749
	540	541	0.41	0.67	0.76	1.36			0.00	0.00			0.00	0.00			0.00	0.00	11.00	73.16	99.18	116.24	169.89	99	450	450	CONC	0.20	68.0	127.5033	0.8017	1.4137	0.780
	541	542	0.13	0.67	0.24	1.60			0.00	0.00			0.00	0.00			0.00	0.00	12.42	68.63	92.96	108.91	159.13	110	450	450	CONC	0.25	10.5	142.5531	0.8963	0.1952	0.771
	542	543	0.17	0.67	0.32	1.92			0.00	0.00			0.00	0.00			0.00	0.00	12.61	68.05	92.17	107.98	157.76	131	600	600	CONC	0.15	48.0	237.8056	0.8411	0.9512	0.549
To Centerline13 - 13, Pipe 543 - 528						1.92				0.00				0.00				0.00	13.56														
Centerline1 - 01																																	
	519	521			0.00	0.00	0.75	0.67	1.40	1.40			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	146	525	525	CONC	0.20	118.0	192.3297	0.8885	2.2136	0.757
To Centerline3 - 03, Pipe 521 - 524						0.00				1.40				0.00				0.00	12.21														
	535	536			0.00	0.00	0.21	0.80	0.47	0.47			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	49	375	375	PVC	0.30	51.5	96.0323	0.8695	0.9872	0.507
	536	537			0.00	0.00	0.18	0.80	0.40	0.87			0.00	0.00			0.00	0.00	10.99	73.21	99.25	116.32	170.01	86	450	450	CONC	0.20	53.5	127.5033	0.8017	1.1122	0.675
To Centerline13 - 13, Pipe 537 - 538						0.00				0.87				0.00				0.00	12.10														
Contribution From Centerline11 - 11, Pipe 515 - 516						5.07				0.69				0.85				0.00	17.57														
	516	521			0.00	5.07	0.25	0.67	0.47	1.15			0.00	0.85			0.00	0.00	17.57	56.29	76.07	89.05	129.98	449	900	900	CONC	0.11	58.0	600.4123	0.9438	1.0242	0.748
To Centerline3 - 03, Pipe 521 - 524						5.07				1.15				0.85				0.00	18.60														
Centerline9 - 09																																	
			0.25	0.80	0.56	0.56			0.00	0.00			0.00	0.00			0.00	0.00															
	531	533	0.36	0.67	0.67	1.23			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	94	525	525	CONC	0.20	104.5	192.3297	0.8885	1.9603	0.490
To Centerline6 - 06, Pipe 533 - 534						1.23				0.00				0.00				0.00	11.96														
	544	545	0.36	0.80	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	78.5	96.0323	0.8695	1.5047	0.640
	545	546	0.26	0.80	0.58	1.38			0.00	0.00			0.00	0.00			0.00	0.00	11.50	71.47	96.86	113.51	165.88	99	450	450	CONC	0.20	78.5	127.5033	0.8017	1.6320	0.773
To Centerline12 - 12, Pipe 546 - 547						1.38				0.00				0.00				0.00	13.14														
Centerline6 - 06																																	
			0.20	0.80	0.44	0.44			0.00	0.00			0.00	0.00			0.00	0.00															
	532	533	0.64	0.40	0.71	1.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	89	450	450	CONC	0.20	62.0	127.5033	0.8017	1.2889	0.697
Contribution From Centerline9 - 09, Pipe 531 - 533						1.23				0.00				0.00				0.00	11.96														
	533	534	0.13	0.80	0.29	2.67			0.00	0.00			0.00	0.00			0.00	0.00	11.96	70.02	94.87	111.16	162.43	187	600	600	CONC	0.20	44.5	274.5943	0.9712	0.7637	0.681
To Centerline14 - 14, Pipe 534 - 537						2.67				0.00				0.00				0.00	12.72														
Centerline15 - 15																																	
	506	507			0.00	0.00			0.00	0.00	0.36	0.85	0.85	0.85			0.00	0.00	10.00	76.81	104.19	122.14	178.56	104	450	450	CONC	0.25	77.0	142.5531	0.8963	1.4318	0.729
To Centerline4 - 04, Pipe 507 - 513						0.00				0.00				0.85				0.00	11.43														
					0.00	0.00			0.00	0.00	0.23	0.85	0.54	0.54			0.00	0.00															
	526	529	0.93	0.80	2.07	2.07			0.00	0.00			0.00	0.54			0.00	0.00	10.00	76.81	104.19	122.14	178.56	225	600	600	CONC	0.25	62.0	307.0058	1.0858	0.9517	0.734
To Centerline14 - 14, Pipe 529 - 530						2.07				0.00				0.54				0.00	10.95														
	527	529			0.00	0.00			0.00	0.00	0.26	0.85	0.61	0.61			0.00	0.00	10.00	76.81	104.19	122.14	178.56	75	375	375	PVC	0.35	46.0	103.7267	0.9392	0.8163	0.723
To Centerline14 - 14, Pipe 529 - 530						0.00				0.00				0.61				0.00	10.82														
	503	504			0.00	0.00	0.10	0.85	0.24	0.24			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	25	300	300	PVC	0.35	41.0	57.2089	0.8093	0.8443	0.430
	504	505			0.00	0.00	0.14	0.85	0.33	0.57			0.00	0.00			0.00	0.00	10.84	73.71	99.94	117.13	171.19	57	375	375	PVC	0.30	60.0	96.0323	0.8695	1.1501	0.590
Contribution From Centerline7 - 07, Pipe 502 - 505						0.63				0.00				0.00				0.00	12.85														
	505	507			0.00	0.63	0.05	0.85	0.12	0.69			0.00	0.00			0.00	0.00	12.85	67.36	91.22	106.87	156.13	105	525	525	CONC	0.20	21.0	192.3297	0.8885	0.3939	0.547
To Centerline4 - 04, Pipe 507 - 513						0.63				0.69				0.00				0.00	13.24														

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: A.S.
Checked: W.L./V.W.
Dwg. Reference:

PROJECT: **Barrhaven Conservancy East Phase 5**
LOCATION: **City of Ottawa**
File Ref:
Date: 01 Dec 2022
Sheet No. SHEET 2 OF 3

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
Centerline14 - 14																																	
Contribution From Centerline15 - 15, Pipe 526 - 529						2.07				0.00				0.54				0.00	10.95														
Contribution From Centerline15 - 15, Pipe 527 - 529						0.00				0.00				0.61				0.00	10.82														
	529	530	0.52	0.80	1.16	3.22			0.00	0.00			0.00	1.16			0.00	0.00	10.95	73.33	99.42	116.52	170.30	371	825	825	CONC	0.11	26.5	476.0801	0.8906	0.4959	0.780
	530	534			0.00	3.22			0.00	0.00			0.00	1.16			0.00	0.00	11.45	71.66	97.12	113.81	166.33	363	825	825	CONC	0.11	117.0	476.0801	0.8906	2.1895	0.762
Contribution From Centerline6 - 06, Pipe 533 - 534						2.67				0.00				0.00				0.00	12.72														
	534	537	0.11	0.80	0.24	6.14			0.00	0.00			0.00	1.16			0.00	0.00	13.64	65.18	88.24	103.36	150.97	520	900	900	CONC	0.15	48.5	701.1305	1.1021	0.7334	0.742
To Centerline13 - 13, Pipe 537 - 538						6.14				0.00				1.16				0.00	14.37														
Centerline13 - 13																																	
Contribution From Centerline14 - 14, Pipe 534 - 537						6.14				0.00				1.16				0.00	14.37														
Contribution From Centerline1 - 01, Pipe 536 - 537						0.00				0.87				0.00				0.00	12.10														
					0.00	6.14	0.06	0.67	0.11	0.98			0.00	1.16			0.00	0.00															
	537	538	0.28	0.67	0.52	6.66			0.00	0.98			0.00	1.16			0.00	0.00	14.37	63.29	85.65	100.31	146.50	622	975	975	CONC	0.15	83.0	867.9562	1.1625	1.1899	0.716
	538	543	0.25	0.67	0.47	7.13			0.00	0.98			0.00	1.16			0.00	0.00	15.56	60.48	81.79	95.77	139.84	622	975	975	CONC	0.15	69.0	867.9562	1.1625	0.9892	0.717
Contribution From Centerline8 - 08, Pipe 542 - 543						1.92				0.00				0.00				0.00	13.56														
	543	528	0.05	0.67	0.09	9.14			0.00	0.98			0.00	1.16			0.00	0.00	16.55	58.34	78.86	92.33	134.80	717	1050	1050	CONC	0.11	29.0	905.6791	1.0459	0.4621	0.792
Contribution From Centerline12 - 12, Pipe 548 - 528						3.24				0.09				0.00				0.00	17.17														
	528	HW9			0.00	12.38			0.00	1.07			0.00	1.16			0.00	0.00	17.17	57.08	77.15	90.32	131.84	894	1050	1050	CONC	0.20	4.5	1221.2174	1.4103	0.0532	0.732

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: A.S.	PROJECT: Barrhaven Conservancy East Phase 5	
Checked: W.L./V.W.	LOCATION: City of Ottawa	
Dwg. Reference:	File Ref:	Date: 01 Dec 2022 / Sheet No. SHEET 3 OF 3

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)

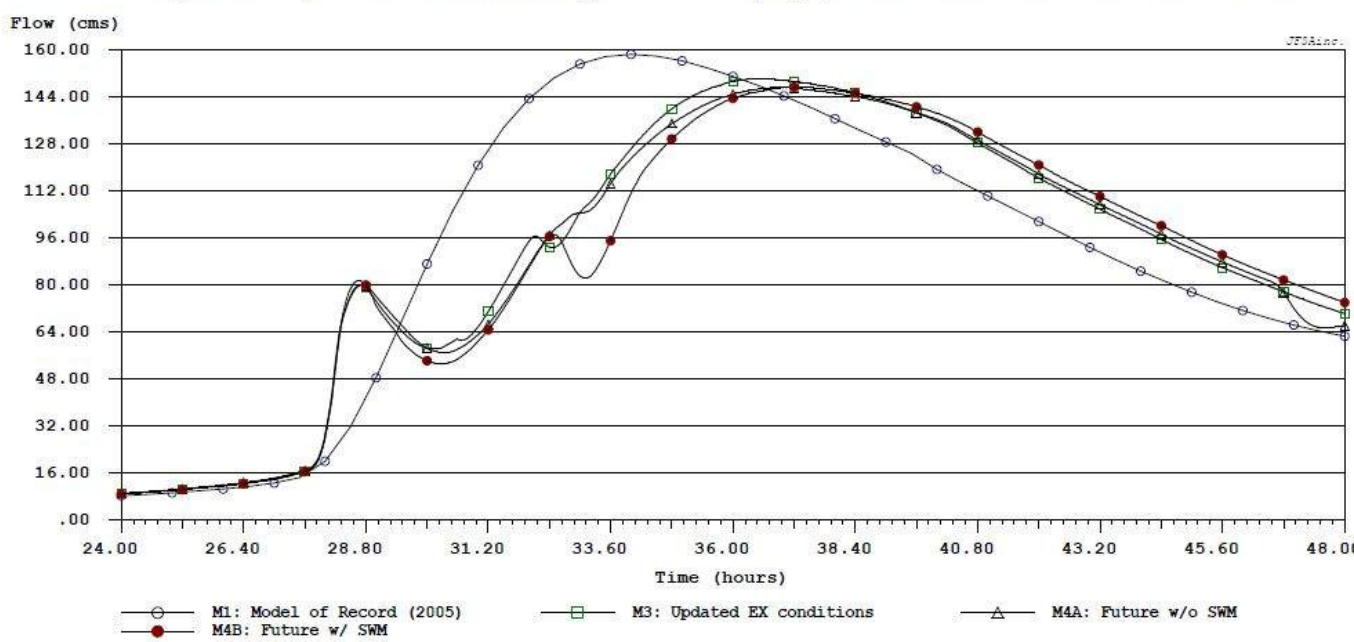
Scenario	Return Period					
	2-Year	5- Year	10-Year	25-Year	50-Year	100-Year
Model 1: 2005 Floodplain Study	49.16	72.08	89.96	115.84	136.46	158.42
Model 2: Stantec 2007 Reach One Analysis	50.78	73.65	n/a	113.97	n/a	157.69
Model 3: Updated Model 2 to current/ approved conditions	49.72	72.36	88.45	112.2	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

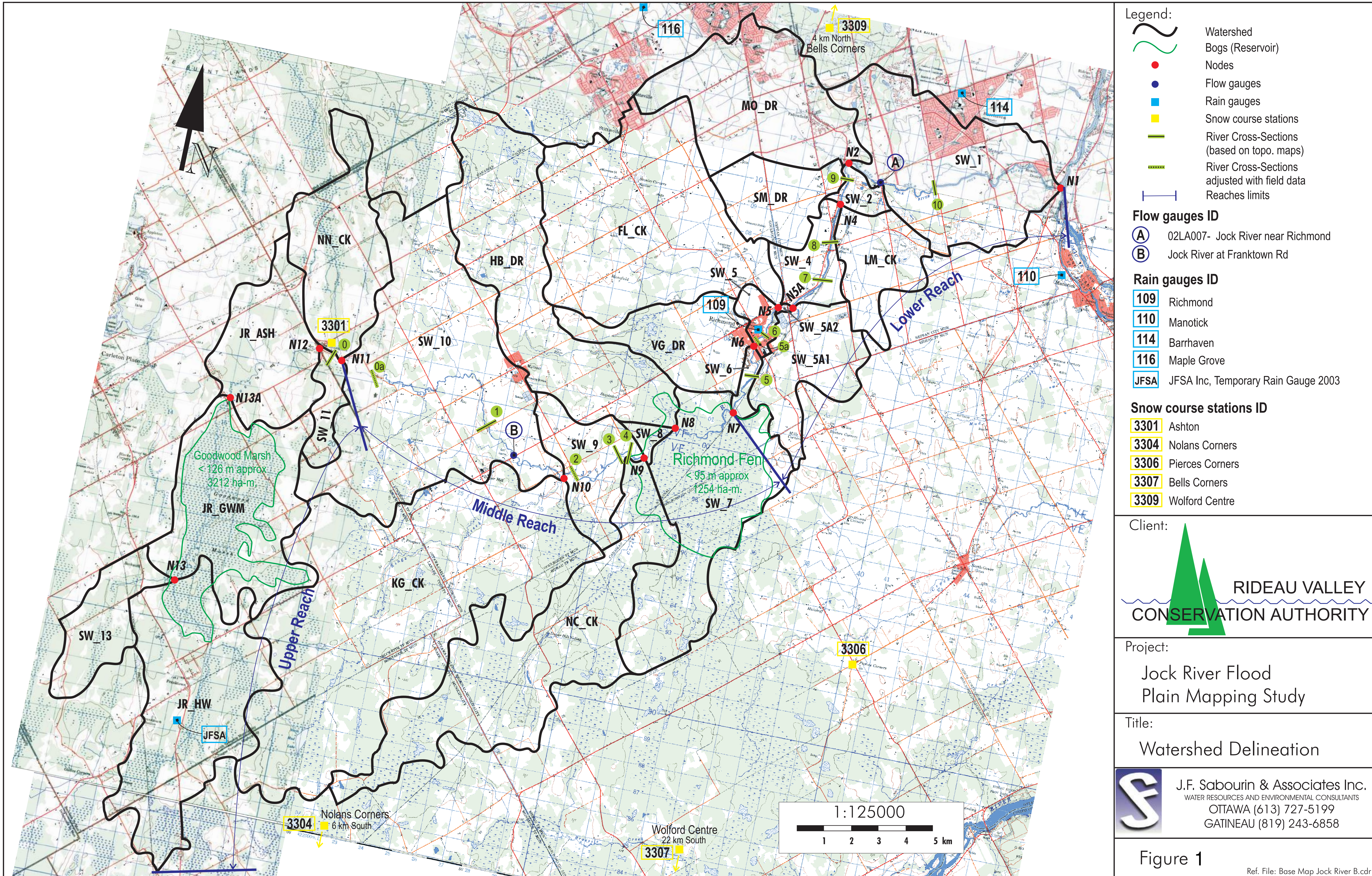
Figure 1: Model 1 – Jock River Floodplain Model – JFSA, 2005
Figure 2: Model 2 – Jock River Reach One Model – Stantec, 2007
Figure 3: Model 3 – Jock River Reach One Model Update - JFSA, 2021
Figure 4: Model 4A & 4B – Jock River Reach One Future Conditions - JFSA, 2021

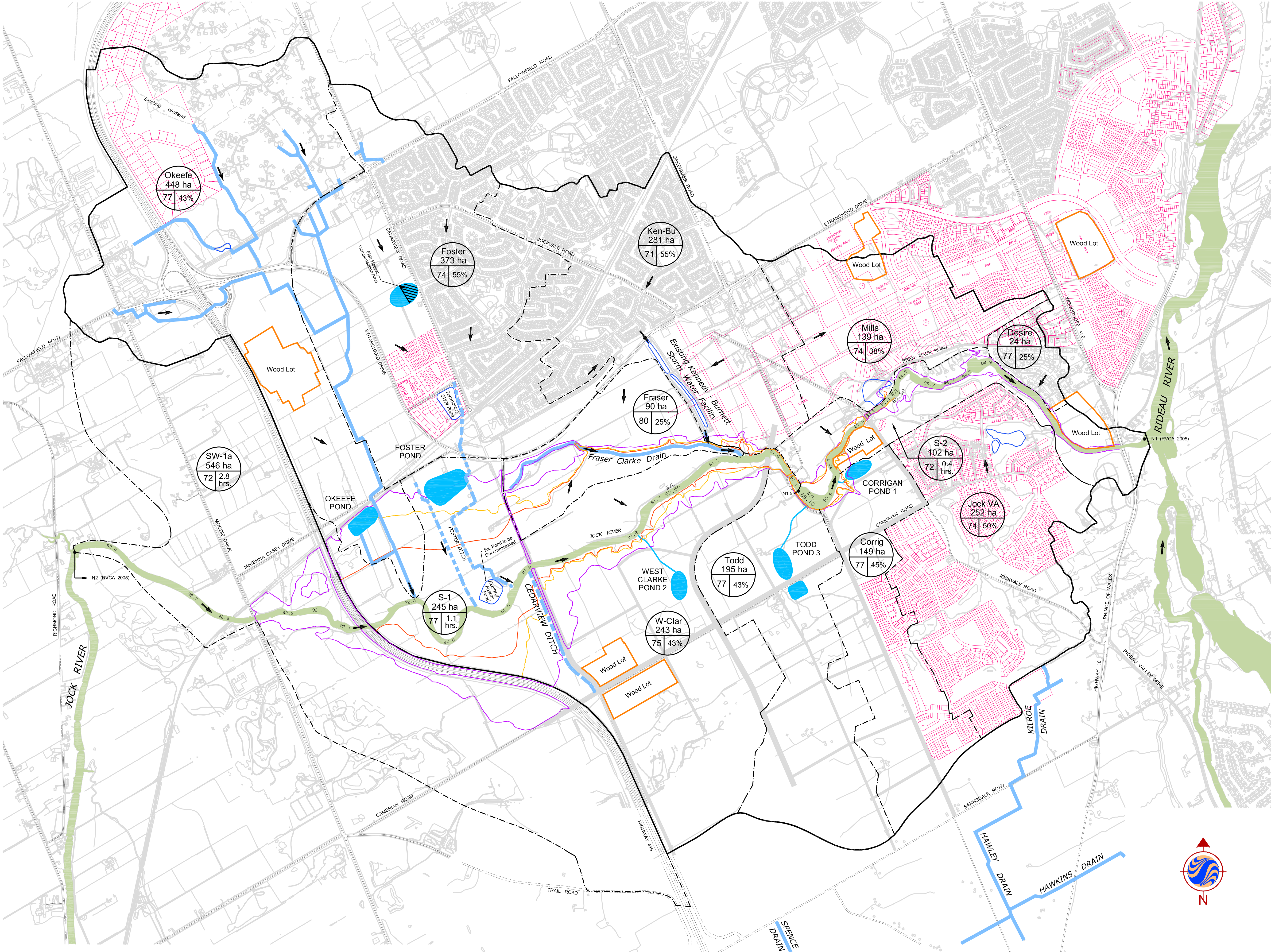
Tables

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
1:125000
1 2 3 4 5 km
N
116
3309
4 km North
Bells Corners
114
MO_DR
SM_DR
FL_CK
SW_1
SW_2
SW_4
SW_5
SW_5A1
SW_5A2
SW_6
SW_7
SW_8
SW_9
SW_10
SW_11
SW_13
LM_CK
HB_DR
NN_CK
VG_DR
JR_ASH
JR_GWM
JR_HW
KG_CK
NC_CK
N1
N2
N4
N5
N5A
N6
N7
N8
N9
N10
N11
N12
N13
N13A
109
110
3301
JFSA
Lower Reach
Middle Reach
Upper Reach
Goodwood Marsh
< 126 m approx
3212 ha-m.
Richmond Fen
< 95 m approx
1254 ha-m.
3306
3304
Nolans Corners
6 km South
3307
Wolford Centre
22 km South



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

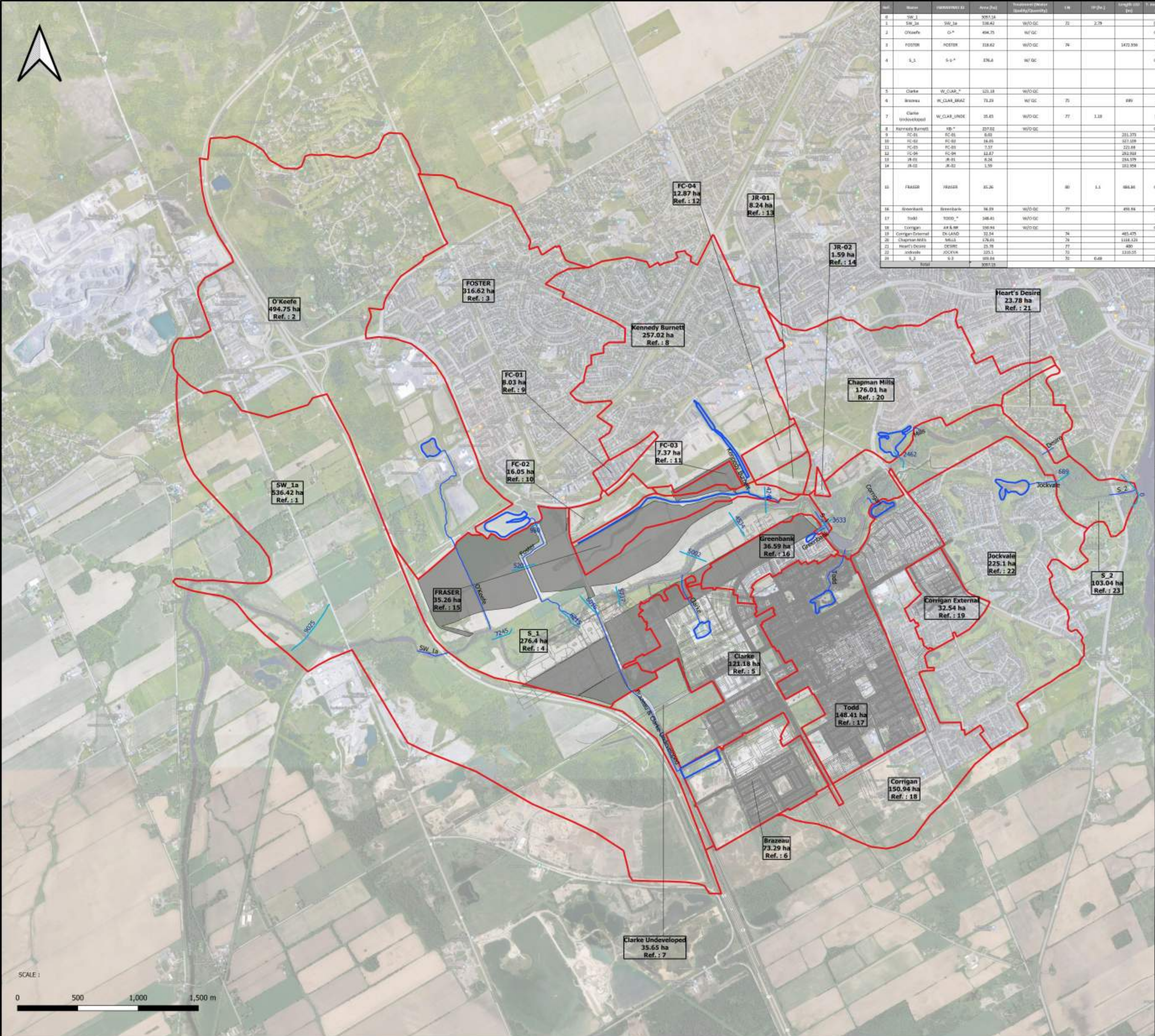
PROPOSED CONDITIONS HYDROLOGIC MODEL DRAINAGE BOUNDARIES

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

Drawing No. Sheet Revision

Figure 2 1 of 1 1

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		1472.936	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 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 5056				
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				221.88	0.84	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	0.84	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	664.84	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	0.682	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	AR & BR	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		1118.121	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		73		1310.55	0.5	0.5	STANDHYD	Jock River at Station 0				
24	S_2	S-2	103.04		72	0.49		[0.4]		NASHYD	Rideau River				
Total			3057.15												



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 (613) 836-3884
Ottawa, ON, K2S 1B9 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

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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

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

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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.                     ************
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*********************************************************************************************

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++++++++++++++++++ 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:MD_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 ]
#*******************************************************************************
#  SWMHYMD 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 &100yr 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_M"] ,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 residential 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 = storm001
      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 SW1a
# - 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 &100yr 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 SW1a
#    - 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:SW1a      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:SW1a      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 &100yr 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
    {MkStoUsed=.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
    {MkStoUsed=.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
    {MkStoUsed=.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
    {MkStoUsed=.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
    {MkStoUsed=.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
    {MkStoUsed=.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
    {MkStoUsed=.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
    {MkStoUsed=.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 &100yr 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 &100yr 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]
```

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       [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 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),

*                        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"]
*                          TMISTO=[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"]
*                     TMISTO=[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"]
*                     TMISTO=[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"]
*                    TMISTO=[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_MI"], CINLET=[0.213](cms), NINLET=[1],
*                     MajNHYD=["W_CLAR_Mj"]
*                     MinNHYD=["W_CLAR_Min"]
*                     TMISTO=[0.1](cu-m)
*%-----------------|-----------------------------------------------------------|
*# 5-Year + 12% Capture
ROUTE RESERVOIR      NHYDout=["W_CLAR_Min"] ,NHYDin=["W_CLAR_MI"] ,
                     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_Mj"] ,
*%-----------------|-----------------------------------------------------------|
*     -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_MI 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_Mj"]
*%-----------------|-----------------------------------------------------------|
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_MI"], 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"]
                             TMISTO=[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-MI"+"B3-MI"]
*%-----------------|-----------------------------------------------------------|
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 TMISTO in COMPUTE DUALHYD (TMISTO = 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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:Duml1          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); remining 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
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#    - 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}
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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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:MD_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 SW1a
#    - 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}
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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
```

```
03741>      remark:Total Flows at Sation 520 on Foster Drain
03742> # Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
03743> # Channel X-Section obtained from RVCA Hydraulic Model - Station 520
03744> #
03745> R0005:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03746>    ROUTE CHANNEL   ->    1.0 02:520          335.49    5.129 No_date   29:14   37.23  n/a     .000
03747>     [RDT= 1.00] out<-    1.0 01:520-out      335.49    5.080 No_date   29:32   37.23  n/a     .000
03748>      [L/S/n=  860./ .587/.035]
03749>      {Vmax= 1.320:Dmax=  .607}
03750> R0005:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03751>    CONTINUOUS NASHYD     1.0 01:S-1-FO-F-D    14.96     .206 No_date   29:05   21.69 .380     .000
03752>      [CN= 77.0: N= 3.00: Tp= 1.01]
03753>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03754>      [InterEventTime=  12.00]
03755> R0005:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03756>    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .654 No_date   28:00   42.00 .735     .000
03757>      [XIMP=.65:TIMP=.65]
03758>      [LOSS= 2 :CN= 75.0]
03759>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
03760>      [Impervious  area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
03761>      [IaRECimp=   4.00: IaRECper=   4.00]
03762>      [SMIN= 33.81: SMAX=225.43: SK= .010]
03763> R0005:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03764>    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    1.479 No_date   28:37   21.69 .380     .000
03765>      [CN= 77.0: N= 3.00: Tp=  .62]
03766>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03767>      [InterEventTime=  12.00]
03768> R0005:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03769>    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .462 No_date   29:11   21.69 .380     .000
03770>      [CN= 77.0: N= 3.00: Tp= 1.10]
03771>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03772>      [InterEventTime=  12.00]
03773> R0005:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03774>    ADD HYD               1.0 02:N_FO       53577.82   69.117 No_date   34:07   18.36  n/a     .000
03775>                  +       1.0 02:520-out      335.49    5.080 No_date   29:32   37.23  n/a     .000
03776>                  +       1.0 02:MS_P10        73.29    1.101 No_date   28:56   41.22  n/a     .000
03777>                  +       1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
03778>                  +       1.0 02:W_CLAR_UND    35.65     .462 No_date   29:11   21.69  n/a     .000
03779>                  +       1.0 02:S-1-FO-F-D    14.96     .206 No_date   29:05   21.69  n/a     .000
03780>                  +       1.0 02:S-1-D8         5.27     .654 No_date   28:00   42.00  n/a     .000
03781>                  +       1.0 02:S-1-A         75.88    1.479 No_date   28:37   21.69  n/a     .000
03782>                SUM=      1.0 01:SN_FO      54118.36   71.824 No_date   33:59   18.52  n/a     .000
03783> R0005:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03784>    SAVE HYD              1.0 01:SN_FO      54118.36   71.824 No_date   33:59   18.52  n/a     .000
03785>      fname :SN_FO.0005
03786>      remark:Total Flows at Foster Drain
03787> # Hydrograph from Node Foster routed to Node at Cedarview Road
03788> # Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
03789> #
03790> R0005:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03791>    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   71.824 No_date   33:59   18.52  n/a     .000
03792>  *  [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   71.792 No_date   34:07   18.52  n/a     .000
03793>      [L/S/n=  159./ .082/.035]
03794>      {Vmax= 1.246:Dmax= 3.101}
03795> #***************************************************************************
03796> #    Catchment S-1
03797> #    - To Jock River (north and south of Jock)
03798> #    - Primarily agricultural fields; portion of sand quarry
03799> #***************************************************************************
03800> R0005:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03801>    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    1.342 No_date   28:24   21.69 .380     .000
03802>      [CN= 77.0: N= 3.00: Tp=  .45]
03803>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03804>      [InterEventTime=  12.00]
03805> #    -  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
03806> #    -  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
03807> #    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
03808> R0005:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03809>    CONTINUOUS NASHYD     1.0 01:S-1-D1        21.67     .287 No_date   29:09   21.69 .380     .000
03810>      [CN= 77.0: N= 3.00: Tp= 1.07]
03811>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03812>      [InterEventTime=  12.00]
03813> R0005:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03814>    CONTINUOUS NASHYD     1.0 01:S-1-D4         3.28     .042 No_date   29:11   21.69 .380     .000
03815>      [CN= 77.0: N= 3.00: Tp= 1.10]
03816>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03817>      [InterEventTime=  12.00]
03818> R0005:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03819>    CONTINUOUS NASHYD     1.0 01:S-1-D5        12.84     .166 No_date   29:11   21.69 .380     .000
03820>      [CN= 77.0: N= 3.00: Tp= 1.10]
03821>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03822>      [InterEventTime=  12.00]
03823> R0005:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03824>    CONTINUOUS NASHYD     1.0 01:S-1-D6         1.75     .023 No_date   29:11   21.69 .380     .000
03825>      [CN= 77.0: N= 3.00: Tp= 1.10]
03826>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03827>      [InterEventTime=  12.00]
03828> R0005:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03829>    CONTINUOUS NASHYD     1.0 01:S-1-D7         2.03     .026 No_date   29:11   21.69 .380     .000
03830>      [CN= 77.0: N= 3.00: Tp= 1.10]
03831>      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
03832>      [InterEventTime=  12.00]
03833> #    Catchment W_CLAR
03834> #    - To West Clarke Drain (south of the Jock)
03835> #    - Subdivision with 43% imp. as per Barrhaven South MSS
03836> #    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
03837> #    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
03838> #***************************************************************************
03839> R0005:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03840>    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36 .654     .000
03841>      [XIMP=.46:TIMP=.59]
03842>      [LOSS= 2 :CN= 77.0]
03843>      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
03844>      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
03845>      [IaRECimp=   4.00: IaRECper=   4.00]
03846>      [SMIN= 31.15: SMAX=207.66: SK= .010]
03847> # 5-Year + 12% Capture
03848> R0005:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03849>    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36  n/a     .000
03850>               out <=     1.0 01:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
03851>          overflow <=     1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
03852>     {MxStoUsed=.9116E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
03853> R0005:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03854>    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22 .722     .000
03855>      [XIMP=.60:TIMP=.65]
03856>      [LOSS= 2 :CN= 77.0]
03857>      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
03858>      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
03859>      [IaRECimp=   4.00: IaRECper=   4.00]
03860>      [SMIN= 31.15: SMAX=207.66: SK= .010]
03861> R0005:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03862>    ADD HYD               1.0 02:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22  n/a     .000
03863>                  +       1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
03864>                SUM=      1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
03865> R0005:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03866>    SAVE HYD              1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
03867>      fname :W_CLAR.0005
03868>      remark:Total Flows to West Clarke
03869> #***************************************************************************
03870> #    West Clarke Pond 2
03871> #    - Rating curve obtained from Barrhaven South MSS modeling
03872> #    - Tributary Drainage Area to MSS Pond 2 = 241 ha
03873> #***************************************************************************
03874> R0005:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03875>    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
03876>               out <=     1.0 01:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
03877>          overflow <=     1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
03878>     {MxStoUsed=.2665E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
03879> #***************************************************************************
03880> R0005:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03881>    ADD HYD               1.0 02:N_CE       54118.36   71.792 No_date   34:07   18.52  n/a     .000
03882>                  +       1.0 02:S-1-D4         3.28     .042 No_date   29:11   21.69  n/a     .000
03883>                  +       1.0 02:S-1-D5        12.84     .166 No_date   29:11   21.69  n/a     .000
03884>                  +       1.0 02:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
03885>                  +       1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
03886>                SUM=      1.0 01:SN_CE      54253.88   72.522 No_date   34:07   18.57  n/a     .000
03887> R0005:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03888>    SAVE HYD              1.0 01:SN_CE      54253.88   72.522 No_date   34:07   18.57  n/a     .000
03889>      fname :SN_CE.0005
03890>      remark:Total Flows before Station 5737 on Jock River
03891> # Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
03892> # JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
03893> # JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
03894> R0005:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03895>    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.88   72.522 No_date   34:07   18.57  n/a     .000
03896>  *  [RDT= 1.00] out<-    1.0 01:5737       54253.88   70.229 No_date   36:14   18.57  n/a     .000
03897>      [L/S/n=  270./ .018/.035]
03898>      {Vmax=  .686:Dmax= 4.074}
03899> R0005:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03900>    ADD HYD               1.0 02:5737       54253.88   70.229 No_date   36:14   18.57  n/a     .000
03901>                  +       1.0 02:S-1-D1        21.67     .287 No_date   29:09   21.69  n/a     .000
03902>                  +       1.0 02:S-1-D6         1.75     .023 No_date   29:11   21.69  n/a     .000
03903>                  +       1.0 02:S-1-D7         2.03     .026 No_date   29:11   21.69  n/a     .000
03904>                SUM=      1.0 01:5002       54279.33   70.280 No_date   36:14   18.57  n/a     .000
03905> R0005:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03906>    SAVE HYD              1.0 01:5002       54279.33   70.280 No_date   36:14   18.57  n/a     .000
03907>      fname :5002.0005
03908>      remark:Total Flows before Station 5002 on Jock River
03909> # Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
03910> # Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
03911> # 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
03912> # 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
03913> # 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
03914> R0005:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03915>    ROUTE CHANNEL   ->    1.0 02:5002       54279.33   70.280 No_date   36:14   18.57  n/a     .000
03916>     [RDT= 1.00] out<-    1.0 01:N_WCa      54279.33   70.286 No_date   36:12   18.57  n/a     .000
03917>      [L/S/n=  245./ .095/.035]
03918>      {Vmax= 1.070:Dmax= 2.329}
03919> R0005:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03920>    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.33   70.286 No_date   36:12   18.57  n/a     .000
03921>     [RDT= 1.00] out<-    1.0 01:N_WCb      54279.33   70.290 No_date   36:11   18.57  n/a     .000
03922>      [L/S/n=  245./ .095/.035]
03923>      {Vmax= 1.070:Dmax= 2.329}
03924> R0005:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03925>    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.33   70.290 No_date   36:11   18.57  n/a     .000
03926>     [RDT= 1.00] out<-    1.0 01:N_WC       54279.33   70.433 No_date   37:41   18.57  n/a     .000
03927>      [L/S/n=  245./ .095/.035]
03928>      {Vmax= 1.070:Dmax= 2.329}
03929> #***************************************************************************
03930> # Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
03931> # Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
03932> #
03933> R0005:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03934>    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.33   70.433 No_date   37:41   18.57  n/a     .000
03935>     [RDT= 1.00] out<-    1.0 01:N_KB       54279.33   70.411 No_date   37:42   18.57  n/a     .000
03936>      [L/S/n= 1020./ .050/.035]
03937>      {Vmax=  .948:Dmax= 2.868}
03938> #***************************************************************************
03939> #    Catchment KEN_BU
03940> #    - To Kennedy-Burnett SWM Facility
03941> #    - Outlets to Fraser-Clarke drain (north of the Jock)
03942> #    - Medium density residential subdivision
03943> #***************************************************************************
03944> #***************************************************************************
03945> #   Existing Kennedy-Burnett SWM Facility
03946> #    - Rating curve obtained from URTKBP
03947> #    - Tributary Drainage Area to Pond = 160 ha
03948> #***************************************************************************
03949> R0005:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03950>    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08 .351     .000
03951>      [XIMP=.10:TIMP=.40]
03952>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
03953>      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
03954>      [Impervious  area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
03955>      [IaRECimp=   4.00: IaRECper=   4.00]
03956> R0005:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03957>    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08  n/a     .000
03958>     Major System  /      1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
03959>     Minor System  \      1.0 03:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
03960>      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
03961> R0005:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03962>    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
03963>                  +       1.0 02:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
03964>                SUM=      1.0 01:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a     .000
03965> R0005:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03966>    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42 .393     .000
03967>      [XIMP=.19:TIMP=.38]
03968>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
03969>      [Pervious    area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
03970>      [Impervious  area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
03971>      [IaRECimp=   4.00: IaRECper=   4.00]
03972> R0005:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03973>    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42  n/a     .000
03974>     Major System  /      1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
03975>     Minor System  \      1.0 03:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
03976>      {MjSysSto=.1530E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
03977> R0005:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03978>    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
03979>                  +       1.0 02:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
03980>                SUM=      1.0 01:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a     .000
03981> R0005:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03982>    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43 .410     .000
03983>      [XIMP=.20:TIMP=.41]
03984>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
03985>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
03986>      [Impervious  area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
03987>      [IaRECimp=   4.00: IaRECper=   4.00]
03988> R0005:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03989>    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43  n/a     .000
03990>     Major System  /      1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
03991>     Minor System  \      1.0 03:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
03992>      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
03993> R0005:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03994>    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
03995>                  +       1.0 02:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
03996>                SUM=      1.0 01:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a     .000
03997> R0005:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
03998>    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99 .402     .000
03999>      [XIMP=.20:TIMP=.39]
04000>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04001>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04002>      [Impervious  area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
04003>      [IaRECimp=   4.00: IaRECper=   4.00]
04004> R0005:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04005>    COMPUTE DUALHYD       1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99  n/a     .000
04006>     Major System  /      1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04007>     Minor System  \      1.0 03:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
04008>      {MjSysSto=.5145E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
04009> R0005:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04010>    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04011>                  +       1.0 02:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
04012>                SUM=      1.0 01:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a     .000
04013> R0005:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04014>    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53 .867     .000
04015>      [XIMP=.85:TIMP=.85]
04016>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04017>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04018>      [Impervious  area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
04019>      [IaRECimp=   4.00: IaRECper=   4.00]
04020> R0005:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04021>    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53  n/a     .000
04022>     Major System  /      1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04023>     Minor System  \      1.0 03:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
04024>      {MjSysSto=.3742E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
04025> R0005:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04026>    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04027>                  +       1.0 02:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
04028>                SUM=      1.0 01:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a     .000
04029> R0005:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04030>    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19     .855 No_date   28:00   52.49 .919     .000
04031>      [XIMP=.93:TIMP=.93]
04032>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04033>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04034>      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
04035>      [IaRECimp=   4.00: IaRECper=   4.00]
04036> R0005:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04037>    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55 .885     .000
04038>      [XIMP=.87:TIMP=.87]
04039>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04040>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04041>      [Impervious  area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
04042>      [IaRECimp=   4.00: IaRECper=   4.00]
04043> R0005:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04044>    COMPUTE DUALHYD       1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55  n/a     .000
04045>     Major System  /      1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04046>     Minor System  \      1.0 03:KB-06-MN      12.93    2.190 No_date   28:00   50.55  n/a     .000
04047>      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
04048> R0005:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04049>    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04050>                  +       1.0 02:KB-06-MN      12.93    2.190 No_date   28:00   50.55  n/a     .000
04051>                SUM=      1.0 01:KB-06-S       12.93    2.190 No_date   28:00   50.55  n/a     .000
04052> R0005:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04053>    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .584 No_date   28:00   41.88 .733     .000
04054>      [XIMP=.68:TIMP=.68]
04055>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04056>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04057>      [Impervious  area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
04058>      [IaRECimp=   4.00: IaRECper=   4.00]
04059> R0005:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04060>    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .584 No_date   28:00   41.88  n/a     .000
04061>     Major System  /      1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04062>     Minor System  \      1.0 03:KB-11-MN       4.03     .577 No_date   28:00   41.89  n/a     .000
04063>      {MjSysSto=.4277E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
04064> R0005:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04065>    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
04066>                  +       1.0 02:KB-11-MN       4.03     .577 No_date   28:00   41.89  n/a     .000
04067>                SUM=      1.0 01:KB-11-S        4.03     .577 No_date   28:00   41.89  n/a     .000
04068> R0005:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04069>    CONTINUOUS STANDHYD   1.0 01:S1             4.99     .892 No_date   28:00   52.49 .919     .000
04070>      [XIMP=.93:TIMP=.93]
04071>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04072>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04073>      [Impervious  area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
04074>      [IaRECimp=   4.00: IaRECper=   4.00]
04075> R0005:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04076>    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .321 No_date   28:00   47.49 .831     .000
04077>      [XIMP=.79:TIMP=.79]
04078>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04079>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04080>      [Impervious  area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
04081>      [IaRECimp=   4.00: IaRECper=   4.00]
04082> R0005:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04083>    ADD HYD               1.0 02:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a     .000
04084>                  +       1.0 02:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a     .000
04085>                  +       1.0 02:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a     .000
04086>                  +       1.0 02:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a     .000
04087>                  +       1.0 02:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a     .000
04088>                  +       1.0 02:KB-05          5.19     .855 No_date   28:00   52.49  n/a     .000
04089>                  +       1.0 02:KB-06-S       12.93    2.190 No_date   28:00   50.55  n/a     .000
04090>                  +       1.0 02:KB-11-S        4.03     .577 No_date   28:00   41.89  n/a     .000
04091>                  +       1.0 02:KB-15          2.15     .321 No_date   28:00   47.49  n/a     .000
04092>                  +       1.0 02:S1             4.99     .892 No_date   28:00   52.49  n/a     .000
04093>                SUM=      1.0 01:KB-P1        206.72   14.564 No_date   28:02   27.13  n/a     .000
04094> R0005:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04095>    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   14.564 No_date   28:02   27.13  n/a     .000
04096>               out <=     1.0 01:KB-P1R       206.72   11.746 No_date   28:15   27.13  n/a     .000
04097>          overflow <=     1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
04098>     {MxStoUsed=.5868E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
04099> R0005:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04100>    ADD HYD               1.0 02:KB-P1R       206.72   11.746 No_date   28:15   27.13  n/a     .000
04101>                  +       1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
04102>                SUM=      1.0 01:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a     .000
04103> R0005:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04104>    SAVE HYD              1.0 01:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a     .000
04105>      fname :KB-Pond1.0005
04106>      remark:Total Flows at KB first pond
04107> R0005:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
04108>    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    1.770 No_date   28:00   50.11 .877     .000
04109>      [XIMP=.86:TIMP=.86]
04110>      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
04111>      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
04112>      [Impervious  area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
04113>      [IaRECimp=   4.00: IaRECper=   4.00]
04114> R0005:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
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     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
```

```
04489>         [XIMP=.52:TIMP=.57]
04490>         [LOSS= 2 :CN= 77.0]
04491>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04492>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
04493>         [IaRECimp=   4.00: IaRECper=   4.00]
04494>         [SMIN= 31.15: SMAX=207.66: SK= .010]
04495> R0005:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04496>     CONTINUOUS STANDHYD  1.0 01:TODD_P          3.06     .385 No_date   28:00   41.58 .728     .000
04497>         [XIMP=.63:TIMP=.63]
04498>         [LOSS= 2 :CN= 77.0]
04499>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04500>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
04501>         [IaRECimp=   4.00: IaRECper=   4.00]
04502>         [SMIN= 31.15: SMAX=207.66: SK= .010]
04503> # 5-Year + 12% Capture
04504> R0005:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04505>     ROUTE RESERVOIR ->   1.0 02:TODD_MI        30.23    2.959 No_date   28:02   39.47  n/a     .000
04506>  *               out <=  1.0 01:TODD_MIn       30.23    2.959 No_date   28:02   39.47  n/a     .000
04507>          overflow <=     1.0 03:TODD_MIj         .00     .000 No_date    0:00     .00  n/a     .000
04508>       {MxStoUsed=.8948E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=     0.hrs}
04509> # 5-Year + 12% Capture
04510> R0005:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04511>     ROUTE RESERVOIR ->   1.0 02:TODD_MN2        2.10     .239 No_date   28:00   38.41  n/a     .000
04512>                out <=   1.0 01:TODD_MN2n       2.10     .238 No_date   28:00   38.41  n/a     .000
04513>          overflow <=     1.0 03:TODD_MN2j        .00     .000 No_date    0:00     .00  n/a     .000
04514>       {MxStoUsed=.8965E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=     0.hrs}
04515> R0005:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04516>     ROUTE RESERVOIR ->   1.0 02:TODD_MN3         .12     .014 No_date   28:00   38.39  n/a     .000
04517>                out <=   1.0 01:TODD_MN3n        .12     .014 No_date   28:00   38.39  n/a     .000
04518>          overflow <=     1.0 03:TODD_MN3j        .00     .000 No_date    0:00     .00  n/a     .000
04519>       {MxStoUsed=.8651E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=     0.hrs}
04520> R0005:C00284-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04521>     CONTINUOUS STANDHYD  1.0 01:A2             25.50    1.991 No_date   28:03   34.66 .607     .000
04522>         [XIMP=.42:TIMP=.52]
04523>         [LOSS= 2 :CN= 75.0]
04524>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04525>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
04526>         [IaRECimp=   4.00: IaRECper=   4.00]
04527>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04528> R0005:C00285-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04529>     COMPUTE DUALHYD      1.0 01:A2             25.50    1.991 No_date   28:03   34.66  n/a     .000
04530>      Major System  /     1.0 02:A2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04531>      Minor System  \     1.0 03:A2-MN          25.50    1.818 No_date   28:00   34.70  n/a     .000
04532>       {MjSysSto=.5163E+02, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04533> R0005:C00286-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04534>     ADD HYD              1.0 02:TODD_MN2n       2.10     .238 No_date   28:00   38.41  n/a     .000
04535>                   +      1.0 02:TODD_MN3n        .12     .014 No_date   28:00   38.39  n/a     .000
04536>                   +      1.0 02:TODD_MIj         .00     .000 No_date    0:00     .00  n/a     .000
04537>                   +      1.0 02:TODD_P          3.06     .385 No_date   28:00   41.58  n/a     .000
04538>                   +      1.0 02:TODD_ALL      112.91    9.069 No_date   28:05   38.19  n/a     .000
04539>                   +      1.0 02:W_CLAR_MIn      1.77     .192 No_date   28:00   37.36  n/a     .000
04540>                SUM=      1.0 01:TODD          119.95    9.538 No_date   28:04   38.27  n/a     .000
04541> R0005:C00287-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04542>     SAVE HYD             1.0 01:TODD          119.95    9.538 No_date   28:04   38.27  n/a     .000
04543>       fname :TODD.0005
04544>       remark:Total Flows at Todd Drain
04545> #****************************************************************************
04546> #    Todd Pond 3
04547> #    - Rating curve obtained from Barrhaven South MSS modeling
04548> #    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
04549> #****************************************************************************
04550> R0005:C00288-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04551>     ROUTE RESERVOIR ->   1.0 02:TODD          119.95    9.538 No_date   28:04   38.27  n/a     .000
04552>                out <=   1.0 01:MS_P3         119.95    3.765 No_date   28:29   38.27  n/a     .000
04553>          overflow <=     1.0 03:P3-OVF           .00     .000 No_date    0:00     .00  n/a     .000
04554>       {MxStoUsed=.2351E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=     0.hrs}
04555> R0005:C00289-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04556>     ADD HYD              1.0 02:GreenB      54717.73   70.826 No_date   36:13   18.67  n/a     .000
04557>                   +      1.0 02:MS_P3         119.95    3.765 No_date   28:29   38.27  n/a     .000
04558>                   +      1.0 02:P3-OVF           .00     .000 No_date    0:00     .00  n/a     .000
04559>                   +      1.0 02:TODD_MN2j        .00     .000 No_date    0:00     .00  n/a     .000
04560>                   +      1.0 02:A2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04561>                SUM=      1.0 01:SN_TO       54837.69   71.097 No_date   36:12   18.71  n/a     .000
04562> R0005:C00290-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04563>     SAVE HYD             1.0 01:SN_TO       54837.69   71.097 No_date   36:12   18.71  n/a     .000
04564>       fname :SN_TO.0005
04565>       remark:Total Flows at Todd Drain
04566> #
04567> # Hydrograph from Todd Drain routed to Corrigan Drain
04568> # Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
04569> # 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
04570> R0005:C00291-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04571>     ROUTE CHANNEL   ->   1.0 02:SN_TO       54837.69   71.097 No_date   36:12   18.71  n/a     .000
04572>  *   [RDT= 1.00] out<-   1.0 01:N_TO        54837.69   70.986 No_date   36:25   18.71  n/a     .000
04573>       [L/S/n=  280./ .050/.045]
04574>       {Vmax=  .830:Dmax= 2.582}
04575> R0005:C00292-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04576>     SAVE HYD             1.0 01:N_TO        54837.69   70.986 No_date   36:25   18.71  n/a     .000
04577>       fname :N_TO.0005
04578>       remark:Total inflows at Station 2462
04579> #****************************************************************************
04580> #    Catchment CORRIG
04581> #    - To Corrigan Drain (south of the Jock)
04582> #    - Primarily Developed (medium density)
04583> #    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
04584> #****************************************************************************
04585> R0005:C00293-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04586>     CONTINUOUS STANDHYD  1.0 01:corr1          15.87    1.806 No_date   28:01   41.58 .728     .000
04587>         [XIMP=.63:TIMP=.63]
04588>         [LOSS= 2 :CN= 77.0]
04589>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04590>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
04591>         [IaRECimp=   4.00: IaRECper=   4.00]
04592>         [SMIN= 31.15: SMAX=207.66: SK= .010]
04593> R0005:C00294-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04594>     COMPUTE DUALHYD      1.0 01:corr1          15.87    1.806 No_date   28:01   41.58  n/a     .000
04595>      Major System  /     1.0 02:corr1-MJ         .00     .000 No_date    0:00     .00  n/a     .000
04596>      Minor System  \     1.0 03:corr1-MN       15.87    1.806 No_date   28:01   41.58  n/a     .000
04597>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04598> R0005:C00295-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04599>     CONTINUOUS NASHYD    1.0 01:corr2          12.47     .161 No_date   29:11   21.69 .380     .000
04600>       [CN= 77.0: N= 3.00: Tp= 1.10]
04601>       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
04602>       [InterEventTime=  12.00]
04603> R0005:C00296-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04604>     CONTINUOUS STANDHYD  1.0 01:A1-Corrig      15.75    1.357 No_date   28:02   34.66 .607     .000
04605>         [XIMP=.42:TIMP=.52]
04606>         [LOSS= 2 :CN= 75.0]
04607>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04608>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
04609>         [IaRECimp=   4.00: IaRECper=   4.00]
04610>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04611> R0005:C00297-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04612>     COMPUTE DUALHYD      1.0 01:A1-Corrig      15.75    1.357 No_date   28:02   34.66  n/a     .000
04613>      Major System  /     1.0 02:A1-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04614>      Minor System  \     1.0 03:A1-MN          15.75    1.357 No_date   28:02   34.66  n/a     .000
04615>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04616> R0005:C00298-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04617>     CONTINUOUS NASHYD    1.0 01:B1              2.77     .055 No_date   28:09   13.56 .237     .000
04618>       [CN= 56.0: N= 3.00: Tp=  .23]
04619>       [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
04620>       [InterEventTime=  12.00]
04621> R0005:C00299-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04622>     CONTINUOUS STANDHYD  1.0 01:A4              1.27     .153 No_date   28:00   42.00 .735     .000
04623>         [XIMP=.65:TIMP=.65]
04624>         [LOSS= 2 :CN= 75.0]
04625>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04626>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
04627>         [IaRECimp=   4.00: IaRECper=   4.00]
04628>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04629> R0005:C00300-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04630>     COMPUTE DUALHYD      1.0 01:A4              1.27     .153 No_date   28:00   42.00  n/a     .000
04631>      Major System  /     1.0 02:A4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04632>      Minor System  \     1.0 03:A4-MN           1.27     .153 No_date   28:00   42.00  n/a     .000
04633>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04634> R0005:C00301-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04635>     ADD HYD              1.0 02:A1-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04636>                   +      1.0 02:A1-MN          15.75    1.357 No_date   28:02   34.66  n/a     .000
04637>                   +      1.0 02:corr1-MJ         .00     .000 No_date    0:00     .00  n/a     .000
04638>                   +      1.0 02:corr1-MN       15.87    1.806 No_date   28:01   41.58  n/a     .000
04639>                   +      1.0 02:corr2          12.47     .161 No_date   29:11   21.69  n/a     .000
04640>                   +      1.0 02:B1              2.77     .055 No_date   28:09   13.56  n/a     .000
04641>                   +      1.0 02:A4-MN           1.27     .153 No_date   28:00   42.00  n/a     .000
04642>                SUM=      1.0 01:MH101          48.13    3.389 No_date   28:01   32.56  n/a     .000
04643> R0005:C00302-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04644>     SAVE HYD             1.0 01:MH101          48.13    3.389 No_date   28:01   32.56  n/a     .000
04645>       fname :MH101.0005
04646>       remark:Total Flows at MH101
04647> R0005:C00303-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04648>     ROUTE PIPE      ->   1.0 02:MH101          48.13    3.389 No_date   28:01   32.56  n/a     .000
04649>  *   [RDT= 1.00] out<-   1.0 01:101-102        48.13    3.277 No_date   28:03   32.56  n/a     .000
04650>       [L/S/n=  368./ .540/.013]
04651>       {Vmax= 3.010:Dmax= 1.049}
04652>       [Din= 1.05:Dused= 1.28}
04653> R0005:C00304-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04654>     ADD HYD              1.0 02:A2-MN          25.50    1.818 No_date   28:00   34.70  n/a     .000
04655>                   +      1.0 02:101-102        48.13    3.277 No_date   28:03   32.56  n/a     .000
04656>                SUM=      1.0 01:MH102          73.63    5.095 No_date   28:03   33.30  n/a     .000
04657> R0005:C00305-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04658>     SAVE HYD             1.0 01:MH102          73.63    5.095 No_date   28:03   33.30  n/a     .000
04659>       fname :MH102.0005
04660>       remark:Total Flows at MH102
04661> R0005:C00306-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04662>     CONTINUOUS STANDHYD  1.0 01:A5              1.60     .202 No_date   28:01   44.32 .776     .000
04663>         [XIMP=.71:TIMP=.71]
04664>         [LOSS= 2 :CN= 75.0]
04665>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04666>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
04667>         [IaRECimp=   4.00: IaRECper=   4.00]
04668>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04669> R0005:C00307-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04670>     ADD HYD              1.0 02:A4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04671>                   +      1.0 02:A5              1.60     .202 No_date   28:01   44.32  n/a     .000
04672>                SUM=      1.0 01:A5T             1.60     .202 No_date   28:01   44.32  n/a     .000
04673> R0005:C00308-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04674>     COMPUTE DUALHYD      1.0 01:A5T             1.60     .202 No_date   28:01   44.32  n/a     .000
04675>      Major System  /     1.0 02:A5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04676>      Minor System  \     1.0 03:A5-MN           1.60     .202 No_date   28:01   44.32  n/a     .000
04677>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04678> R0005:C00309-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04679>     ROUTE PIPE      ->   1.0 02:MH102          73.63    5.095 No_date   28:03   33.30  n/a     .000
04680>  *   [RDT= 1.00] out<-   1.0 01:102-103        73.63    4.821 No_date   28:05   33.30  n/a     .000
04681>       [L/S/n=  504./ .280/.013]
04682>       {Vmax= 2.606:Dmax= 1.382}
04683>       [Din= 1.50:Dused= 1.68}
04684> R0005:C00310-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04685>     ADD HYD              1.0 02:102-103        73.63    4.821 No_date   28:05   33.30  n/a     .000
04686>                   +      1.0 02:A5-MN           1.60     .202 No_date   28:01   44.32  n/a     .000
04687>                SUM=      1.0 01:MH103          75.23    4.991 No_date   28:04   33.53  n/a     .000
04688> R0005:C00311-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04689>     SAVE HYD             1.0 01:MH103          75.23    4.991 No_date   28:04   33.53  n/a     .000
04690>       fname :MH103.0005
04691>       remark:Total Flows at MH103
04692> R0005:C00312-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04693>     ROUTE PIPE      ->   1.0 02:MH103          75.23    4.991 No_date   28:04   33.53  n/a     .000
04694>      [RDT= 1.00] out<-   1.0 01:103-104        75.23    4.875 No_date   28:06   33.53  n/a     .000
04695>       [L/S/n=  438./ .460/.013]
04696>       {Vmax= 3.219:Dmax= 1.124}
04697>       [Din= 1.65:Dused= 1.65}
04698> R0005:C00313-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04699>     CONTINUOUS STANDHYD  1.0 01:A6              1.56     .200 No_date   28:01   44.32 .776     .000
04700>         [XIMP=.71:TIMP=.71]
04701>         [LOSS= 2 :CN= 75.0]
04702>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04703>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
04704>         [IaRECimp=   4.00: IaRECper=   4.00]
04705>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04706> R0005:C00314-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04707>     ADD HYD              1.0 02:A5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04708>                   +      1.0 02:A6              1.56     .200 No_date   28:01   44.32  n/a     .000
04709>                SUM=      1.0 01:A6T             1.56     .200 No_date   28:01   44.32  n/a     .000
04710> R0005:C00315-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04711>     COMPUTE DUALHYD      1.0 01:A6T             1.56     .200 No_date   28:01   44.32  n/a     .000
04712>      Major System  /     1.0 02:A6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04713>      Minor System  \     1.0 03:A6-MN           1.56     .200 No_date   28:01   44.32  n/a     .000
04714>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04715> R0005:C00316-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04716>     ADD HYD              1.0 02:A6-MN           1.56     .200 No_date   28:01   44.32  n/a     .000
04717>                   +      1.0 02:103-104        75.23    4.875 No_date   28:06   33.53  n/a     .000
04718>                   +      1.0 02:TODD_MIn       30.23    2.959 No_date   28:02   39.47  n/a     .000
04719>                SUM=      1.0 01:MH104         107.02    7.823 No_date   28:04   35.37  n/a     .000
04720> R0005:C00317-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04721>     SAVE HYD             1.0 01:MH104         107.02    7.823 No_date   28:04   35.37  n/a     .000
04722>       fname :MH104.0005
04723>       remark:Total Flows at MH104
04724> R0005:C00318-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04725>     CONTINUOUS STANDHYD  1.0 01:B2             12.31    1.023 No_date   28:02   34.82 .610     .000
04726>         [XIMP=.41:TIMP=.54]
04727>         [LOSS= 2 :CN= 75.0]
04728>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04729>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
04730>         [IaRECimp=   4.00: IaRECper=   4.00]
04731>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04732> R0005:C00319-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04733>     COMPUTE DUALHYD      1.0 01:B2             12.31    1.023 No_date   28:02   34.82  n/a     .000
04734>      Major System  /     1.0 02:B2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04735>      Minor System  \     1.0 03:B2-MN          12.31    1.023 No_date   28:02   34.82  n/a     .000
04736>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04737> R0005:C00320-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04738>     ROUTE PIPE      ->   1.0 02:B2-MN          12.31    1.023 No_date   28:02   34.82  n/a     .000
04739>      [RDT= 1.00] out<-   1.0 01:315-333        12.31     .941 No_date   28:04   34.82  n/a     .000
04740>       [L/S/n=  254./ .100/.013]
04741>       {Vmax= 1.219:Dmax=  .834}
04742>       [Din= 1.20:Dused= 1.20}
04743> R0005:C00321-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04744>     CONTINUOUS STANDHYD  1.0 01:B3              5.59     .477 No_date   28:02   34.82 .610     .000
04745>         [XIMP=.41:TIMP=.54]
04746>         [LOSS= 2 :CN= 75.0]
04747>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04748>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
04749>         [IaRECimp=   4.00: IaRECper=   4.00]
04750>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04751> R0005:C00322-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04752>     COMPUTE DUALHYD      1.0 01:B3              5.59     .477 No_date   28:02   34.82  n/a     .000
04753>      Major System  /     1.0 02:B3-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04754>      Minor System  \     1.0 03:B3-MN           5.59     .459 No_date   28:00   34.87  n/a     .000
04755>       {MjSysSto=.3219E+01, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04756> R0005:C00323-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04757>     ADD HYD              1.0 02:B3-MN           5.59     .459 No_date   28:00   34.87  n/a     .000
04758>                   +      1.0 02:315-333        12.31     .941 No_date   28:04   34.82  n/a     .000
04759>                SUM=      1.0 01:MH333          17.90    1.400 No_date   28:04   34.84  n/a     .000
04760> R0005:C00324-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04761>     SAVE HYD             1.0 01:MH333          17.90    1.400 No_date   28:04   34.84  n/a     .000
04762>       fname :MH333.0005
04763>       remark:Total Flows at MH333
04764> R0005:C00325-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04765>     ROUTE PIPE      ->   1.0 02:MH333          17.90    1.400 No_date   28:04   34.84  n/a     .000
04766>  *   [RDT= 1.00] out<-   1.0 01:333-335        17.90    1.320 No_date   28:06   34.84  n/a     .000
04767>       [L/S/n=  251./ .100/.013]
04768>       {Vmax= 1.282:Dmax= 1.033}
04769>       [Din= 1.20:Dused= 1.26}
04770> R0005:C00326-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04771>     ROUTE PIPE      ->   1.0 02:333-335        17.90    1.320 No_date   28:06   34.84  n/a     .000
04772>  *   [RDT= 1.00] out<-   1.0 01:335-338        17.90    1.265 No_date   28:06   34.84  n/a     .000
04773>       [L/S/n=  185./ .100/.013]
04774>       {Vmax= 1.264:Dmax= 1.010}
04775>       [Din= 1.20:Dused= 1.23}
04776> R0005:C00327-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04777>     ROUTE PIPE      ->   1.0 02:335-338        17.90    1.265 No_date   28:06   34.84  n/a     .000
04778>      [RDT= 1.00] out<-   1.0 01:338-340        17.90    1.183 No_date   28:06   34.84  n/a     .000
04779>       [L/S/n=  233./ .100/.013]
04780>       {Vmax= 1.294:Dmax=  .872}
04781>       [Din= 1.35:Dused= 1.35}
04782> R0005:C00328-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04783>     CONTINUOUS STANDHYD  1.0 01:B4              7.60     .638 No_date   28:02   34.82 .610     .000
04784>         [XIMP=.41:TIMP=.54]
04785>         [LOSS= 2 :CN= 75.0]
04786>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04787>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
04788>         [IaRECimp=   4.00: IaRECper=   4.00]
04789>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04790> R0005:C00329-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04791>     COMPUTE DUALHYD      1.0 01:B4              7.60     .638 No_date   28:02   34.82  n/a     .000
04792>      Major System  /     1.0 02:B4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04793>      Minor System  \     1.0 03:B4-MN           7.60     .638 No_date   28:02   34.82  n/a     .000
04794>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04795> R0005:C00330-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04796>     ADD HYD              1.0 02:338-340        17.90    1.183 No_date   28:06   34.84  n/a     .000
04797>                   +      1.0 02:B4-MN           7.60     .638 No_date   28:02   34.82  n/a     .000
04798>                SUM=      1.0 01:MH340          25.50    1.761 No_date   28:05   34.83  n/a     .000
04799> R0005:C00331-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04800>     SAVE HYD             1.0 01:MH340          25.50    1.761 No_date   28:05   34.83  n/a     .000
04801>       fname :MH340.0005
04802>       remark:Total Flows at MH340
04803> R0005:C00332-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04804>     ROUTE PIPE      ->   1.0 02:MH340          25.50    1.761 No_date   28:05   34.83  n/a     .000
04805>      [RDT= 1.00] out<-   1.0 01:340-104        25.50    1.698 No_date   28:06   34.83  n/a     .000
04806>       [L/S/n=  240./ .150/.013]
04807>       {Vmax= 1.648:Dmax=  .823}
04808>       [Din= 1.65:Dused= 1.65}
04809> R0005:C00333-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04810>     ADD HYD              1.0 02:340-104        25.50    1.698 No_date   28:06   34.83  n/a     .000
04811>                   +      1.0 02:MH104         107.02    7.823 No_date   28:04   35.37  n/a     .000
04812>                SUM=      1.0 01:MH104T        132.52    9.463 No_date   28:04   35.27  n/a     .000
04813> R0005:C00334-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04814>     ROUTE PIPE      ->   1.0 02:MH104T        132.52    9.463 No_date   28:04   35.27  n/a     .000
04815>  *   [RDT= 1.00] out<-   1.0 01:104-105       132.52    8.848 No_date   28:06   35.27  n/a     .000
04816>       [L/S/n=  380./ .100/.013]
04817>       {Vmax= 2.012:Dmax= 1.868}
04818>       {HGTH= 2.20:WDTH= 2.52}
04819> R0005:C00335-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04820>     CONTINUOUS STANDHYD  1.0 01:B5              2.20     .248 No_date   28:00   38.90 .681     .000
04821>         [XIMP=.57:TIMP=.57]
04822>         [LOSS= 2 :CN= 75.0]
04823>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04824>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
04825>         [IaRECimp=   4.00: IaRECper=   4.00]
04826>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04827> R0005:C00336-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04828>     COMPUTE DUALHYD      1.0 01:B5              2.20     .248 No_date   28:00   38.90  n/a     .000
04829>      Major System  /     1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04830>      Minor System  \     1.0 03:B5-MN           2.20     .248 No_date   28:00   38.90  n/a     .000
04831>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04832> R0005:C00337-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04833>     CONTINUOUS STANDHYD  1.0 01:A8               .96     .130 No_date   28:00   44.32 .776     .000
04834>         [XIMP=.71:TIMP=.71]
04835>         [LOSS= 2 :CN= 75.0]
04836>         [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
04837>         [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
04838>         [IaRECimp=   4.00: IaRECper=   4.00]
04839>         [SMIN= 33.81: SMAX=225.43: SK= .010]
04840> R0005:C00338-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04841>     ADD HYD              1.0 02:A6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04842>                   +      1.0 02:A8               .96     .130 No_date   28:00   44.32  n/a     .000
04843>                SUM=      1.0 01:A8T              .96     .130 No_date   28:00   44.32  n/a     .000
04844> R0005:C00339-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04845>     COMPUTE DUALHYD      1.0 01:A8T              .96     .130 No_date   28:00   44.32  n/a     .000
04846>      Major System  /     1.0 02:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04847>      Minor System  \     1.0 03:A8-MN            .96     .130 No_date   28:00   44.32  n/a     .000
04848>       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=     0, TotDurOvf=     0.hrs}
04849> R0005:C00340-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04850>     ADD HYD              1.0 02:104-105       132.52    8.848 No_date   28:06   35.27  n/a     .000
04851>                   +      1.0 02:B5-MN           2.20     .248 No_date   28:00   38.90  n/a     .000
04852>                   +      1.0 02:A8-MN            .96     .130 No_date   28:00   44.32  n/a     .000
04853>                   +      1.0 02:TODD_MN3j        .00     .000 No_date    0:00     .00  n/a     .000
04854>                SUM=      1.0 01:MH105         135.68    9.064 No_date   28:05   35.39  n/a     .000
04855> R0005:C00341-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04856>     SAVE HYD             1.0 01:MH105         135.68    9.064 No_date   28:05   35.39  n/a     .000
04857>       fname :MH105.0005
04858>       remark:Total Flows at MH105
04859> R0005:C00342-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
04860>  *  DIVERT HYD      ->   1.0 01:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
04861>           diverted <=    1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
04862>           diverted <=    1.0 03:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a     .000
```

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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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:MD_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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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]
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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]
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        [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_M        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_M        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_M       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_M       55194.85    88.022 No_date   36:28   23.10  n/a     .000
        fname :SN_M.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_M       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 TMISTO in COMPUTE DUALHYD (TMISTO = 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
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    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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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:MC          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:MC          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
     {MkStoUsed=.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
     {MkStoUsed=.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_MIn       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
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     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
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    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_M        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_M        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_M       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_M       55194.86  111.576 No_date   36:23   29.26  n/a     .000
      fname :SN_M.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_M       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    : [MM]
#  Company     : JFSA inc.
#  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 TMSTO in COMPUTE DUALHYD (TMSTO = 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
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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
```

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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_MI") 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_MI         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_MI         30.23     4.894 No_date   28:02   61.85  n/a      .000
                out <=    1.0 01:TODD_MIn        28.89     3.314 No_date   27:54   61.87  n/a      .000
           overflow <=    1.0 03:TODD_MIj         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_MIj         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_MIn       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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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
       {MJ SysSto=.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]
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          [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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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     : [MM]
#  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  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]
      [InterEvent Time=  12.00]
R0100:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MD_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]
      [InterEvent Time=  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
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       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_Mn        1.69      .213 No_date    27:52    66.22   n/a       .000
            overflow <=     1.0 03:W_CLAR_Mj         .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_Mj         .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:Al-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:Al-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
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     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:NI            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:NI            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_NI         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_NI         55579.20   150.120 No_date   36:32   39.56  n/a     .000
      fname :SN_NI.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"]
*                        TMISTO=[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"]
*                           TMISTO=[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"]
*                        TMISTO=[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"]
*                        TMISTO=[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),
```

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*                          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_MI"], 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_MI"], CINLET=[0.213](cms), NINLET=[1],
*                     MajNHYD=["W_CLAR_MIj"]
*                     MinNHYD=["W_CLAR_MIn"]
*                     TMJSTO=[0.1](cu-m)
*%-----------------|-------------------------------------------------------------|
*# 5-Year + 12% Capture
ROUTE RESERVOIR     NHYDout=["W_CLAR_MIn"] ,NHYDin=["W_CLAR_MI"] ,
                    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_MIj"] ,
*%-----------------|-------------------------------------------------------------|
*     -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_MI 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_MIj"]
*%-----------------|------------------------------------------------------------|
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-MI"+"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"]
                            M nNHYD=["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"]
                            M nNHYD=["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"]
                            M nNHYD=["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_MI"], CINLET=[3.314](cms), NINLET=[1],
*                          MajNHYD=["TODD_MIj"]
*                          MinNHYD=["TODD_MIn"]
*                          TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR      NHYDout=["TODD_MIn"] ,NHYDin=["TODD_MI"] ,
                          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_MIj"] ,
*%-----------------|-------------------------------------------------------------|
*# 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"]
```

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                           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-MI-JR"+"A9-MI"+"A10-MI"+"A11-MI"+"A12-MI"+"A
13-MI"]
*%-----------------|-------------------------------------------------------------|
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_M"], NHYDs to add=["N_M"+"MIL-OV"+"MILL_P"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD                NHYD=["SN_M"],   # 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-MI"+"B3-MI"]
*%-----------------|--------------------------------------------------------------|
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     : [MM]
#  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 TMISTO in COMPUTE DUALHYD (TMISTO = 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     : [MM]
#  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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:Duml1        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
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      [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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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); remining 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
     {MkStoUsed=.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_Mn       1.77      .141 No_date   28:00    27.78  n/a     .000
          overflow <=   1.0 03:W_CLAR_Mj        .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_Mj        .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
```

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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_MI") 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_MIn      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]
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        [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-MI           .00      .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:B3-MI           .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     : [MM]
#  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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:MD_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:Duml1        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:Duml1        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_Min      1.77     .192 No_date   28:00   37.36  n/a     .000
            overflow <=     1.0 03:W_CLAR_Mj        .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}
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        [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
       {MkStoUsed=.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
       {MkStoUsed=.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
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    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-MI            .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MI            .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     : [MM]
#  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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:DI             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:AI             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:AI             2.50     .391 No_date   28:01   50.29  n/a     .000
                out <=     1.0 01:AI-STR         2.50     .098 No_date   28:24   50.29  n/a     .000
           overflow <=     1.0 03:AI-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
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     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_Mn      1.77     .213 No_date   27:58   43.97  n/a     .000
            overflow <=    1.0 03:W_CLAR_Mj       .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_Mj       .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
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     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:MH33           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:MH33           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-MI             .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:B3-MI             .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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:MD_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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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:MC           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:MC           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_MIn       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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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
     {MkStoUsed=.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]
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         [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_M          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_M         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_M         55194.86  104.675 No_date   38:54   29.33  n/a    .000
       fname :SN_M.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_M         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-MI             .00     .000 No_date    0:00     .00  n/a    .000
                      +    1.0 02:B3-MI             .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 TMISTO in COMPUTE DUALHYD (TMISTO = 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
      {MkStoUsed=.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
      {MkStoUsed=.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]
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      {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
```

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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_MIn      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-MI           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MI           .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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:SW_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
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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]
       [InterEvent Time=  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]
       [InterEvent Time=  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
      {MkStoUsed=.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
      {MkStoUsed=.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]
       [InterEvent Time=  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
      {MkStoUsed=.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
      {MkStoUsed=.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]
       [InterEvent Time=  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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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]
       [InterEvent Time=  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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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]
       [InterEvent Time=  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
      {MkStoUsed=.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]
       [InterEvent Time=  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]
       [InterEvent Time=  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
      {MkStoUsed=.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]
       [InterEvent Time=  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:MC           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:MC           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]
       [InterEvent Time=  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
```

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      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
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                         +       1.0 02:A9-MI            .00      .000 No_date    0:00      .00  n/a     .000
                         +       1.0 02:A10-MI           .09      .218 No_date   28:05    59.73  n/a     .000
                         +       1.0 02:A11-MI           .16      .564 No_date   28:06    67.38  n/a     .000
                         +       1.0 02:A12-MI           .23      .599 No_date   28:05    62.88  n/a     .000
                         +       1.0 02:A13-MI           .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-MI            .36      .820 No_date   28:05    62.88  n/a     .000
                         +       1.0 02:B3-MI            .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      : [MM]
*#  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 TMISTO in COMPUTE DUALHYD (TMISTO = 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=["SWMF-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=["SMMF-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-D8R
ovf"+"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] ,
```

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*                          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:
```

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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"]
*%-----------------|------------------------------------------------------------|
```

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*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),
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*                             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:
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                        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"]
```

```
*                         TMISTO=[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"]
*                         TMISTO=[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"]
*                         TMISTO=[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_MIj"]
*%-----------------|-------------------------------------------------------------|
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_MI"], CINLET=[3.314](cms), NINLET=[1],
*                         MajNHYD=["TODD_Mj"]
*                         MinNHYD=["TODD_Mn"]
*                         TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR      NHYDout=["TODD_Mn"] ,NHYDin=["TODD_MI"] ,
                          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_Mj"] ,
*%-----------------|-------------------------------------------------------------|
*# 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-MI"]
*%-----------------|-----------------------------------------------------------|
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"]
                           TMxSTO=[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"]
                           TMxSTO=[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"]
                           TMxSTO=[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 residential 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_M"], NHYDs to add=["N_M"+"MIL-OV"+"MILL_P"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_M"],   # 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 TMISTO in COMPUTE DUALHYD (TMISTO = 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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:Duml1        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_Mj        .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_MI") 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_MI       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_MI       30.23    2.154 No_date   28:03   29.64  n/a     .000
 *                out <=     1.0 01:TODD_MIn      30.23    2.154 No_date   28:03   29.64  n/a     .000
             overflow <=     1.0 03:TODD_MIj        .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_MIj        .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_MIn     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:Al-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_M          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_M          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_M         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_M         55194.85    49.313 No_date   38:56    13.21  n/a      .000
      fname :SN_M.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_M         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 = storm001
      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]
      [APImx= 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:MD_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
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      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]
        [InterEvent Time=  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]
        [InterEvent Time=  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
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     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]
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        [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-MI            .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:B3-MI            .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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
       {MkStoUsed=.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
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                        +      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_Mn          1.77     .213 No_date   27:58   43.97  n/a     .000
             overflow <=       1.0 03:W_CLAR_Mj           .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_Mj           .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 = storm001
         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:MD_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]
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      [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_Mn       1.73      .213 No_date   27:54   52.78  n/a     .000
         overflow <=      1.0 03:W_CLAR_Mj        .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_Mj        .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
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     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-MI           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:B3-MI           .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 TMISTO in COMPUTE DUALHYD (TMISTO = 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    9.794 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:MD_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:DI             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:AI             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+04, 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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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
      {MkStoUsed=.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_MI") 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_MIn     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-MI            .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MI            .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      : [MM]
#  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 TMISTO in COMPUTE DUALHYD (TMISTO = 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:MD_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
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                       +      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-1-FO-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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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
        {MkStoUsed=.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
```

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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:MH33          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:MH33          17.35    1.488 No_date   28:35   62.96  n/a     .000
        fname :MH33.0100
        remark:Total Flows at MH33
R0100:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
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      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
```

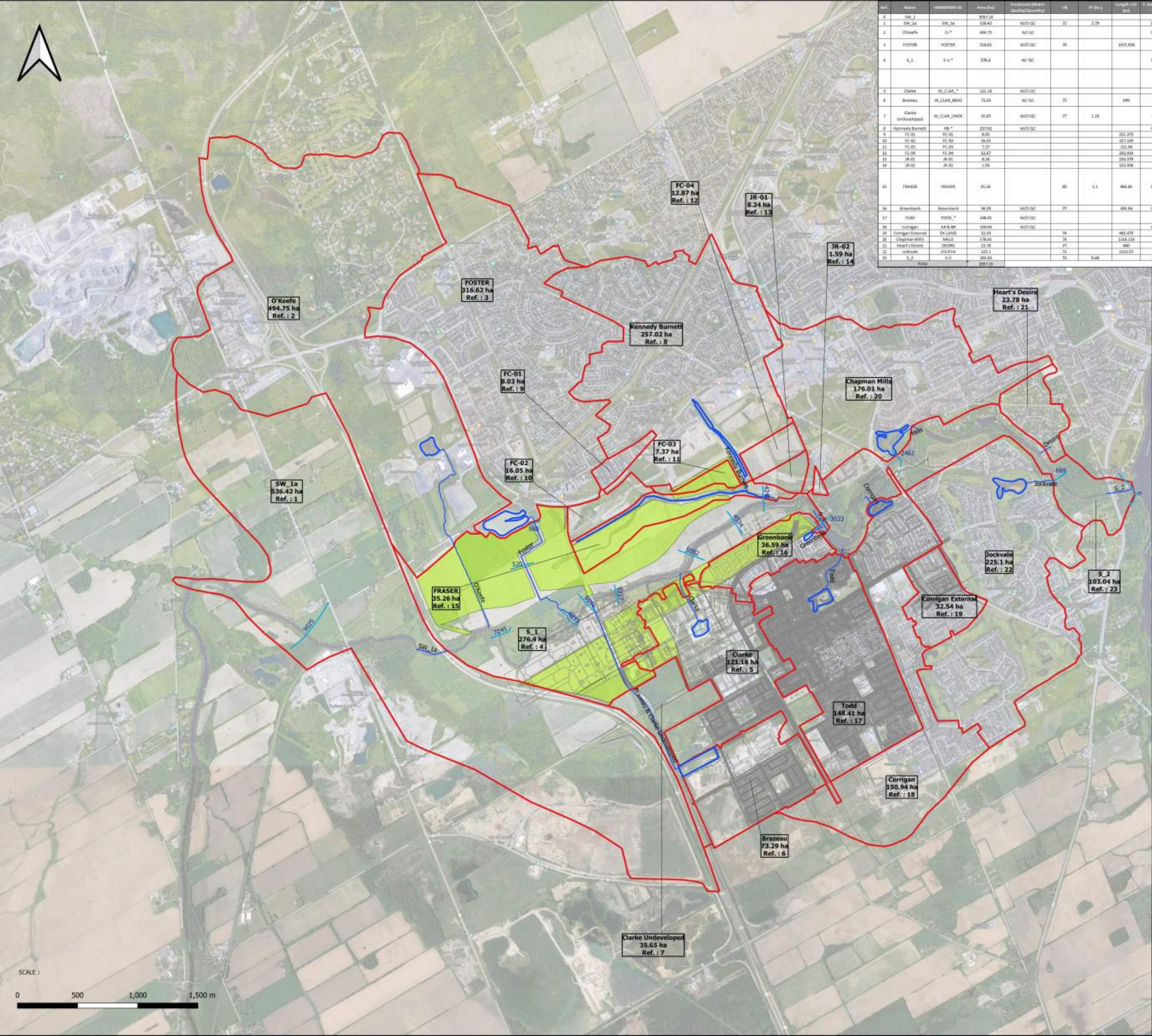
```
     ROUTE RESERVOIR ->    1.0 02:MILLS         175.99    20.390 No_date    28:06    56.87  n/a      .000
                 out <=    1.0 01:MILL_P        146.22     4.050 No_date    28:08    56.87  n/a      .000
            overflow <=    1.0 03:MIL-OV         29.77    16.228 No_date    28:08    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_M         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_M        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_M        55196.05   146.399 No_date    36:58    39.51  n/a      .000
       fname :SN_M.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_M        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-MI            .36      .820 No_date    28:05    62.88  n/a      .000
                     +     1.0 02:B3-MI            .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:NI          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:NI          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_NI       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_NI       55579.19   147.276 No_date    37:15    39.63  n/a      .000
       fname :SN_NI.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		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		1472.936	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 5082		Figure F3 - Clarke & Brazeau Sub-catchments	Table F3-1 - Clarke Sub-catchments	
6	Brazeau	W_CLAR_BRAZ	73.29	W/ QC	75		899	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 5082			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				282.918	0.64	0.84	STANDHYD	Jock River at Station 3633				
13	JR-01	JR-01	8.24				214.579	0.84	0.84	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	484.84	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	0.402	0.609	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 & BR	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		485.475	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	0.48		[0.4]		NASHYD	Rideau River				
Total			3097.15												



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

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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

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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)	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)
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		
4	S-1-D2	will be Developed	18.67	SN_OK (Total Flows at Okeefe Drain)		[0.65]	2	0.75	352.798	75		
5	S-1-D3	will be Developed	6.79	SN_OK (Total Flows at Okeefe Drain)		[0.65]	2	0.75	212.760	75		
6	S-1-D4	will be Developed	3.28	SN_CE (Total Flows before Station 5737		[0.65]	2	0.75	147.874	75		
7	S-1-D5	will be Developed	12.84	SN_CE (Total Flows before Station 5737		[0.65]	2	0.75	292.575	75		
8	S-1-D6	will be Developed	1.75	5002 (Total Flows before Station 5002		[0.65]	2	0.75	108.012	75		
9	S-1-D7	will be Developed	2.03	5002 (Total Flows before Station 5002		[0.65]	2	0.75	116.333	75		
10	S-1-D8	will be Developed	5.27	SN_FO (Total Flows at Foster Drain)		[0.65]	2	0.75	187.439			
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		
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		
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		
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		
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)			197.6									
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-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 -268.6 -259.43 -179.48 -67.9 -59.21 -33.19 -26.08 -24.04 -13.14 0 14.68 23.92 25.78 31.91 91.95 772.15 961.49 1044.69 1130.8	94 91.5 91.5 91.5 91.5 91.5 91 90.5 90 86.77 85 86.74 90 90.5 91 91.5 92 92.5 93 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 -37.5 -19.61 0 14.87 37.5 38.54 42.23 157.05	91.5 90 87.04 85.7 86.93 90 90.5 91 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 -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
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 -907.09 -904.65 -902.26 -44.51 -25.1 -20.98 -20.61 -20.12 -6.13 17.51 31.37 45.26 50.41 63.06 134.5 190.63 251.98 321.32 403.84	95 94.5 94 93.5 91.5 91.5 91 90.5 90 87.26 86.56 87.2 90 90.5 91 91.5 92 92.5 93.5 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 -27.41 -25.64 -23.74 -22 -20 -19 -15 -10 -5 0 5 10 15 16 23.74 24.68 25.57 26.5	91 90.5 90 89.5 89.26 88.51 88.32 88.1 88.11 88.17 88.27 88.19 88.06 88.48 88.7 89.5 90 90.5 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

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
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

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david schaeffer engineering ltd

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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 -268.6 -259.43 -179.48 -67.9 -59.21 -33.19 -26.08 -24.04 -13.14 0 14.68 23.92 25.78 31.91 91.95 772.15 961.49 1044.69 1130.8	94 91.5 91.5 91.5 91.5 91.5 91 90.5 90 86.77 85 86.74 90 90.5 91 91.5 92 92.5 93 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 -37.5 -19.61 0 14.87 37.5 38.54 42.23 157.05	91.5 90 87.04 85.7 86.93 90 90.5 91 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 -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
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 -907.09 -904.65 -902.26 -44.51 -25.1 -20.98 -20.61 -20.12 -6.13 17.51 31.37 45.26 50.41 63.06 134.5 190.63 251.98 321.32 403.84	95 94.5 94 93.5 91.5 91.5 91 90.5 90 87.26 86.56 87.2 90 90.5 91 91.5 92 92.5 93.5 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 -27.41 -25.64 -23.74 -22 -20 -19 -15 -10 -5 0 5 10 15 16 23.74 24.68 25.57 26.5	91 90.5 90 89.5 89.26 88.51 88.32 88.1 88.11 88.17 88.27 88.19 88.06 88.48 88.7 89.5 90 90.5 91

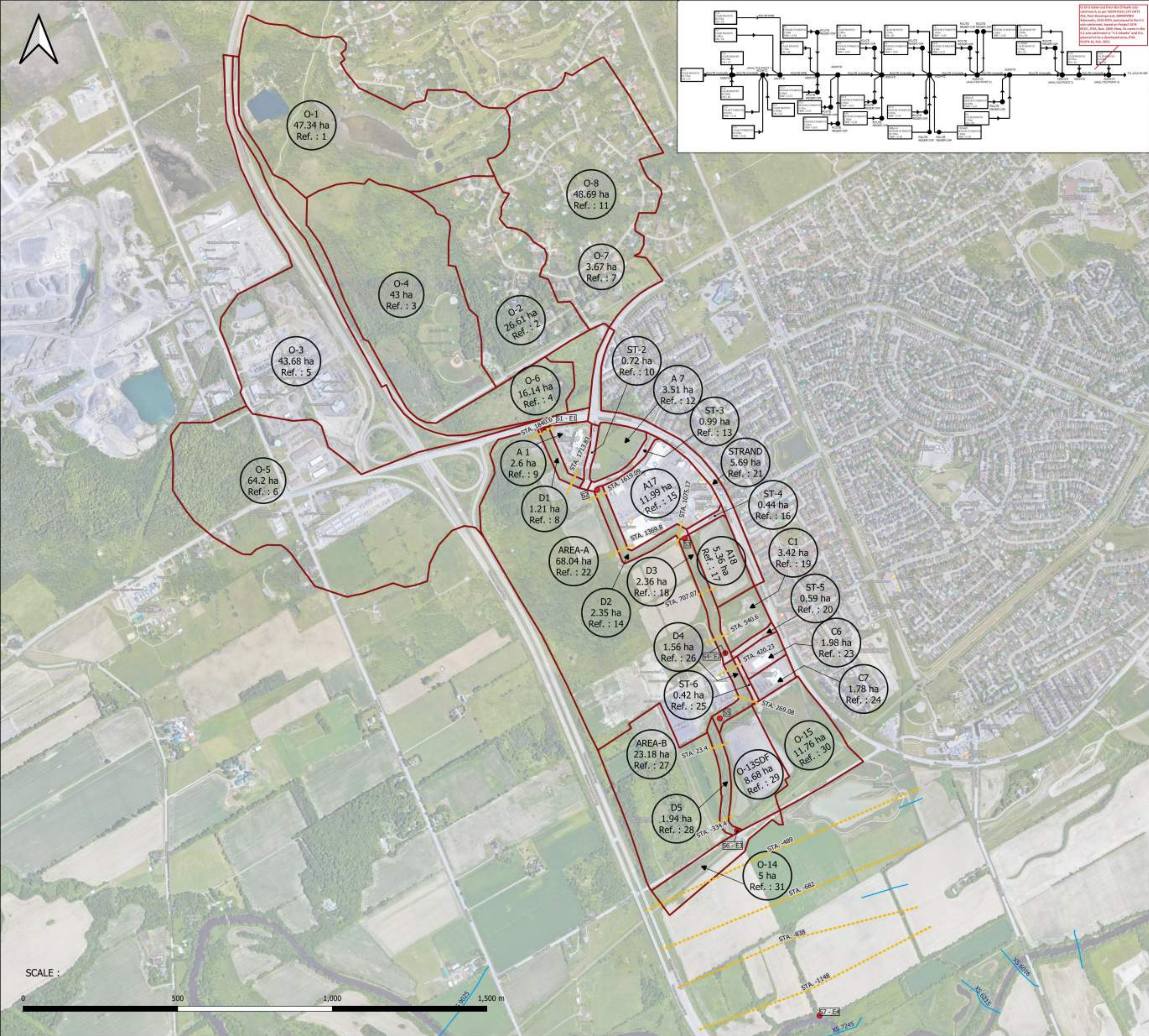
(1) N_CE is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6016 (Hydrograph from Node Foster routed to Node at Cedarview Road)

(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



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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"+"D2"+ "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	LGI Length (m) =SQRT (Area*10000/1.5)	Slope (%)		ROUTE RESERVOIR					ROUTE CHANNEL (Station [illegible])					
									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	1472.958211	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	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

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

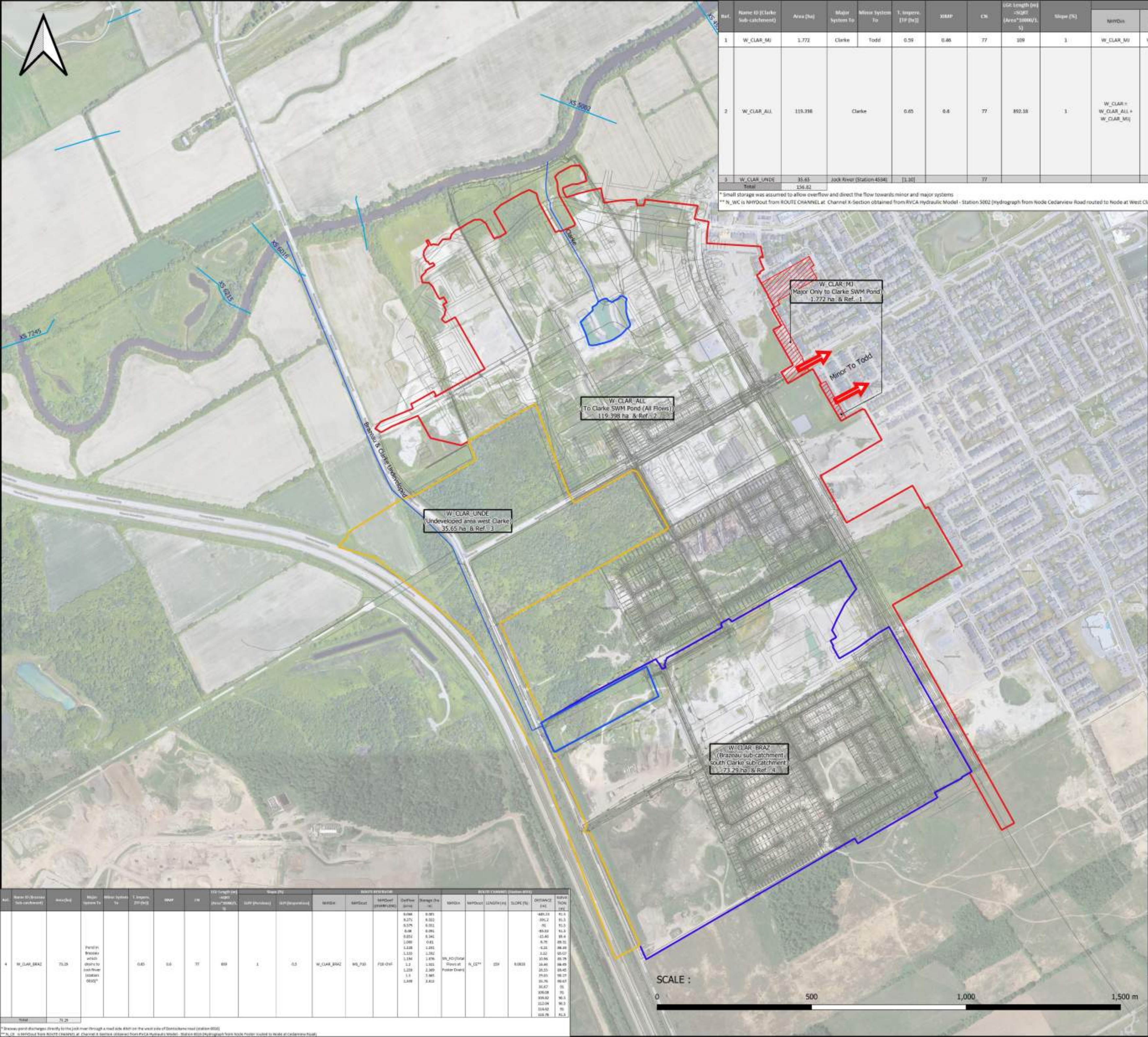
PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

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. [TIP (ha)]	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_MJ	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 -992.1 -279.54 -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. [TIP (ha)]	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 6010): NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
4	W_CLAR_BRAZ	73.29	Pond in Brazeau which drains to Jock River (station 6010)*		0.65	0.6	77	699	1	0.5	W_CLAR_BRAZ	MS_P10	P10-OVF	0.066 0.271 0.579 0.88 0.851 1.080 1.128 1.155 1.194 1.2 1.259 1.3 1.349	0.085 0.321 0.301 0.091 0.341 0.81 1.281 1.392 1.876 1.921 2.369 2.665 2.811	MS_FO (Total Flows at Foster Drain)	N_CE**	259	0.0818	-485.11 -395.2 -91 -83.32 -15.46 -6.75 -0.22 3.22 10.96 16.46 28.55 29.65 35.76 36.67 109.08 109.92 112.04 114.62 118.78	91.5 91.5 91.5 91.5 89.4 89.31 88.88 85.07 85.79 88.49 89.45 90.27 90.67 95 95 90.5 90.5 95 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 6010)

** N_CE is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6010 (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

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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																		

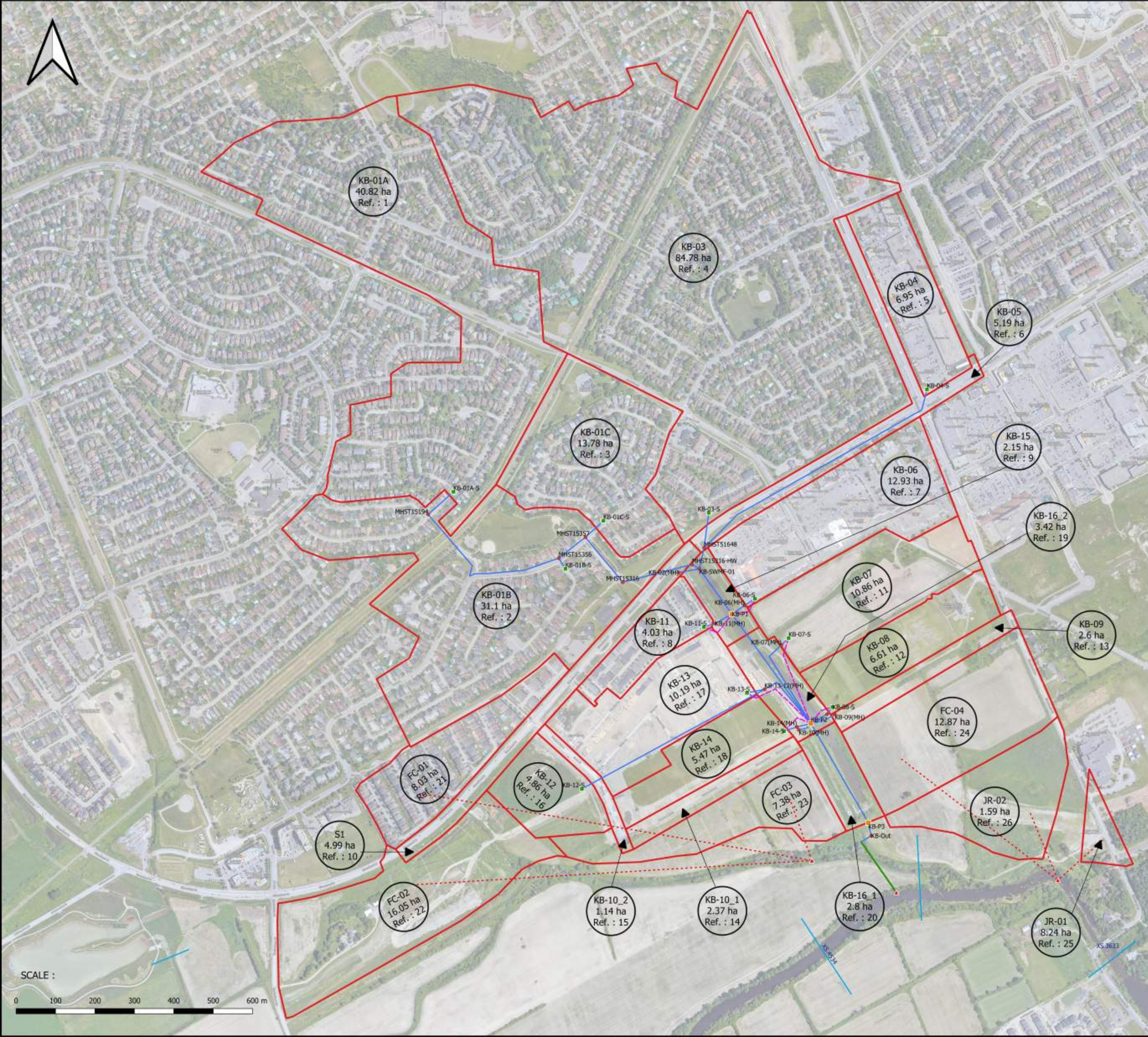
* Small storage was assumed to allow overflow and direct the flow towards minor and major systems

** 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
Total		73.29																		116.76	91.5

* 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

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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

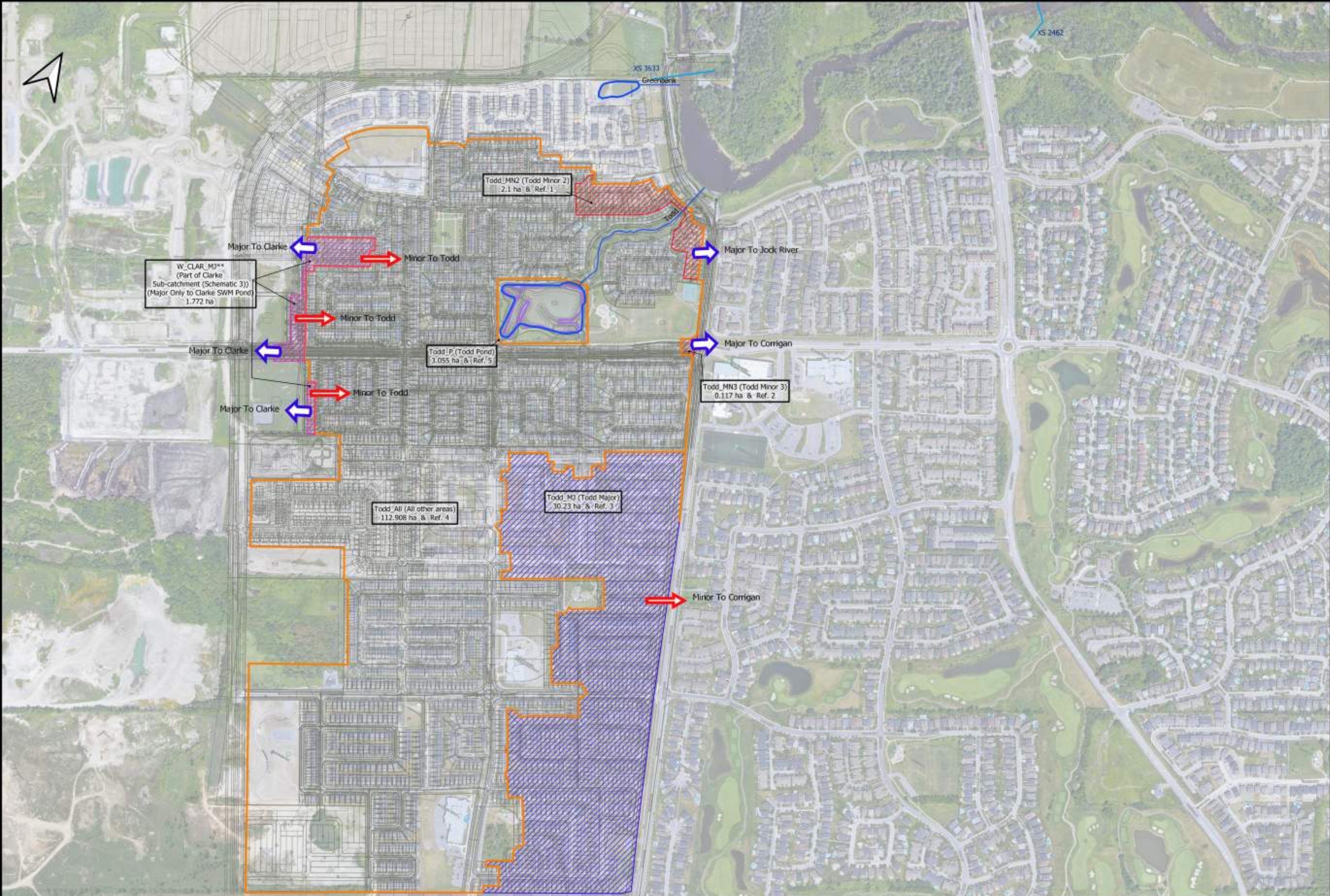
ROUTE CHANNEL (Station 3633): NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
SN_KB (Total Flows before Station 3633)	N_TO	650	0.0498	-29.24	91
				-27.41	90.5
				-25.64	90
				-23.74	89.5
				-22	89.26
				-20	88.51
				-19	88.32
				-15	88.1
				-10	88.11
				-5	88.17
				0	88.27
				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"]



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

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SCALE :

0 250 500 m

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure F5 -Todd Sub-catchments

Table F5 -Todd Sub-catchments

										ROUTE RESERVOIR					ROUTE CHANNEL (Station 2462)					
Ref.	Name ID (Todd)	Area (ha)	Major System To	Minor System To	T. Imperv.	XIMP	CN	LGE Length (m) =SQRT (Area*10000/1.5)	Slope (%)	NHYDin	NHYDout	NHYDoutF (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_Min	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 13.608 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 -11.98 -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

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	A8-MJ-JR	2	100 = 50 + 50	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-B6			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-MJ	EX-LAND-MN	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.

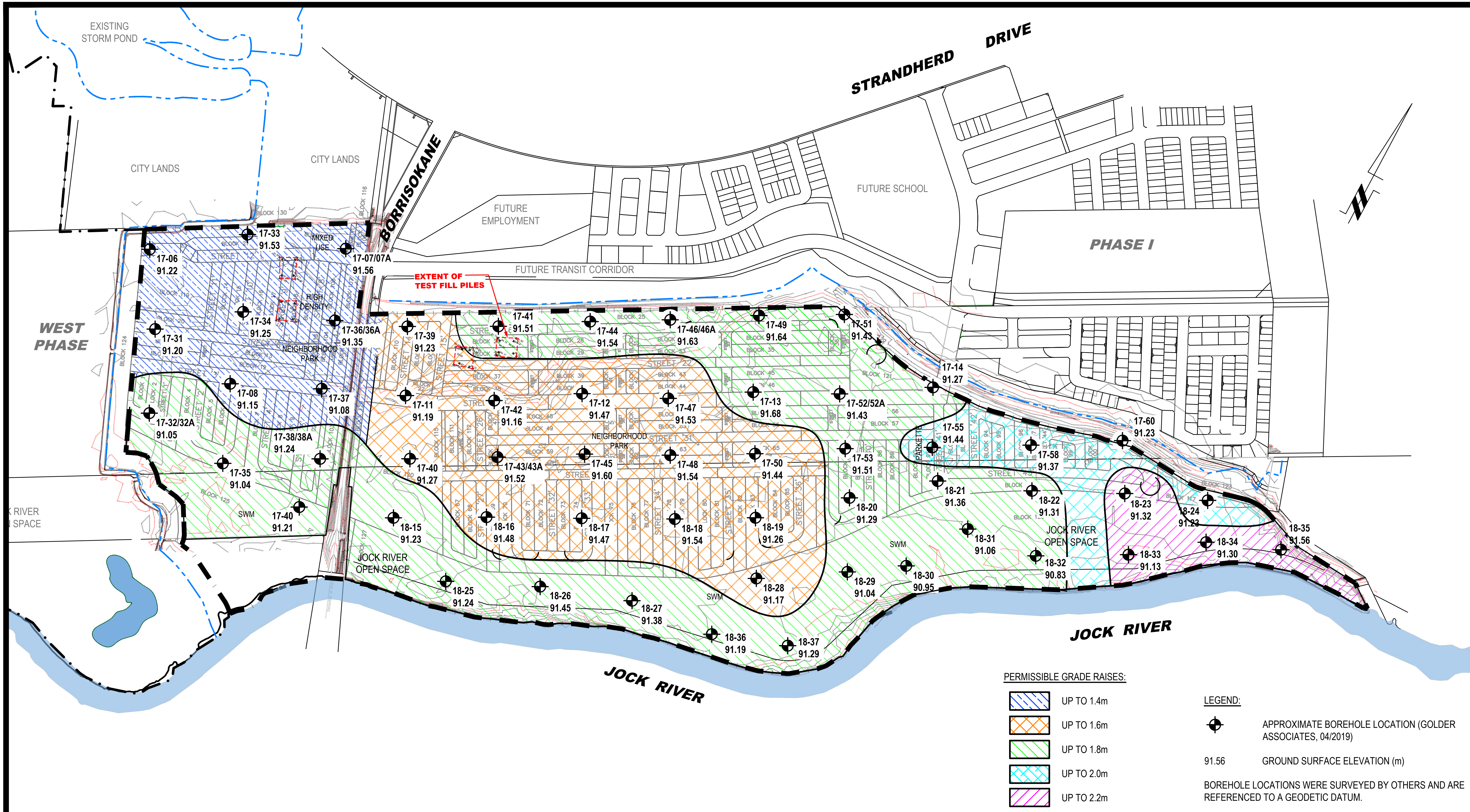
**B6 was not developed in 2008 so it was NASHYD in Corrigan Report, IBI Group, 2008. After checking B6 from geoOttawa (https://maps.ottawa.ca/geoottawa/)in Jan. 2021, B6 is developed. Because of the lack of information, B6 parameters were taken as B7 parameters because B7 is the nearest sub-catchment 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"])

APPENDIX E

GEOTECHNICAL



patersongroup
consulting engineers

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

NO.	REVISIONS	DATE	INITIAL
2	REVISED CONCEPTUAL PLAN, UPDATED GRADE RAISE RESTRICTIONS	04/02/2021	OC
1	REVISED CONCEPTUAL PLAN, ADDED TEST FILL PILE INFO AND UPDATED GRADE RAISE RESTRICTIONS	14/05/2020	DJG

CAIVAN COMMUNITIES

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

Title:
PERMISSIBLE GRADE RAISE PLAN

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

p:\autocad drawings\geotechnical\pg50xx\pg5036\pg5035-1 thlp east land.dwg

11x17

patersongroup — memorandum

consulting engineers

re: **Road Grade Exceedance Review**
Proposed Residential Development - Conservancy Lands
Borrisokane Road - Ottawa

to: Caivan Communities - **Mr. Hugo Lalonde** - hugo.lalonde@caivan.com
David Schaeffer Engineering Ltd. - **Mr. Kevin Murphy** - KMurphy@dsel.ca

date: March 8, 2021

file: PG5036-MEMO.10

Paterson Group (Paterson) prepared the following memo to provide a geotechnical review of permissible grade raise exceedances of the proposed roadway grading at various locations throughout the aforementioned development. This memorandum should be read in conjunction with Paterson Group Report PG5036-1 Revision 1 dated February 3, 2021.

The following drawings prepared by David Schaeffer Engineering Ltd. were reviewed from a geotechnical perspective:

- Barrhaven Conservancy - Maximum Grade Raise Exceedance - Project No. 16-891 - Drawing No. 6 and 7 - dated March 2021
- Latest road grading AutoCAD file - 891_Grad_PS_Lowered_Mar5-21

Based on the available drawings, it is understood that minor permissible grade raise exceedances occur within the proposed roadway grades at various locations throughout the subject development.

Geotechnical Review

Based on our detailed review, the grading exceedances are considered acceptable from a geotechnical perspective and lightweight fill will not be required within the City of Ottawa right-of-way(s).

We trust that this information satisfies your immediate requirements.

Paterson Group Inc.

Owen Canton, E.I.T.

LICENSED PROFESSIONAL ENGINEER
March 8, 2021
D. J. GILBERT
100116130
PROVINCE OF ONTARIO

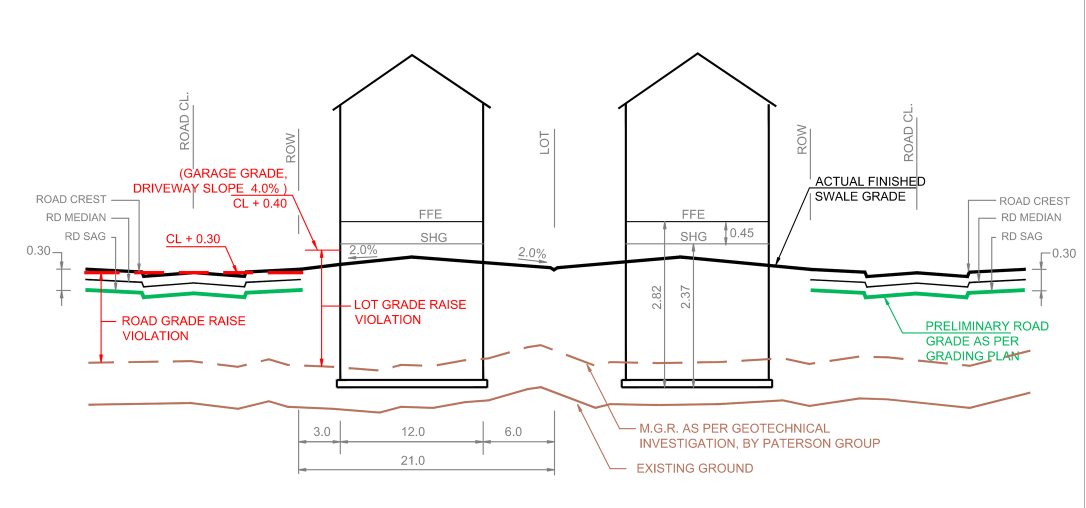
David J. Gilbert, P.Eng.

Paterson Group Inc.

Head Office and Laboratory
154 Colonnade Road South
Ottawa - Ontario - K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

Northern Office and Laboratory
63 Gibson Street
North Bay - Ontario - P1B 8Z4
Tel: (705) 472-5331 Fax: (705) 472-2334

St. Lawrence Office
993 Princess Street
Kingston - Ontario - K7L 1H3
Tel: (613) 542-7381



MAX GRADE RAISE

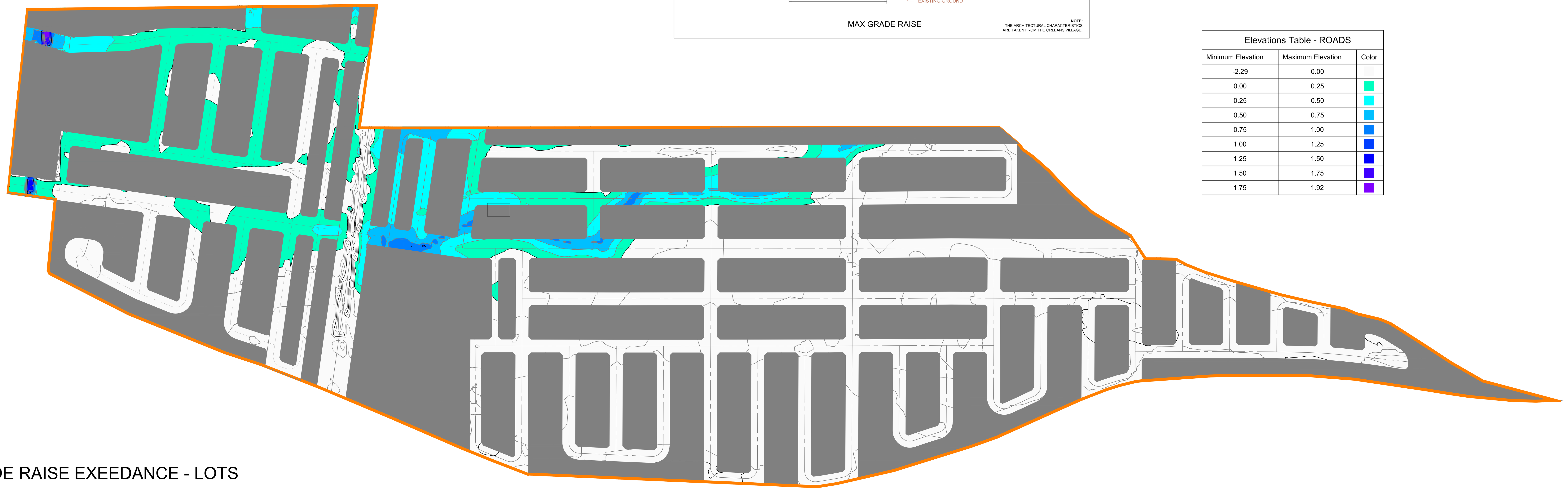
NOTE:
THE ARCHITECTURAL CHARACTERISTICS ARE TAKEN FROM THE ORLEANS VILLAGE.

NOTES:
1. LOW FLOW CHANNEL ELEVATION TO BE VERIFIED IN THE FIELD AT ALL ROAD AND SEWER CROSSING LOCATIONS.
2. DETAILED DESIGN ROAD GRADES REPRESENT LOW POINTS. ACTUAL DESIGN GRADES WILL RISE AND FALL BY APPROXIMATELY 0.3m ABOVE THE TROUGH/SAG GRADES PRESENTED ON THIS PLAN.
3. EARTHWORKS VOLUMES ARE BASED ON THE MEDIAN ROAD GRADES, WHICH ARE ESTIMATED TO BE 0.09m HIGHER THAN THE TROUGH/SAG GRADES PRESENTED ON THIS PLAN.

EARTHWORKS DEPTHS AND VOLUMES ARE APPROXIMATE BASED ON USING ASSUMED MEDIAN VALUES FOR THE MANY VARIABLES THAT AFFECT EARTHWORKS. WHILE THE MEDIAN DEPTH AND VOLUME ARE GENERALLY REFLECTIVE OF THE SITE CHARACTERISTICS, THE ACTUAL DEPTH AND VOLUME AT ANY PRECISE LOCATION WILL VARY (UP OR DOWN) BASED ON THE LOCATION OF HIGH POINTS AND LOW POINTS IN THE ROAD AND ON THE LOTS.

THE SITE GRADING PLAN HAS BEEN PREPARED IN GENERAL CONFORMANCE WITH CITY OF OTTAWA DESIGN CRITERIA AND HISTORIC PRACTICES. THE GRADING PLAN HAS NOT BEEN REVIEWED BY CITY OF OTTAWA AND IS SUBJECT TO CHANGE FOLLOWING CITY REVIEW. ANY CHANGE IN THE GRADING PLAN WILL HAVE A CORRESPONDING CHANGE IN EARTHWORKS.

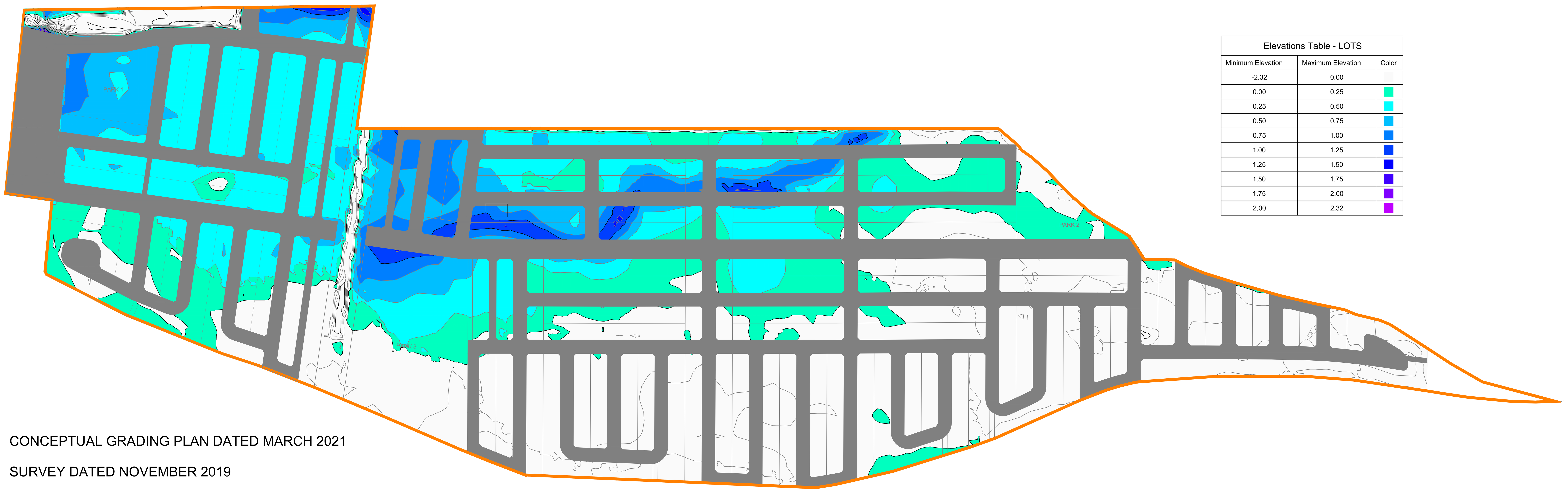
MAXIMUM GRADE RAISE EXEEDANCE - ROADS



Elevations Table - ROADS

Minimum Elevation	Maximum Elevation	Color
-2.29	0.00	
0.00	0.25	
0.25	0.50	
0.50	0.75	
0.75	1.00	
1.00	1.25	
1.25	1.50	
1.50	1.75	
1.75	1.92	

MAXIMUM GRADE RAISE EXEEDANCE - LOTS



Elevations Table - LOTS

Minimum Elevation	Maximum Elevation	Color
-2.32	0.00	
0.00	0.25	
0.25	0.50	
0.50	0.75	
0.75	1.00	
1.00	1.25	
1.25	1.50	
1.50	1.75	
1.75	2.00	
2.00	2.32	

CONCEPTUAL GRADING PLAN: CONCEPTUAL GRADING PLAN DATED MARCH 2021

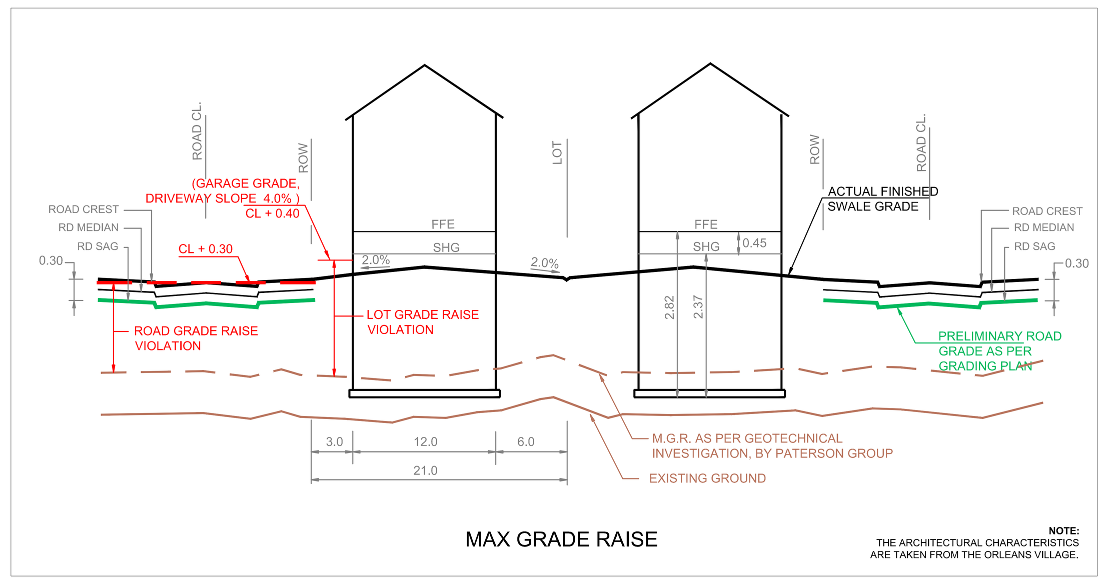
ORIGINAL GROUND: SURVEY DATED NOVEMBER 2019

MAXIMUM GRADE RAISE AS PER : GEOTECHNICAL INVESTIGATION, BY PATERSON GROUP
DATED SEPTEMBER 27, 2019 - REVISED MAY 15, 2020

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

BARRHAVEN CONSERVANCY
MAXIMUM GRADE RAISE EXCEEDANCE
CITY OF OTTAWA

PROJECT No. :	16-891
SCALE:	1:2000
DATE:	MARCH 2021
DRAWING No.	6



NOTES:
1. LOW FLOW CHANNEL ELEVATION TO BE VERIFIED IN THE FIELD AT ALL ROAD AND SEWER CROSSING LOCATIONS.
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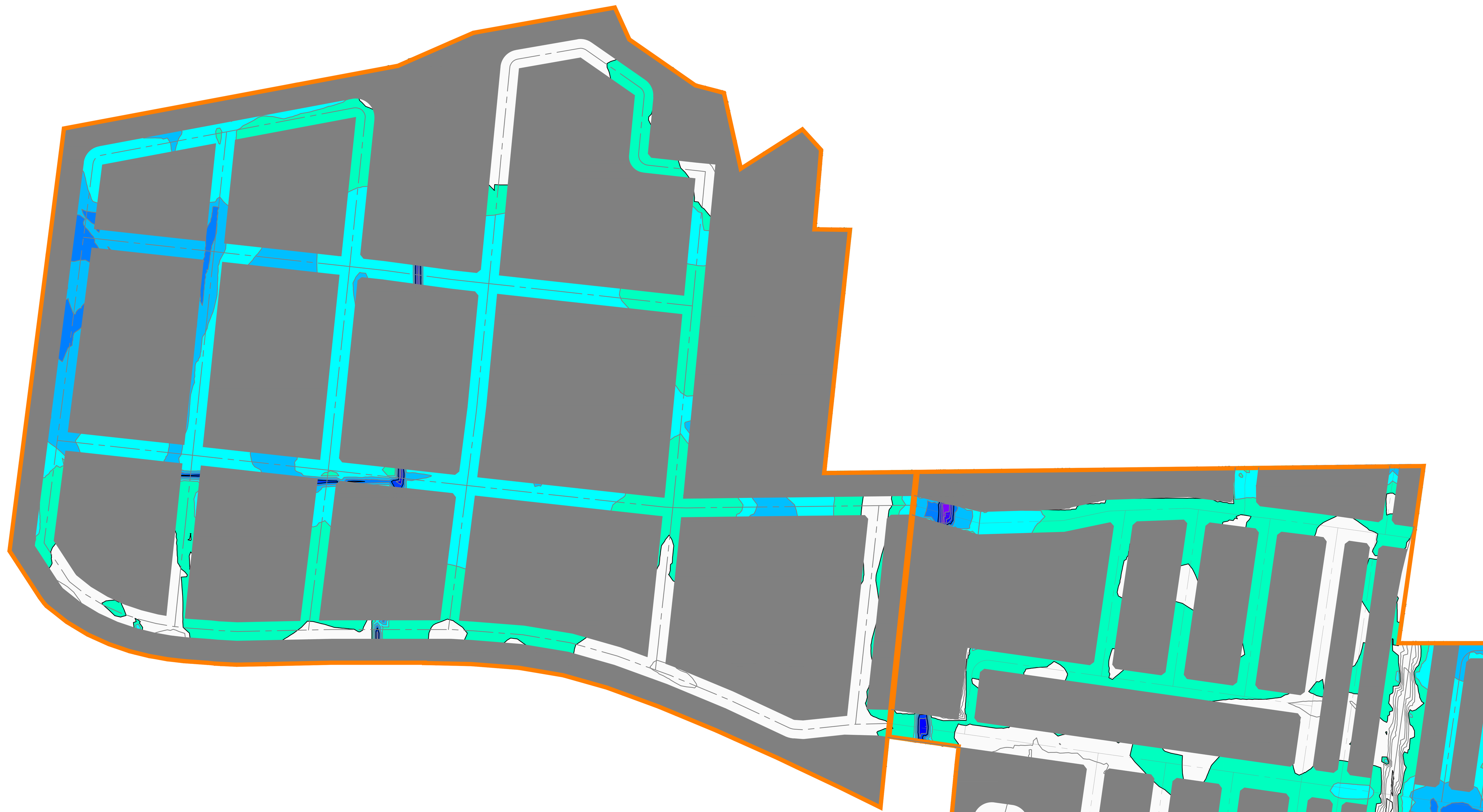
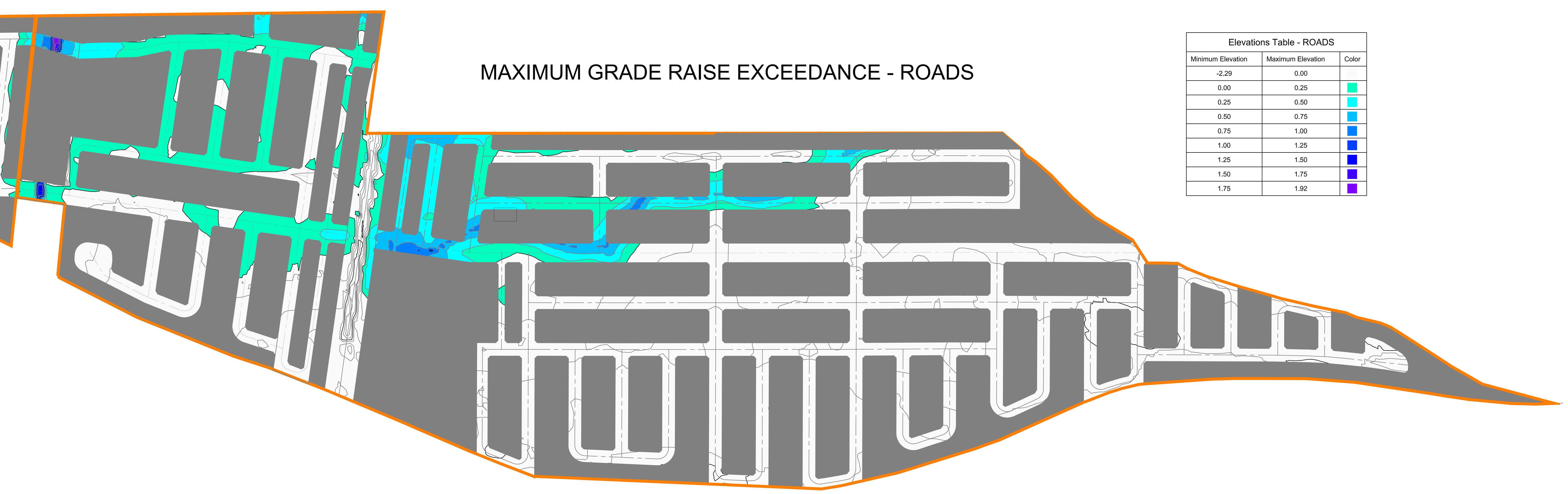
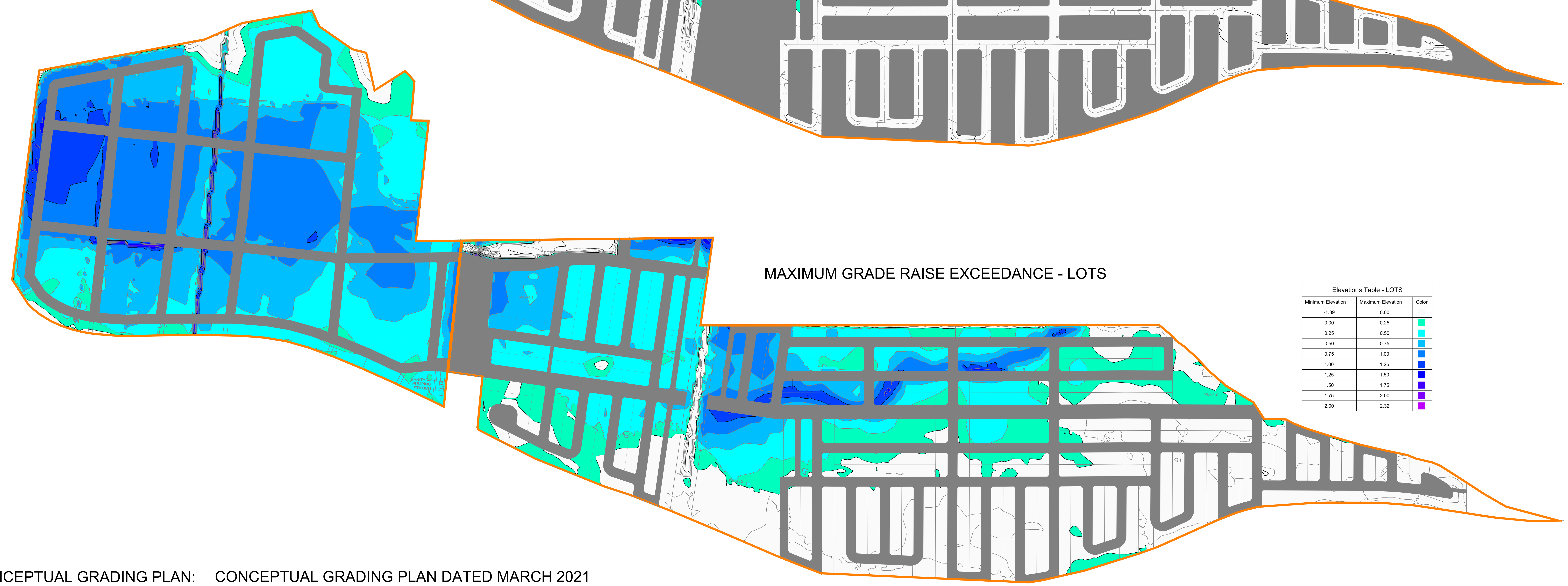
MAXIMUM GRADE RAISE EXCEEDANCE - ROADS

Elevations Table - ROADS

Minimum Elevation	Maximum Elevation	Color
-2.29	0.00	
0.00	0.25	
0.25	0.50	
0.50	0.75	
0.75	1.00	
1.00	1.25	
1.25	1.50	
1.50	1.75	
1.75	1.92	

MAXIMUM GRADE RAISE EXCEEDANCE - LOTS



Elevations Table - LOTS

Minimum Elevation	Maximum Elevation	Color
-1.89	0.00	
0.00	0.25	
0.25	0.50	
0.50	0.75	
0.75	1.00	
1.00	1.25	
1.25	1.50	
1.50	1.75	
1.75	2.00	
2.00	2.32	

CONCEPTUAL GRADING PLAN: CONCEPTUAL GRADING PLAN DATED MARCH 2021

ORIGINAL GROUND: SURVEY DATED NOVEMBER 2019

MAXIMUM GRADE RAISE AS PER : GEOTECHNICAL INVESTIGATION, BY PATERSON GROUP
DATED SEPTEMBER 27, 2019 - REVISED MAY 15, 2020

DSEL
david schaeffer engineering ltd
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
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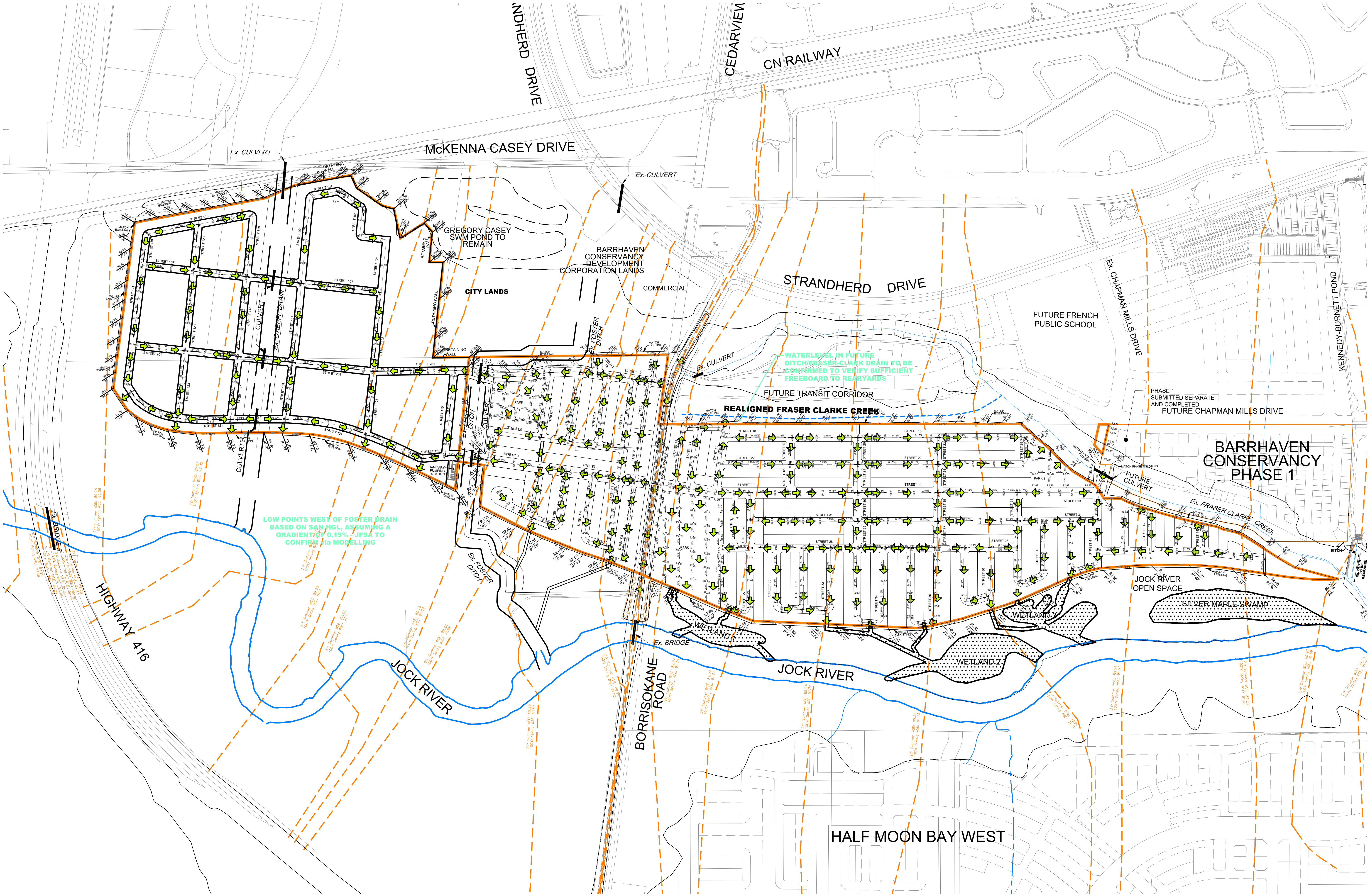
BARRHAVEN CONSERVANCY
MAXIMUM GRADE RAISE EXCEEDANCE
CITY OF OTTAWA

PROJECT No. :	16-891
SCALE:	1:2500
DATE:	MARCH 2021
DRAWING No.	7



CN RAILWAY
CEDARVIEW
STRANDHERD DRIVE
McKENNA CASEY DRIVE
Ex. CULVERT
Ex. CULVERT
GREGORY CASEY
SWM POND TO
REMAIN
BARRHAVEN
CONSERVANCY
DEVELOPMENT
CORPORATION LANDS
COMMERCIAL
CITY LANDS
STRANDHERD DRIVE
FUTURE FRENCH
PUBLIC SCHOOL
Ex. CHAPMAN MILLS DRIVE
KENNEDY-BURNETT POND
Ex. FOSTER DITCH
Ex. CULVERT
WATERLEVEL IN FUTURE
DITCH/FRASER-CLARK DRAIN TO BE
CONFIRMED TO VERIFY SUFFICIENT
FREEBOARD TO REARYARDS
FUTURE TRANSIT CORRIDOR
REALIGNED FRASER CLARKE CREEK
PHASE 1
SUBMITTED SEPARATE
AND COMPLETED
FUTURE CHAPMAN MILLS DRIVE
BARRHAVEN
CONSERVANCY
PHASE 1
FUTURE
CULVERT
Ex. FRASER CLARKE CREEK
CULVERT
CULVERT
CULVERT
Ex. O'KEEFE DRAIN
Ex. FOSTER DITCH
LOW POINTS WEST OF FOSTER DRAIN
BASED ON SAN HGL, ASSUMING A
GRADIENT OF 0.15% - JFSA TO
CONFIRM via MODELLING
Ex. BRIDGE
HIGHWAY 416
JOCK RIVER
BORRISOKANE
ROAD
Ex. BRIDGE
WETLAND 1
WETLAND 2
WETLAND 3
JOCK RIVER
OPEN SPACE
SILVER MAPLE SWAMP
JOCK RIVER
HALF MOON BAY WEST