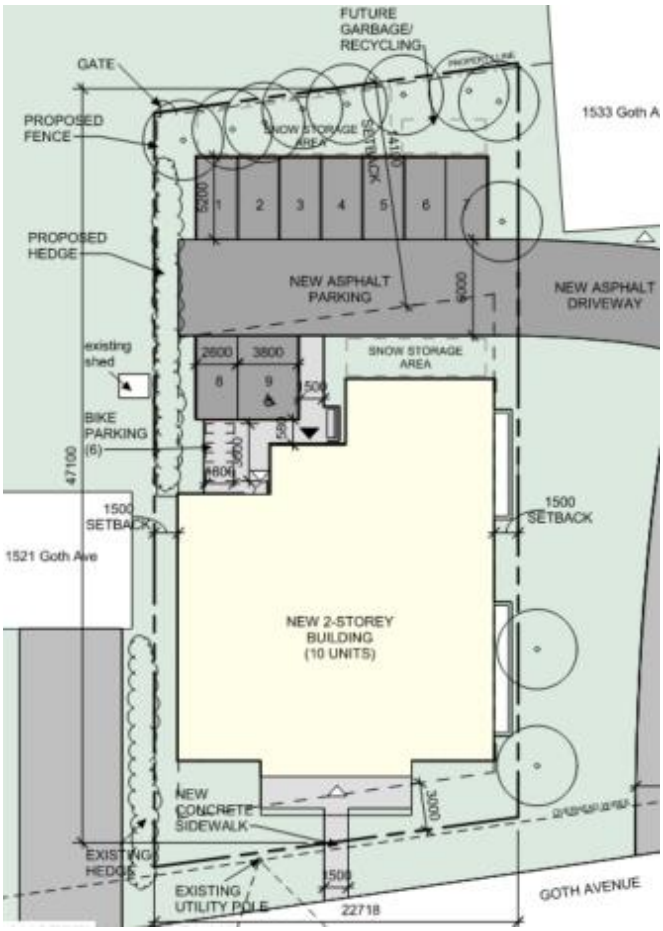
ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES
1525 GOTH AVENUE



Project No.: CCO-22-3682

Prepared for:

CAHDCO
415 Gilmour St., Suite 200,
Ottawa, ON K2P 2M8

Prepared by:

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
Carp, ON K0A 1L0

June 22nd, 2022

McINTOSH PERRY

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APPENDICES

1.0 PROJECT DESCRIPTION

1.1 Purpose

McIntosh Perry (MP) has been retained by CAHDCO to prepare this Assessment of Adequacy of Public Services Report in support of the Zoning By-law Amendment for the contemplated development at 1525 & 1533 Goth Avenue within the City of Ottawa. The following report discusses the contemplated development at 1525 Goth Avenue.

The main purpose of this report is to demonstrate that the proposed development has access to sufficient public services in accordance with the recommendations and guidelines provided by the City of Ottawa (City), the Rideau Valley Conservation Authority (RVCA), and the Ministry of the Environment, Conservation and Parks (MECP). This report will address access to water, sanitary and storm servicing for the development, ensuring that existing services will adequately service the proposed development.

1.2 Site Description

The property, herein referred to as the site, is located at 1525 Goth Avenue within the Gloucester-Southgate ward in the City of Ottawa. The site covers approximately 0.11 ha and is located along Goth Avenue, 400 m from Albion Road. The site is zoned Residential Second Density (R2).

1.3 Existing Conditions and Infrastructure

The site is currently developed and consists of a one and a ½ storey residential house fronting Goth Avenue. It is assumed the existing home is serviced by the Goth Avenue water, sanitary, and storm services.

Sewer and watermain mapping collected from the City of Ottawa indicate that the following services exist across the property frontages within the adjacent municipal right-of-ways:

- **Goth Avenue**
  - 203 mm diameter PVC watermain,
  - 375 mm diameter concrete sanitary sewer, tributary to the Albion Road Collector, and a
  - 675 mm diameter concrete storm sewer, outlets to Sawmill Creek and tributary to the Rideau River.

1.4 Proposed Development and Statistics

The contemplated development consists of two storey residential building with Not-for-Profit office space in the basement. The ***Site Plan*** anticipates that the building will contain ***10*** apartment units and ***70 m²*** of office space. Parking is contemplated via a parking lot at the rear of the site with access from 1533 Goth Avenue.

1.5 Approvals

The contemplated development will be subject to the City of Ottawa site plan control approval process, subsequent the zoning by-law amendment process. Site plan control requires the City to review, provided concurrence and approve the engineering design package. Permits to construct can be requested once the City has issued a site plan agreement.

Based on coordination with the Ministry of Environment, Conservation and Parks (***MECP***), an Environmental Compliance Application will not be required for the contemplated development. Correspondence with the ***MECP*** is included in ***Appendix B***.

2.0 BACKROUND STUDIES, STANDARDS AND REFERENCES

2.1 Background Reports / Reference Information

As-built drawings of existing services, provided by the City of Ottawa Information Centre, within the vicinity of the site were reviewed in order to identify infrastructure available to service the contemplated development.

The Sawmill Creek Subwatershed Study Update, completed by CH2M Hill on May 23, 2003, was provided by the City of Ottawa Information Centre.

2.2 Applicable Guidelines and Standards

City of Ottawa:

- Ottawa Sewer Design Guidelines, City of Ottawa, SDG002, October 2012. (***Ottawa Sewer Guidelines***)
  - Technical Bulletin ISTB-2014-01 City of Ottawa, February 2014***. (ISTB-2014-01)***
  - Technical Bulletin PIEDTB-2016-01 City of Ottawa, September 2016. ***(PIEDTB-2016-01)***
  - Technical Bulletin ISTB-2018-01 City of Ottawa, January 2018***. (ISTB-2018-01)***
  - Technical Bulletin ISTB-2018-03 City of Ottawa, March 2018. ***(ISTB-2018-03)***
  - Technical Bulletin ISTB-2019-01 City of Ottawa, January 2019. ***(ISTB-2019-01)***
  - Technical Bulletin ISTB-2019-02 City of Ottawa, February 2019. ***(ISTB-2019-02)***
- Ottawa Design Guidelines – Water Distribution City of Ottawa, July 2010. (***Ottawa Water Guidelines***)
  - Technical Bulletin ISD-2010-2 City of Ottawa, December 15, 2010. ***(ISD-2010-2)***
  - Technical Bulletin ISDTB-2014-02 City of Ottawa, May 2014. **(ISDTB-2014-02)**
  - Technical Bulletin ISTB-2018-02 City of Ottawa, March 2018. ***(ISTB-2018-02)***

Ministry of Environment, Conservation and Parks:

- Stormwater Planning and Design Manual, Ministry of the Environment, March 2003. ***(MECP Stormwater Design Manual)***
- Design Guidelines for Sewage Works, Ministry of the Environment, 2008. (***MECP Sewer Design Guidelines***)

Other:

- Water Supply for Public Fire Protection, Fire Underwriters Survey, 2020. (***FUS Guidelines***)

3.0 PRE-CONSULTATION SUMMARY

A pre-consultation email was provided by City staff on December 21st, 2021, and subsequent email dated April 19th, 2022, regarding the proposed site design. Specific design parameters to be incorporated within this design include the following:

- Pre-development and post-development flows shall be calculated using a time of concentration (Tc) of 10 minutes.
- Control 5 through 100-year post-development flows to the 5-year pre-development flows with a rational method coefficient of the existing pre-development conditions to a maximum of 0.5.
- Quality controls requirements to be confirmed by the Rideau Valley Conservation Authority.

4.0 WATERMAIN

4.1 Existing Watermain

The subject site is located within the 2W2C pressure zone, as shown by the Water Distribution figure located in ***Appendix 'C'.*** There is an existing 203 mm diameter PVC watermain, that runs the entire length of the property within Goth Avenue. There are three public hydrants along Goth Avenue available to service the development.

4.2 Proposed Watermain

It is anticipated that the development will be serviced from Goth Avenue via a 150 mm or 200 mm water service. It is estimated that the existing hydrants along Goth Avenue will provide adequate fire protection to the subject site.

The Fire Underwriters Survey 2020 (FUS) method was utilized to determine the required fire flow for the contemplated development. The 'C' factor (type of construction) for the FUS calculation was determined to be 1.5 (wood frame construction). The total floor area ('A' value) for the FUS calculation was determined to be ***838.0 m²***, yielding a maximum required fire flow of ***11,000 L/min*** for the site. A fire flow of ***5,400 L/min*** was calculated using the Ontario Building Code (OBC) requirements. The detailed calculations for the FUS can be found in ***Appendix 'C'***.

The water demands for the contemplated development have been calculated to adhere to the *Ottawa Design Guidelines – Water Distribution* manual and can be found in ***Appendix 'C'***. The results have been summarized below in **Table 1**.

Table 1: Water Demands

Water Demand Rate (Residential)	280 L/c/day
Water Demand Rate (Commercial)	28,000 L/gross ha/day
Site Area (ha)	0.11
Average Day Demand (L/s)	0.06
Maximum Daily Demand (L/s)	0.53
Peak Hourly Demand (L/s)	0.79
FUS Fire Flow Requirement Building (L/s)	183.33
OBC Fire Flow Requirement Building (L/s)	90

The City provided both the estimated minimum and maximum water pressures, as well as the estimated water pressure during fire flow demand for the demands indicated by the correspondence in **Appendix 'C'**. As shown in ***Table 2*** below, the minimum and maximum pressures fall within the required range identified in the City of Ottawa Water Supply guidelines.

Table 2: Boundary Conditions Results

Scenario	m H2O	Pressure (kPa) *
Average Day	39.5	387.1
Peak Hour	31.4	307.6
Maximum Daily + OBC Fire Flow Demand (90.53 L/s)	29.3	287.0

**Note: Pressures adjusted for an elevation of 92.44m*

To confirm the adequacy of fire flow to protect the proposed development, public fire hydrants within 150 m of the proposed building were accounted for per the City of Ottawa ISTB 2018-02 Appendix I, Table 1, as demonstrated below.

Table 3: Fire Protection Confirmation

Building	Fire Flow Demand (L/min.)	Fire Hydrant(s) within 75m (5,700 L/min)	Fire Hydrant(s) within 150m (3,800 L/min)	Combined Fire Flow (L/min.)
1525 Goth Avenue	11,000 (FUS)	1	2	13,300

Based on City guidelines the existing hydrants located in the vicinity can provide adequate fire protection to the site.

5.0 SANITARY DESIGN

5.1 Existing Sanitary Sewer

There is an existing 375 mm diameter sanitary sewer fronting the subject site within Goth Avenue. The subject site currently contributes wastewater to the Goth Avenue sewer system tributary to the Albion Road trunk sewer.

5.2 Proposed Sanitary Sewer

Table 4, below, summarizes the wastewater design criteria identified by the ***Ottawa Sewer Guidelines***.

Table 4: Sanitary Design Criteria

Design Parameter	Value
1 Bedroom Apartment	1.4 persons/unit
2 Bedroom Apartment	2.1 persons/unit
Residential Average Daily Demand	280 L/day/person
Residential Peaking Factor	3.71
Commercial / Amenity Space	2800 L/(1000m² /day)
Commercial Peaking Factor	1.0

Table 5, below, summarizes the estimated wastewater flow from the contemplated development. Refer to ***Appendix 'D'*** for detailed calculations.

Table 5: Summary of Estimated Sanitary Flow

Design Parameter	Total Site Flow (L/s)
Total Estimated Average Dry Weather Flow	0.06
Total Estimated Peak Dry Weather Flow	0.21
Total Estimated Peak Wet Weather Flow	0.24

The peak design flow was calculated for the contemplated development using the ***Ottawa Sewer Guidelines*** and was determined to be ***0.24 L/s***. Wastewater calculations are based on the site statistics provided by CSV Architects utilizing flow criteria identified in Appendix 4-A of the ***Ottawa Sewer Guidelines***. Refer to ***Appendix 'D'*** for detailed calculations.

It is anticipated that the building will be serviced via a 135 mm diameter service lateral in accordance with the ***Ottawa Sewer Guidelines***. The capacity of a 135 mm diameter service lateral is 11.5 L/s at an assumed 1.0% slope.

6.0 STORM DESIGN

6.1 Existing Storm Sewer

Stormwater runoff from the site is currently tributary to the Sawmill Creek within the Lower Rideau River sub-watershed. There is an existing 675 mm diameter storm sewer within Goth Avenue available to service the site. The existing sewer are tributary to the Sawmill Creek approximately 300 m downstream.

6.2 Proposed Storm Sewer

It is anticipated that runoff will be directed to the existing storm infrastructure at a restricted rate, as discussed in *Section 7.1*. It is anticipated that a combination of surface and subsurface storage will be required to meet the SWM criteria identified by the City of Ottawa. Further details on the storm sewer design to be provided for the Site Plan Control application.

7.0 STORMWATER MANAGEMENT

7.1 Design Criteria and Methodology

Stormwater management for the site will be maintained through positive drainage away from the contemplated buildings and towards the adjacent ROWs. The quantitative and qualitative properties of the storm runoff for both the pre & post development flows are further detailed below.

In summary, the following design criteria have been employed in developing the stormwater management design for the site as directed by the RVCA and City:

Quality Control

- Based on the Sawmill Creek Subwatershed Study Update, MECP Level 1 treatment will be required. Therefore, an enhanced level of treatment will need to be implemented during detailed design.

Quantity Control

- The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5.
- Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.
- Post development 100-year flow is to be restricted to the 5-year storm with a calculated time of concentration greater or equal to 10 minutes.

7.2 Runoff Calculations

Runoff calculations presented in this report are derived using the Rational Method, given as:

$$Q = 2.78CIA \text{ (L/s)}$$

Where C = Runoff coefficient

I = Rainfall intensity in mm/hr (City of Ottawa IDF curves)

A = Drainage area in hectares

It is recognized that the Rational Method tends to overestimate runoff rates. As a result, the conservative calculation of runoff ensures that any stormwater management facility sized using this method is anticipated to function as intended.

The following coefficients were used to develop an average C for each area:

Roofs/Concrete/Asphalt	0.90
Undeveloped and Grass	0.20

As per the ***Ottawa Sewer Guidelines***, the 5-year balanced 'C' value must be increased by 25% for a 100-year storm event to a maximum of 1.0.

Based on pre-development conditions, the time of concentration (Tc) used for the post-development design was estimated to be 10 minutes.

7.3 Site Drainage

Based on the criteria listed in Section 7.1, the development limit will be required to restrict flow to ***14.39 L/s*** in the 100-year event.

It has been assumed that the existing development contained no stormwater management controls for flow attenuation. The estimated pre-development peak flows for the 2, 5, and 100-year events are summarized below in ***Table 6***.

Table 6: Pre-Development Runoff Summary

Drainage Area	Area (ha)	Runoff Coefficient (2/5-Year)	Runoff Coefficient (100-Year)	Q (L/s)		
				2-Year	5-Year	100-Year
A1	0.107	0.40	0.46	9.14	12.40	24.65

To meet the stormwater objectives the contemplated development may contain a combination of flow attenuation along the surface and subsurface storage.

The following storage requirement estimate assumes that approximately 10% of the development area will be directed to the outlet without flow attenuation. The estimated post-development peak flows for the 5 and 100-year events and the required storage volumes are summarized below in ***Table 7***, below.

Table 7: Post Development Flow Rate and Storage Requirements

Drainage Area	Unrestricted Flow (L/S)		Restricted Flow (L/S)		Storage Required (m^3)	
	5-year	100-Year	5-Year	100-Year	5-Year	100-Year
B1 (Restricted)	19.26	37.07	5.33	10.27	9.20	17.63
B2 (Unrestricted)	2.14	4.12	2.14	4.12	-	-
Total	**21.40**	**41.19**	**7.47**	**14.39**	**9.20**	**17.63**

It is anticipated that approximately ***17.6 m^3*** of storage will be required on site to attenuate flow to the established release rate of ***14.39 L/s***. Flow and storage calculations can be found within ***Appendix 'G'***. Actual storage volumes will need to be confirmed at the detailed design stage based on grading constraints.

It is anticipated that quality controls will be provided by an oil/grit separator or enhanced grass swales.

8.0 SUMMARY

- McIntosh Perry (MP) has been retained by CAHDCO to prepare this Assessment of Adequacy of Public Services Report in support of the Zoning By-law Amendment for the contemplated development at 1525 & 1533 Goth Avenue within the City of Ottawa. The report discusses the contemplated development at 1525 Goth Avenue. The contemplated development consists of two-storey residential building with Not-for-Profit office space in the basement.
- The FUS method estimated fire flow indicated ***11,000 L/min*** is required for the contemplated development. The OBC method estimated a fire flow of ***5,400 L/min***;
- The development is anticipated to have a peak wet weather flow of ***0.24 L/s***;
- Based on City of Ottawa guidelines, the development will be required to attenuate post-development 100-year flows to an equivalent pre-development release rate of ***14.39 L/s***;
- It is contemplated that stormwater objectives may be met through storm water retention via roof top, surface, and/or subsurface storage. Approximately ***17.6 m^3*** of onsite storage will be required to attenuate flow to the established release rate above;
- Enhanced level quality controls are anticipated to be provided by an oil/grit separator or enhanced grass swales.

9.0 RECOMMENDATION

Based on the information presented in this report, we recommend that City of Ottawa approve this Assessment of Adequacy of Public Services in support of the proposed rezoning for 1525 Goth Avenue & 1533 Goth Avenue.

This report is respectfully being submitted for approval.

Regards,

McIntosh Perry Consulting Engineers Ltd.

Alison J. Gosling, P.Eng.
Project Engineer, Land Development
T: 613.714.4629
E: a.gosling@mcintoshperry.com

U:\Ottawa\01 Project - Proposals\2022 Jobs\CCO\CCO-22-3682 CCOC_SPC_1525 Goth Ave\03 - Servicing\Report\CCO-22-3682 - Adequacy of Services - 2022-06-22.docx

10.0 STATEMENT OF LIMITATIONS

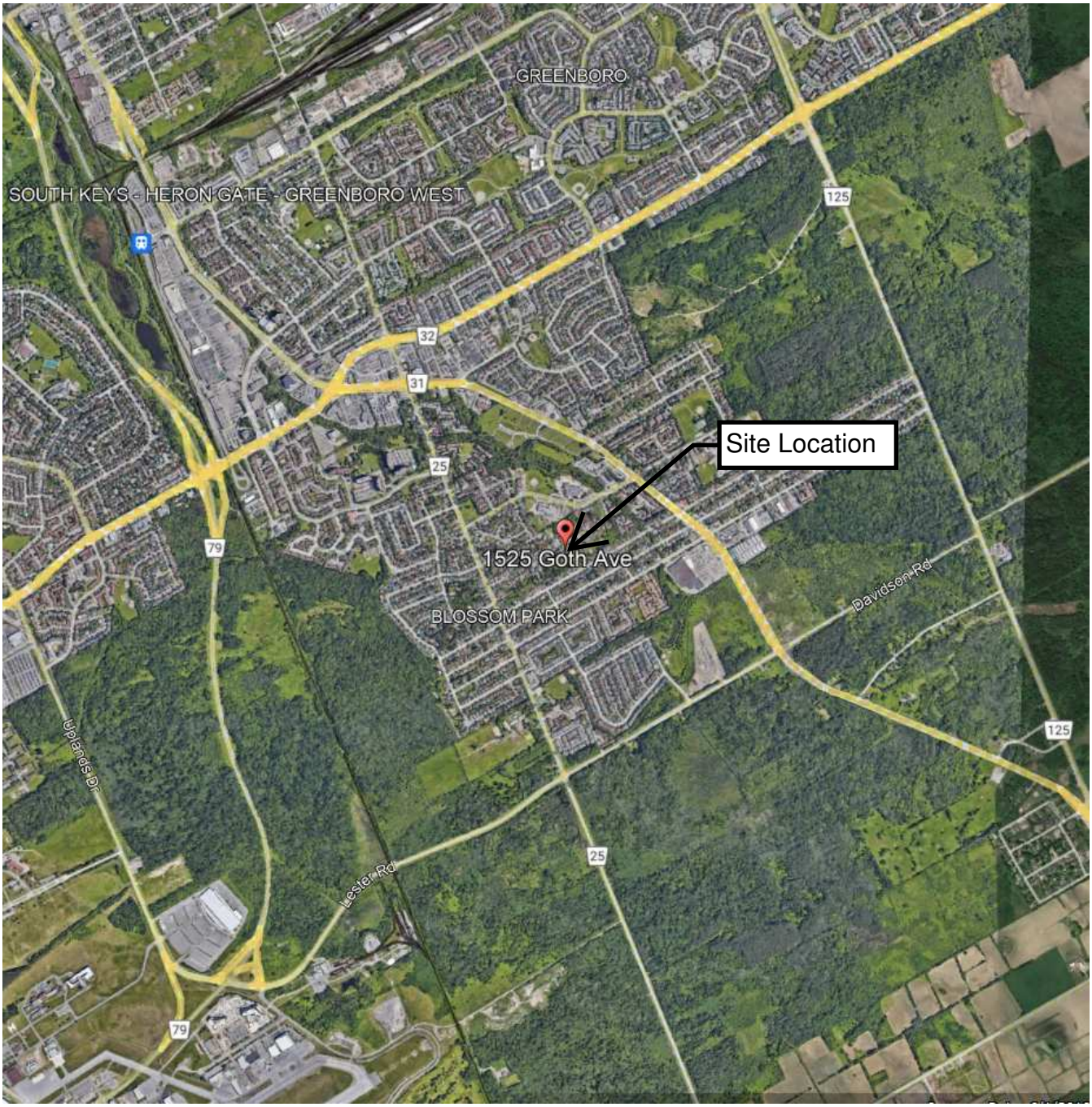
This report was produced for the exclusive use of the CAHDCO. The purpose of the report is to assess the existing stormwater management system and provide recommendations and designs for the post-construction scenario that are in compliance with the guidelines and standards from the Ministry of the Environment, Parks and Climate Change, City of Ottawa and local approval agencies. McIntosh Perry reviewed the site information and background documents listed in Section 2.0 of this report. While the previous data was reviewed by McIntosh Perry and site visits were performed, no field verification/measures of any information were conducted.

Any use of this review by a third party, or any reliance on decisions made based on it, without a reliance report is the responsibility of such third parties. McIntosh Perry accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this review.

The findings, conclusions and/or recommendations of this report are only valid as of the date of this report. No assurance is made regarding any changes in conditions subsequent to this date. If additional information is discovered or becomes available at a future date, McIntosh Perry should be requested to re-evaluate the conclusions presented in this report, and provide amendments, if required.

APPENDIX A
KEY PLAN

McINTOSH PERRY



CLIENT: CAHDCO		
PROJECT: 1525 GOTH AVENUE		
TITLE: SITE LOCATION		
McINTOSH PERRY 115 Walgreen Road, RR3, Carp, ON K0A 1L0 Tel: 613-836-2184 Fax: 613-836-3742 www.mcintoshperry.com	PROJECT: CCO-22-3682 DATE: MAY. 19, 2022	FIGURE: 1 SCALE: N.T.S

APPENDIX B
BACKGROUND DOCUMENTS

McINTOSH PERRY

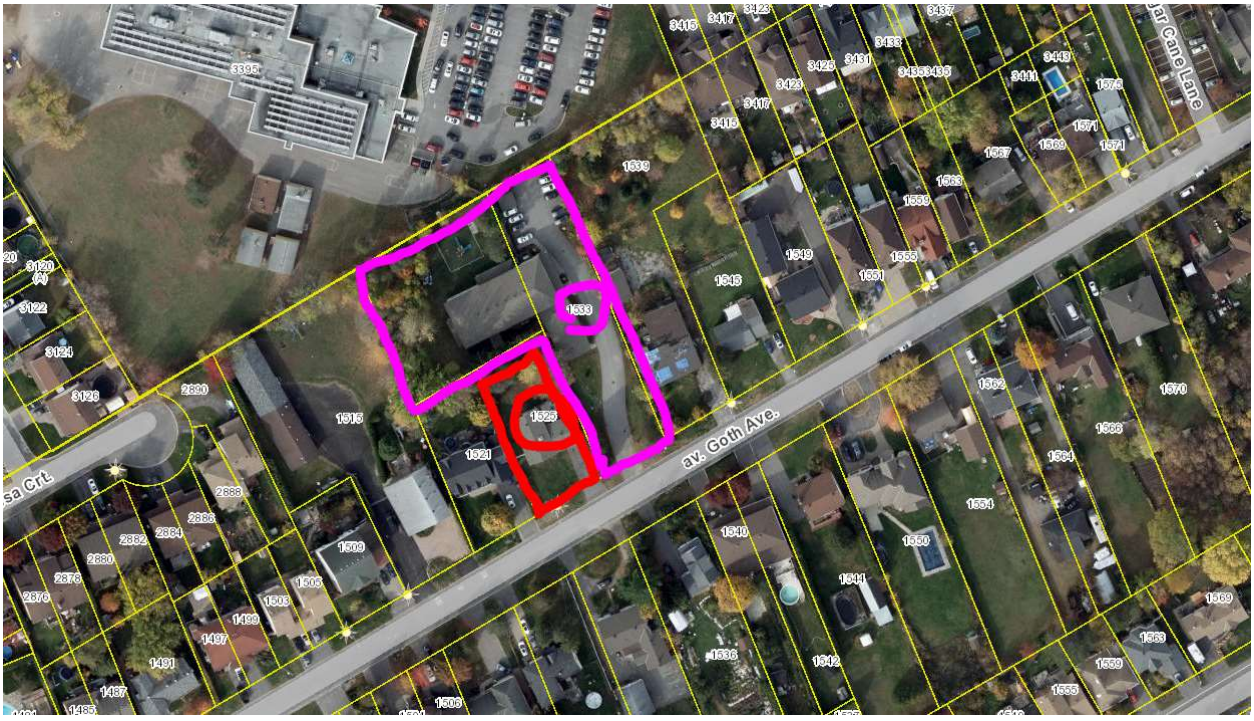
1525 Goth Street
Meeting Summary Notes
Dec 16, 2021, Online Teams Meeting

Attendees:

- Kerri Lewis, Interval House
- Graeme Hussey, CCOC
- Nadia DeSanti,WSP
- Jessie Smith, CSV
- Samantha Gatchene, WSP
- Tracey Scaramozzino, File Lead, City of Ottawa

Not invited to the 'planning-focused' meeting:

- Pat McMahon (Transportation Project Manager, City of Ottawa)
- Bruce Bramah (Project Manager, City of Ottawa)
- Urban Designer, City of Ottawa



Issue of Discussion:

- Interval House, Shelter for Women and their children fleeing abusive partners.
- General Operations of Interval House – a Group Home:
    - 1533 Goth St is an existing 10-bedroom, crisis-emergency group home for women and children. Each woman with her children have a bedroom, while kitchens, washrooms and living areas are shared amongst the household. After approximatly 4 months, the women and children move to other housing in the community. There are staff at the home 24/7 and the grounds are well monitored with cameras. The 'abuser' does not often come looking for his partner (@1/year for the home), so there is not a risk of danger to the greater community. If an abuser does find his former partner, she is transferred to another location within Ottawa or out of town. The group home is a good neighbour and has well-maintained grounds.
    - 1525 Goth St. (subject for the rezoning and site plan) has undergone some renovations lately, but will likely be demolished and a new building built, if/when rezoning and site plan applications are approved. This site would operate as the 'next step' after women leave 1533 Goth, as this new building would contain 10 independent dwelling units so that 10 women, with children, would have their own private bedroom, bathroom and kitchen. The women would still receive counselling and support and there would still be staff on-site 24/7. Women would live here for 1-2 years.
- Proposed to rezone to R4A or R4X to permit low-rise apts and to permit groups homes in closer proximity as well as for a greater number of units.
- Future Site plan Application for low-rise, 10-unit apt building. Each unit will be self-contained.

1. **Current Official Plan -** designated “General Urban Area”.
   a. Group Homes are permitted anywhere that residential dwellings are permitted
   b. The OP allows the ZLB to provide limits on # du and separation distances b/w other group homes

2. **New, Draft OP –**
   a. Group Homes are permitted anywhere
   b. The OP does not allow the zbl to limit #’s or separation distance b/w other group homes

3. **Zoning Information**
   a. R2N (permits detached dwellings, duplex, group home)
   b. Group Homes is allowed with max of 10 women (plus dependants)
   Part 5, Section 215 in zbl on group homes: (1d)Group homes must be separated by 300m from each property line of the lot on which the group home is located
   c. Current zoning needs to be amended to allow a group home with more than 10 – since both units will be considered part of the same group home. We can also be extra cautious and ask for group homes to be located closer than the 300m – in case someone were to view them as two separate homes – as they are in separate buildings.
   d. (OPA is NOT req’d since the OP doesn’t specifically require the distance and cap to units). The New OP would provide a full support to the rezoning.

4. **Infrastructure/Servicing**
   a. The PM was not in attendance at the meeting.

5. **Initial Planning Comments**
   a. There was mention that the garbage may be placed in the other units containers (1533 Goth). Please clarify how it will be handled.
   b. Do you have private garbage collection? How often is it collected?
   c. Try to design the buildings with similar colours, style, windows, front door access, roofline etc. as are existing in the area, to keep the building appearance as compatible as possible.
   d. Parking to be in the rear
   e. Proof of charitable/NFP status is required to the City’s Affordable Housing Branch in order for planning fees to be waived. Please contact Mary Dickinson or Lauren Reeves at the City.

6. **Parks/Forestry**
   a. Not in attendance at the meeting.

7. **Environment/Conservation Authority**
    a. Not in attendance at the meeting.

8. **Transportation**
    a. Not in attendance at the meeting.

9. **General Information**

    a. Ensure that all plans and studies are prepared as per City guidelines – as available online…
        https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans

Alison Gosling

To: Curtis Melanson
Subject: RE: 1525, 1533 Goth, sewer answer

From: Bramah, Bruce <bruce.bramah@ottawa.ca>
Sent: April 19, 2022 8:38 AM
To: Scaramozzino, Tracey <Tracey.Scaramozzino@ottawa.ca>
Subject: RE: 1525, 1533 Goth, sewer question

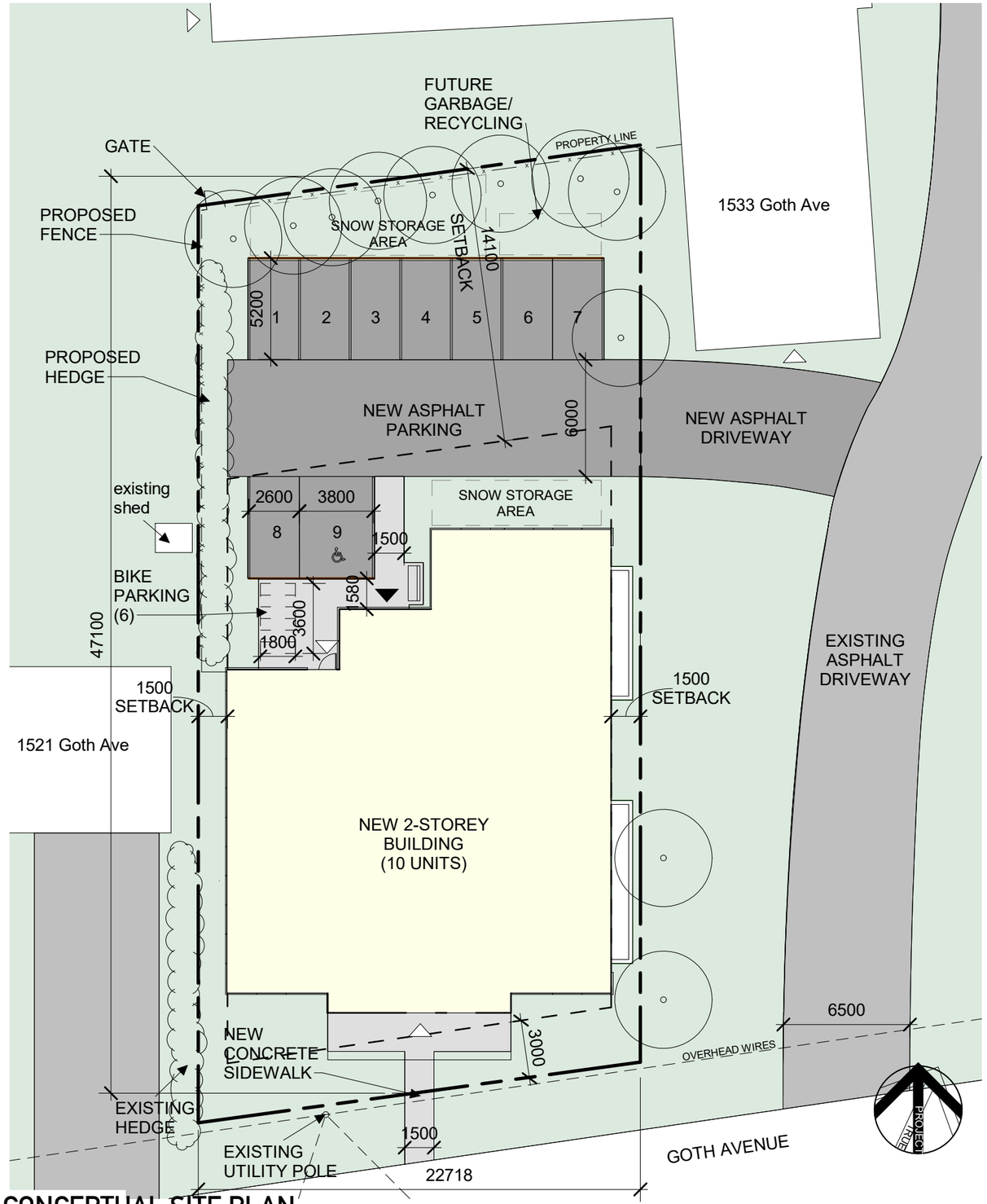
Good morning Tracey,

Based on my meeting notes, the project was not going to require severance which eliminated the ECA/Sewer location question.

Some information regarding the SWM is shown below:
Quality Control:
- Rideau Valley Conservation Authority to provide quality control requirements for property.

Quantity Control:
- Allowable Runoff coefficient (C): C = the lesser of the existing pre-development conditions to a maximum of 0.5.
- Time of concentration (Tc): Tc = pre-development; maximum Tc = 10 min
- Allowable flowrate: Control the 100-year/5-year storm events to the existing 5-year storm event. No ponding may occur in the 2 year event.

Please let me know if they have any further questions.
Thank you,
Bruce Bramah, EIT
Project Manager
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique
Development Review - South Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 29686, Bruce.Bramah@ottawa.ca



LOT DESCRIPTION:

Current Zone: R2
Proposed Zone: R4X

SITE DATA:

Lot Area: 1068 SQ.M.
Building Area: 419 SQ.M.
Gross Floor Area: 1257 SQ.M.
Building Height: 9.26 m

PARKING PROVISIONS:

Resident Parking Required: 12 spaces
Resdient Parking Provided: 7 spaces
Visitor Parking Required: 2 spaces
Visitor Parking Provided: 2 spaces

A0 **INTERVAL HOUSE 1525 GOTH AVE | CONCEPTUAL SITE PLAN**

1 : 250 | 03/17/22

CSV ARCHITECTS

sustainable design · conception écologique

Alison Gosling

Subject: RE: 1525 Goth Avenue - Storm pipe crossing property line

Hi Curtis,

After reviewing the information, I have determined than an ECA will not be required as the SWMF will be servicing 1 parcel of land.

Thank you and have a great day!
Emily

Emily Diamond
Environmental Officer
Ministry of the Environment, Conservation and Parks
Ottawa District Office
2430 Don Reid Drive
Ottawa, Ontario, K1H 1E1
Cell: 613-866-0938
Fax: 613-521-5437
e-mail: emily.diamond@ontario.ca

From: Curtis Melanson <c.melanson@mcintoshperry.com>
Sent: May 10, 2022 10:07 AM
To: Diamond, Emily (MECP) <Emily.Diamond@ontario.ca>
Cc: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: RE: 1525 Goth Avenue - Storm pipe crossing property line

Hi Emily,
Just checking in to see if you've had an opportunity to have a look.

Thanks,

Curtis Melanson, C.E.T.
Practice Area Lead, Land Development
T. 613.714.4621 | **C.** 613.857.0784
c.melanson@mcintoshperry.com | www.mcintoshperry.com

McINTOSH PERRY

Turning Possibilities Into Reality

From: Curtis Melanson <c.melanson@mcintoshperry.com>
Sent: May 3, 2022 9:46 AM
To: Emily Diamond (Emily.Diamond@Ontario.ca) <emily.diamond@ontario.ca>
Cc: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: 1525 Goth Avenue - Storm pipe crossing property line

Hi Emily,
As discussed yesterday, see attached plan indicating the scenario we're running into.

The Non Profit Group (Interval House) owns 1533 Goth Avenue, they purchased 1525 Goth. Since it's the same owner the properties have merged into 1 lot but have 2 separate PIN #'s.

The building is only 1.5m away from property lines and there isn't room to get the storm pipe from the back parking lot up to the front of the site and I can't let it leave the site unrestricted or we won't meet the quantity criteria for SWM. To get around this, we would run a pipe along the other property they own from the back parking lot, however, the manhole used to turn the pipe would be graded so that no storm flows from the adjacent property would enter the pipe (and we could also propose a water tight lid). Therefore, there wouldn't be multiple properties draining through the storm pipe and it would just be the flows from the back parking lot.

Can you confirm if this would require an ECA? I don't believe it does since it is designed to only service one lot or parcel of land but welcome your thoughts.

Thanks very much for your time and if you'd like to chat or have any questions please let me know and we can setup a quick call!

All the best,
Curtis

Curtis Melanson, C.E.T.
Practice Area Lead, Land Development
T. 613.714.4621 | **C.** 613.857.0784
McINTOSH PERRY
Turning Possibilities Into Reality

Alison Gosling

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: May 13, 2022 3:46 PM
To: Alison Gosling
Subject: RE: 22-3682 - 1525 Goth avenue

Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon Alison,

The appropriate water quality target would be 80% TSS removal. The stormwater management would also have to meet the stormwater management criteria in the Sawmill Creek Subwatershed Study.

Jamie Batchelor, MCIP, RPP
Planner, ext. 1191
Jamie.batchelor@rvca.ca

Rideau Valley Conservation Authority
3889 Rideau Valley Drive
PO Box 599, Manotick ON K4M 1A5
T 613-692-3571 | 1-800-267-3504 **F** 613-692-0831 | www.rvca.ca

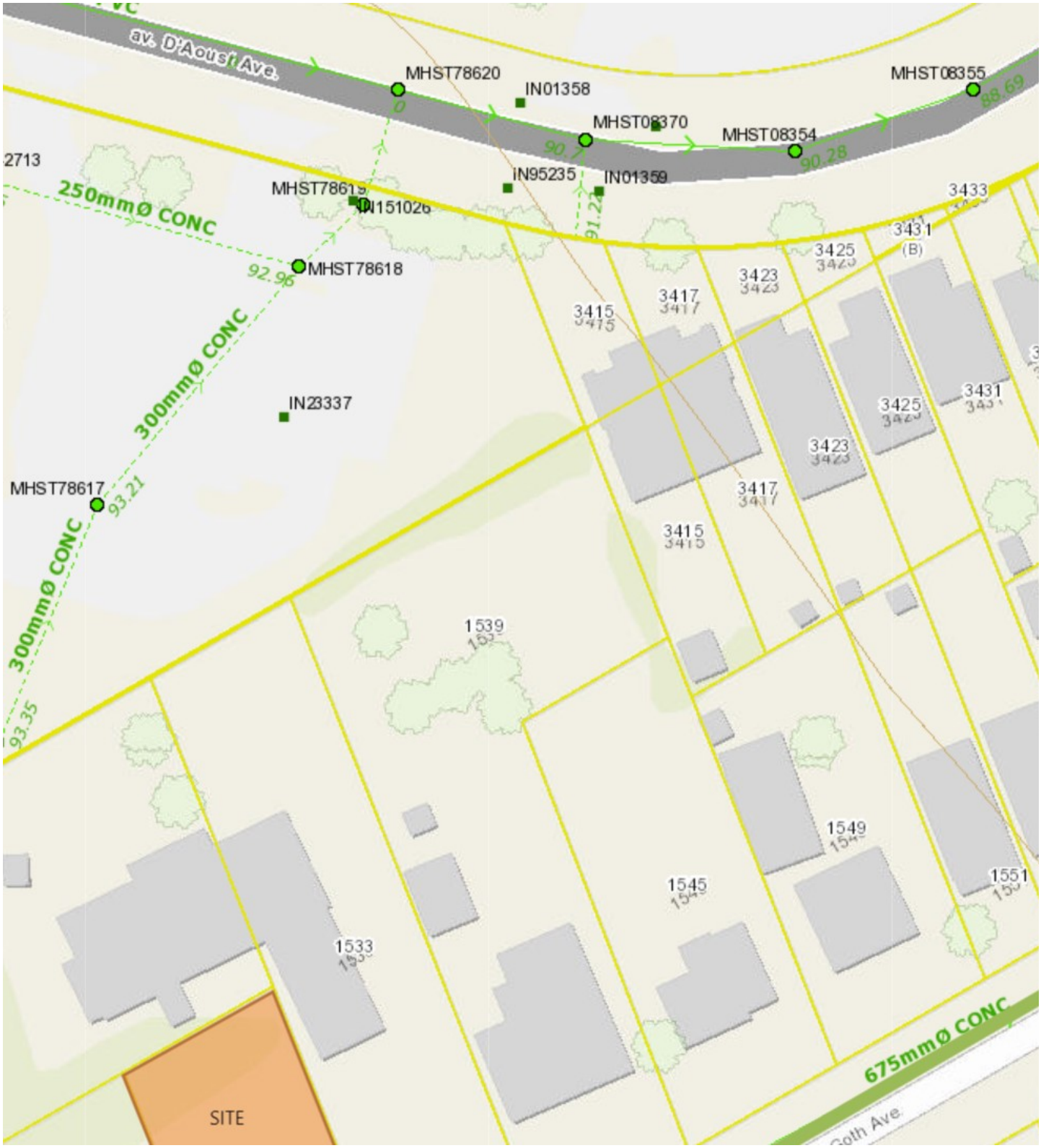
From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: Thursday, May 12, 2022 2:52 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Subject: 22-3682 - 1525 Goth avenue

Hi Jamie,

We wanted to touch base with you regarding a development at 1525 Goth Avenue.

The site currently contains a single family home with a 76m2 driveway. The development proposes a not for profit residential/office development with a 419 m2 building and 258 m2 parking lot. Best management practices, including a CB shield and deep structure sumps, are contemplated to improve water quality leaving the site. Water travels approximately 300m downstream to the Sawmill Creek.

Can the RVCA please review and confirm quality control requirements?



Please let me know if you have any questions.

Thank you,

Alison Gosling, P.Eng.

Project Engineer, Land Development
T. 613.714.4629

a.gosling@mcintoshperry.com | www.mcintoshperry.com

McINTOSH PERRY

Turning Possibilities Into Reality

APPENDIX C
WATERMAIN CALCULATIONS

McINTOSH PERRY

City of Ottawa - Water Distribution System
Facilities & Feedermains

& P.S. & RES.

NES &
ES P.S.

CARLINGTON HEIGHTS P.S. & RES.

BILLINGS BRIDGE P.S.

CONROY RD ELEVATED TANK

SUBJECT SITE

1W

ME

2W2C

3C

WTP

PS

PR

BPS

T

SCOTT
PARKDALE
GLADSTONE
ALBERT
CATHERINE
PRESTON
BOOTH
BRONSON
MAIN
ALTA VISTA
INDUSTRIAL
SMYTH
RUSSELL
RAMSAYVILLE
HAWTHORNE
CHURCHILL
KIRKWOOD
HOLLAND
CARLING
GOODROFFE
FAIRLAWN
BROOKFIELD
RIVERSIDE
WALKLEY
MCCARTHY
AIRPORT
RAMP
JOHNSTON
HUNT CLUB
CONROY
BASELINE
FISHER
PRINCE OF WALES
COLONNADE
MERIVALE
TURN LANE
LESTER
BANK
BAYSHORE
RICHMOND
PINECREST
IRIS
CENTREPOINTE
MEADOWLANDS

McINTOSH PERRY

CCO-22-3682 - 1525 Goth Avenue - Water Demands

Project:	1525 Goth Avenue
Project No.:	CCO-22-3682
Designed By:	AJG
Checked By:	AJG
Date:	May 16, 2022
Site Area:	0.11 gross ha

Residential	**NUMBER OF UNITS**		**UNIT RATE**	
Single Family		homes	3.4	persons/unit
Semi-detached		homes	2.7	persons/unit
Townhouse		homes	2.7	persons/unit
Bachelor Apartment		units	1.4	persons/unit
1 Bedroom Apartment	**6**	**units**	1.4	persons/unit
2 Bedroom Apartment	**4**	**units**	2.1	persons/unit
3 Bedroom Apartment		units	3.1	persons/unit
Average Apartment		units	1.8	persons/unit
Total Population	**17**	**persons**		
Office Space	**70**	**m2**		
Industrial - Light		m2		
Industrial - Heavy		m2		

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS
Residential	280	L/c/d
Industrial - Light	35,000	L/gross ha/d
Industrial - Heavy	55,000	L/gross ha/d
Shopping Centres	2,500	L/(1000m² /d
Hospital	900	L/(bed/day)
Schools	70	L/(Student/d)
Trailer Park with no Hook-Ups	340	L/(space/d)
Trailer Park with Hook-Ups	800	L/(space/d)
Campgrounds	225	L/(campsite/d)
Mobile Home Parks	1,000	L/(Space/d)
Motels	150	L/(bed-space/d)
Hotels	225	L/(bed-space/d)
Tourist Commercial	28,000	L/gross ha/d
Other Commercial	28,000	L/gross ha/d

AVERAGE DAILY DEMAND	**Residential**	**0.06**	**L/s**
	Commerical/Industrial /Institutional	**0.002**	**L/s**

115 Walgreen Road, R.R.3. Carp, ON K0A 1L0 | T. 613-836-2184 | F. 613-836-3742
info@mcintoshperry.com | www.mcintoshperry.com

MAXIMUM DAILY DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	9.5	x avg. day	L/c/d
Industrial	1.5	x avg. day	L/gross ha/d
Commercial	1.5	x avg. day	L/gross ha/d
Institutional	1.5	x avg. day	L/gross ha/d
MAXIMUM DAILY DEMAND	Residential	0.52	L/s
	Commerical/Industrial /Institutional	0.003	L/s

MAXIMUM HOUR DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	14.3	x avg. day	L/c/d
Industrial	1.8	x max. day	L/gross ha/d
Commercial	1.8	x max. day	L/gross ha/d
Institutional	1.8	x max. day	L/gross ha/d
MAXIMUM HOUR DEMAND	Residential	0.79	L/s
	Commerical/Industrial /Institutional	0.006	L/s

WATER DEMAND DESIGN FLOWS PER UNIT COUNT
CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

AVERAGE DAILY DEMAND	0.06	L/s
MAXIMUM DAILY DEMAND	0.53	L/s
MAXIMUM HOUR DEMAND	0.79	L/s

McINTOSH PERRY

CCO-22-3682 - 1525 Goth Avenue - OBC Fire Calculations

Project:	1525 Goth Avenue
Project No.:	CCO-22-3682
Designed By:	AJG
Checked By:	AJG
Date:	May 16, 2022

Ontario 2006 Building Code Compendium (Div. B - Part 3)

Water Supply for Fire-Fighting **- Residential & Office Building**

Building is classified as Group : **C** (from table 3.2.2.55)

Building is of combustible construction. Floor assemblies are fire separations but with no fire-resistance ratings. Roof assemblies, mezzanies, loadbearing walls, columns and arches do not have a fire-resistance rating.

From Div. B A-3.2.5.7. of the Ontario Building Code - 3. Building On-Site Water Supply:

(a) Q = K x V x Stot

where:

Q = minimum supply of water in litres

K = water supply coefficient from Table 1

V = total building volume in cubic metres

Stot = total of spatial coefficient values from the property line exposures on all sides as obtained from the formula:

Stot = 1.0 + [Sside1+Sside2+Sside3+…etc.]

K	**23**	(from Table 1 pg A-31) (Worst case occupancy {E / F2} 'K' value used)
V	**3,880**	(Total building volume in m³.)
Stot	**2.0**	(From figure 1 pg A-32)
Q =	**178,477.24 L**	

→

			From Figure 1 (A-32)
Snorth	18.2	m	0.0
Seast	1.5	m	0.5
Ssouth	3	m	0.5
Swest	1.5	m	0.5

*approximate distances

From Table 2: Required Minimum Water Supply Flow Rate (L/s)

5400 L/min **if Q > 162,000 L and < 190,000 L**
1427 gpm

McINTOSH PERRY

CCO-22-3682 - 1525 Goth Avenue - Fire Underwriters Survey

Project:	1525 Goth Avenue
Project No.:	CCO-22-3682
Designed By:	AJG
Checked By:	AJG
Date:	May 16, 2022

From the Fire Underwriters Survey (2020)

From Part II – Guide for Determination of Required Fire Flow Copyright I.S.O.:
City of Ottawa Technical Bulletin ISTB-2018-02 Applied Where Applicable

A. BASE REQUIREMENT (Rounded to the nearest 1000 L/min)

F = 220 x C x √A Where:

F = Required fire flow in liters per minute
C = Coefficient related to the type of construction.
A = The total floor area in square meters (including all storey's, but excluding basements at least 50 percent below grade) in the building being considered.

Construction Type Wood Frame

C	1.5	**A**	**838.0 m^2**
	Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area)		**838.0 m^2**

Calculated Fire Flow	**9,552.9 L/min**
	10,000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From Page 24 of the Fire Underwriters Survey:

Limited Combustible	-15%

Fire Flow	**8,500.0 L/min**

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Non-Sprinklered	0%

Reduction	**0.0 L/min**

D. INCREASE FOR EXPOSURE (No Rounding)

	Separation Distance (m)	Cons.of Exposed Wall	Length Exposed Adjacent Wall (m)	Height (Stories)	Length-Height Factor	
Exposure 1	20.1 to 30	Wood frame	36	2	72.0	6%
Exposure 2	20.1 to 30	Wood frame	22	1	22.0	2%
Exposure 3	Over 30 m	Wood frame	14	2	28.0	0%
Exposure 4	0 to 3	Wood frame	2	2	4.0	20%
					% Increase*	**28%**

Increase*	**2,380.0 L/min**

E. Total Fire Flow (Rounded to the Nearest 1000 L/min)

Fire Flow	**10,880.0 L/min**
Fire Flow Required**	**11,000.0 L/min**

*In accordance with Part II, Section 4, the Increase for separation distance is not to exceed 75%
**In accordance with Section 4 the Fire flow is not to exceed 45,000 L/min or be less than 2,000 L/min

McINTOSH PERRY

CCO-22-3682 - 1525 Goth Avenue - Boundary Condition Unit Conversion

Project:	1525 Goth Avenue
Project No.:	CCO-22-3682
Designed By:	AJG
Checked By:	AJG
Date:	May 16, 2022

Boundary Conditions Unit Conversion

GOTH AVENUE

Scenario	Height (m)	Elevation (m)	m H_2O	PSI	kPa
Avg. DD	131.9	92.44	39.5	56.1	387.1
Fire Flow (90 L/s or 5,400 L/min)	121.7	92.44	29.3	41.6	287.0
Peak Hour	123.8	92.44	31.4	44.6	307.6

Alison Gosling

From: Bramah, Bruce <bruce.bramah@ottawa.ca>
Sent: May 11, 2022 10:33 AM
To: Alison Gosling
Subject: RE: 22-3682 - 1525 Goth Ave - Boundary Condition Request
Attachments: 1525 Goth Avenue May 2022.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Alison,

The following are boundary conditions, HGL, for hydraulic analysis at 1525 Goth Avenue (zone 2W2C) assumed to connected to the 203 mm on Goth Avenue (see attached PDF for location).

Minimum HGL: 123.8 m

Maximum HGL: 131.9 m

Max Day + Fire Flow (90 L/s): 121.7 m

These are for current conditions and are based on computer model simulation.

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.

If you have any questions, please feel free to contact me.
Thank you,

Bruce Bramah, EIT
Project Manager

Planning, Real Estate and Economic Development

Development Review South

110 Laurier Avenue
Ottawa, ON K1P 1J1
Bruce.Bramah@ottawa.ca
Tel: (613) 580-2424 ext. 29686

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: May 04, 2022 11:55 AM
To: Bramah, Bruce <bruce.bramah@ottawa.ca>
Subject: 22-3682 - 1525 Goth Ave - Boundary Condition Request

Good morning Bruce,

We would like to request boundary conditions for the proposed development at 1525 Goth Avenue. The proposed development consists of a residential development with 10 units and basement office space (755 ft2). Boundary conditions are requested for the 203 mm watermain within Goth Avenue.

- The estimate fire flow is 14,000 L/min based on the FUS
- The estimate fire flow is 5,400 L/min based on the OBC
- Average Daily Demand: 0.06 L/s
- Maximum Daily Demand: 0.53 L/s
- Maximum hourly daily demand: 0.79 L/s

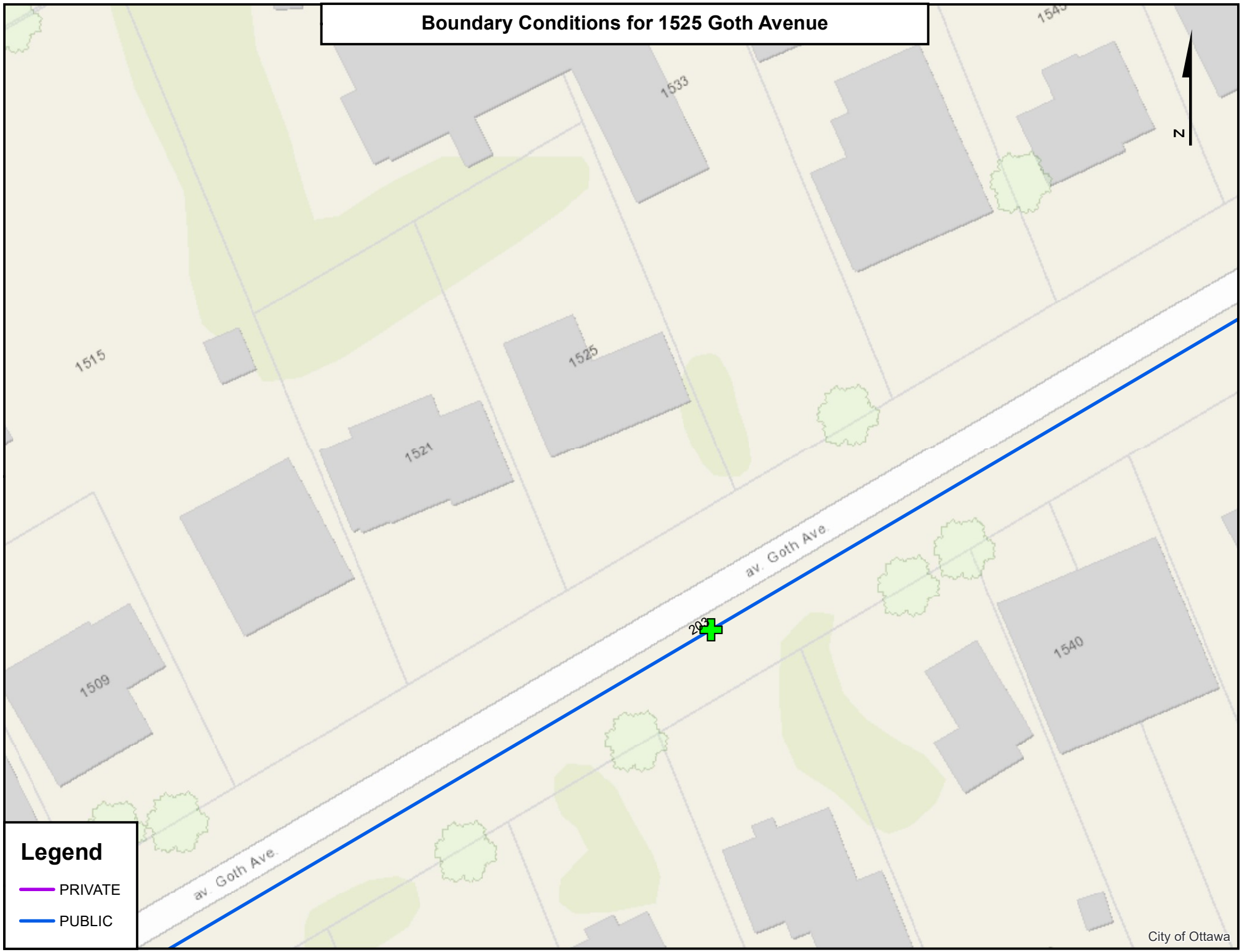
Please find attached calculations prepared for the demands listed above.

Thank you,

Alison Gosling, P.Eng.
Project Engineer, Land Development
T. 613.714.4629
a.gosling@mcintoshperry.com | www.mcintoshperry.com

McINTOSH PERRY

Turning Possibilities Into Reality


Boundary Conditions for 1525 Goth Avenue
N
1533
1515
1525
1521
1509
1540
av. Goth Ave.
av. Goth Ave.
Legend
PRIVATE
PUBLIC
City of Ottawa

APPENDIX D
SANITARY CALCULATIONS

McINTOSH PERRY

McINTOSH PERRY

CCO-22-3682 - 1525 Goth Avenue - Sanitary Demands

Project:	1525 Goth Avenue			
Project No.:	CCO-22-3682			
Designed By:	AJG			
Checked By:	AJG			
Date:	11/12/2021			
Site Area	0.11	Gross ha		
1 Bedroom	**6**		1.40	Persons per unit
2 Bedroom	**4**		2.10	Persons per unit
Total Population	17	Persons		
Office Area	**70.1**	m^2		

DESIGN PARAMETERS

Institutional/Commercial Peaking Factor	1	
Residential Peaking Factor	3.71	* *Using Harmon Formula =* 1+(14/(4+P^0.5))*0.8 *where P = population in thousands, Harmon's Correction Factor = 0.8*
Mannings coefficient (n)	0.013	
Demand (per capita)	280	L/day
Infiltration allowance	0.33	L/s/Ha

EXTRANEOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.01
Wet	0.03
Total	**0.04**

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	17	0.06
Industrial - Light**	35,000	L/gross ha/d		0
Industrial - Heavy**	55,000	L/gross ha/d		0
Commercial / Amenity	2,800	L/(1000m^2 /d)	70.1	0.002
Hospital	900	L/(bed/day)		0
Schools	70	L/(Student/d)		0
Trailer Parks no Hook-Ups	340	L/(space/d)		0
Trailer Park with Hook-Ups	800	L/(space/d)		0
Campgrounds	225	L/(campsite/d)		0
Mobile Home Parks	1,000	L/(Space/d)		0
Motels	150	L/(bed-space/d)		0
Hotels	225	L/(bed-space/d)		0
Office	75	L/7.0m^2/d		0
Tourist Commercial	28,000	L/gross ha/d		0
Other Commercial	28,000	L/gross ha/d		0

AVERAGE RESIDENTIAL FLOW	0.06	L/s
PEAK RESIDENTIAL FLOW	0.20	L/s
AVERAGE ICI FLOW	0.002	L/s
PEAK INSTITUTIONAL/COMMERCIAL FLOW	0.002	L/s
PEAK INDUSTRIAL FLOW	0.000	L/s
TOTAL PEAK ICI FLOW	0.002	L/s

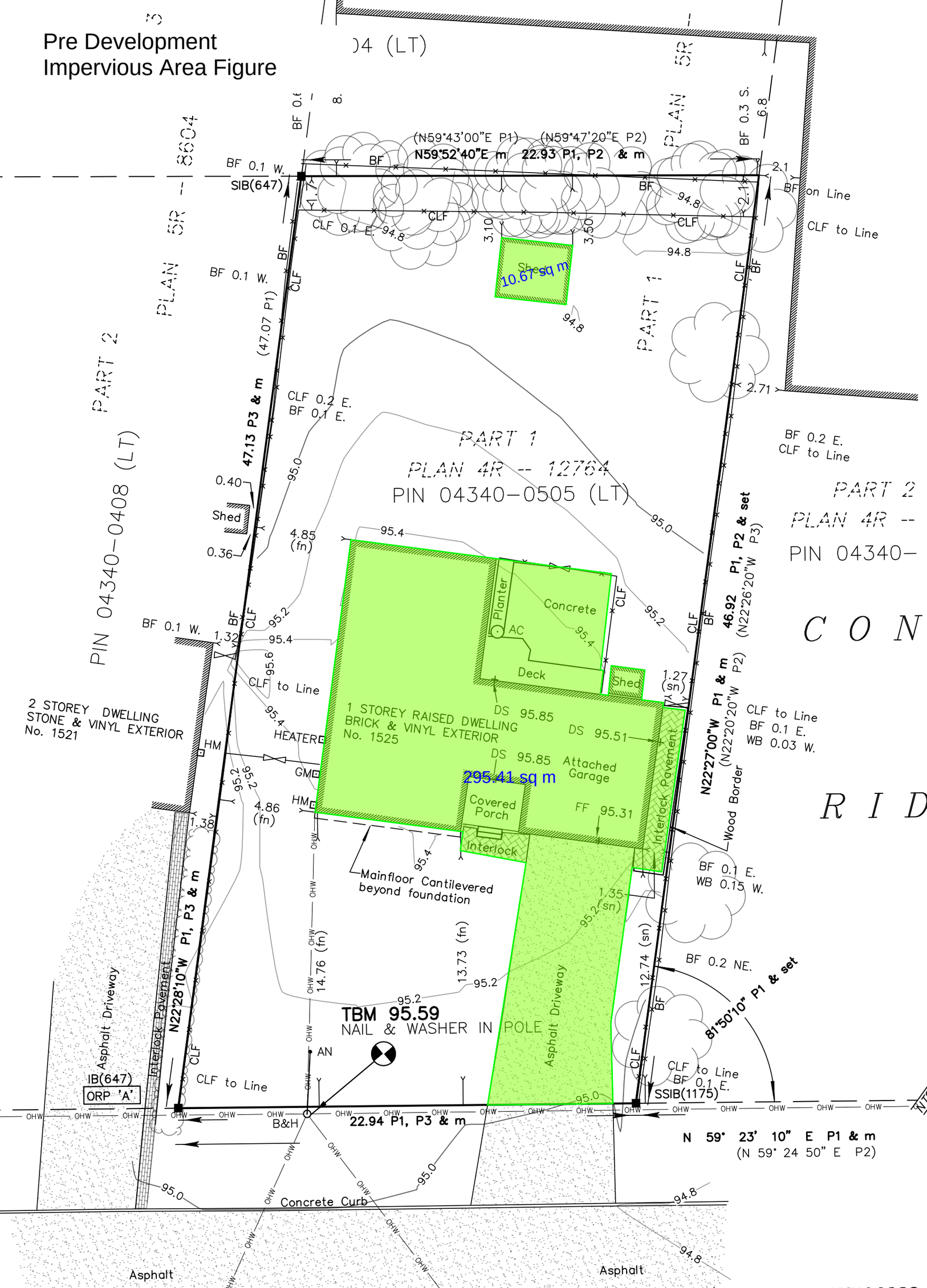
TOTAL SANITARY DEMAND

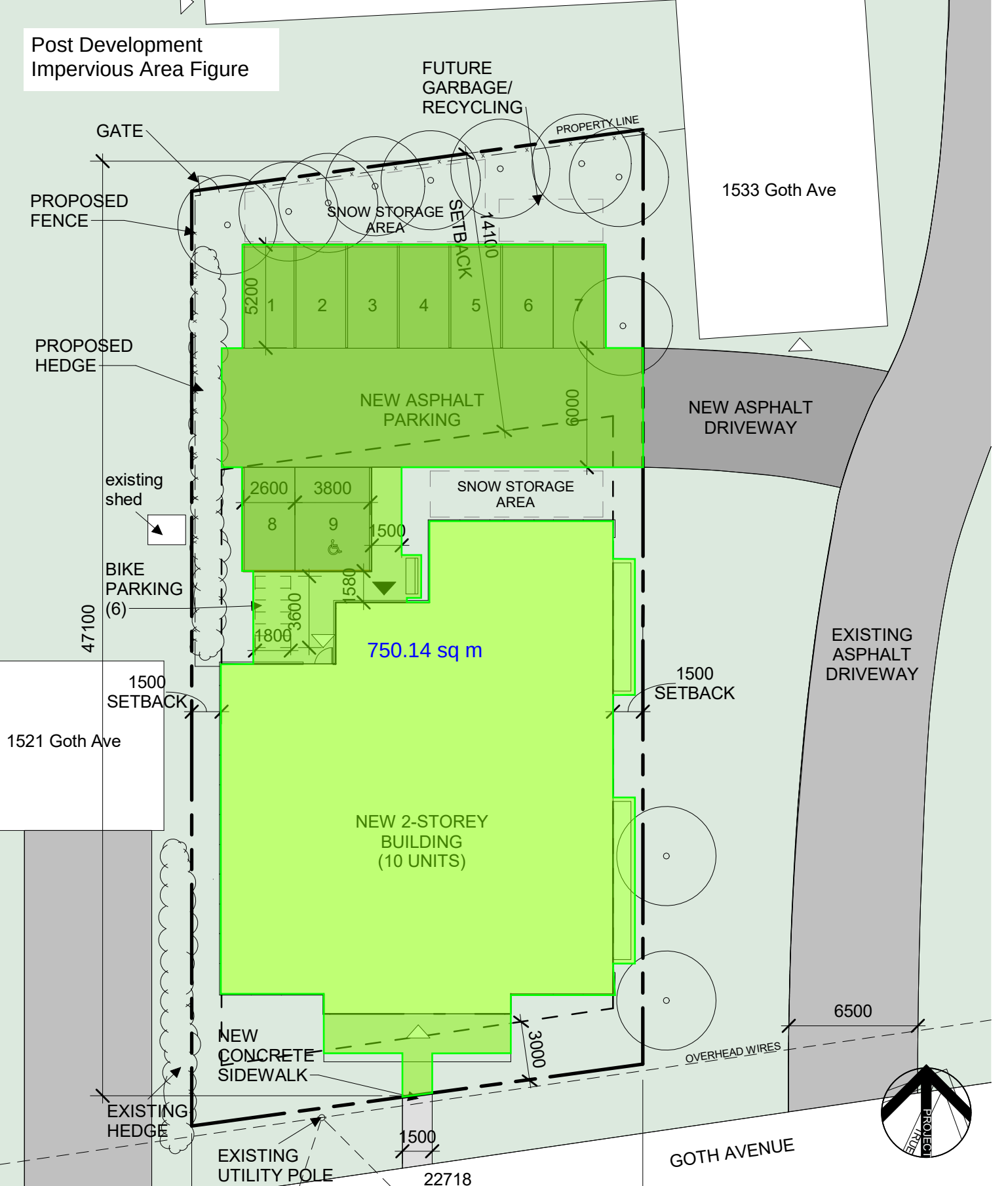
TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	0.06	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	0.21	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	0.24	L/s

APPENDIX G
STORMWATER MANAGEMENT CALCULATIONS

McINTOSH PERRY

Pre Development
Impervious Area Figure




Post Development
Impervious Area Figure
FUTURE
GARBAGE/
RECYCLING
GATE
PROPERTY LINE
PROPOSED
FENCE
SNOW STORAGE
AREA
SETBACK
1410
1533 Goth Ave
5200
1
2
3
4
5
6
7
PROPOSED
HEDGE
NEW ASPHALT
PARKING
6000
NEW ASPHALT
DRIVEWAY
existing
shed
2600
3800
8
9
SNOW STORAGE
AREA
1500
BIKE
PARKING
(6)
1580
3600
1800
47100
750.14 sq m
1500
SETBACK
1500
SETBACK
EXISTING
ASPHALT
DRIVEWAY
1521 Goth Ave
NEW 2-STOREY
BUILDING
(10 UNITS)
6500
NEW
CONCRETE
SIDEWALK
3000
OVERHEAD WIRES
EXISTING
HEDGE
1500
EXISTING
UTILITY POLE
GOTH AVENUE
22718
PROPERTY LINE

CCO-22-3682 - 1525 Goth Avenue - Runoff Calculations

Pre-Development Runoff Coefficient

Drainage Area	Area (ha)	Impervious Area (m^2)	C	Gravel Area (m^2)	C	Pervious Area (m^2)	C	C_{AVG} 2/5-Year	C_{AVG} 100-Year
A1	0.107	306.08	0.90	0.00	0.60	762.31	0.20	0.40	0.46

Pre-Development Runoff Calculations

Drainage Area	Area (ha)	C 2/5-Year	C 100-Year	Tc (min)	I (mm/hr)			Q (L/s)		
					2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
A1	0.107	0.40	0.46	10	76.8	104.2	178.6	9.14	12.40	24.65
Total	**0.107**							**9.14**	**12.40**	**24.65**

Post-Development Runoff Coefficient

Drainage Area	Area (ha)	Impervious Area (m^2)	C	Gravel Area (m^2)	C	Pervious Area (m^2)	C	C_{AVG} 2/5-Year	C_{AVG} 100-Year	
B1	0.096	675.13	0.90	0.00	0.60	286.43	0.20	0.69	0.78	*Controlled*
B2	0.011	75.01	0.90	0.00	0.60	31.83	0.20	0.69	0.78	*Uncontrolled*

Post-Development Runoff Calculations

Drainage Area	Area (ha)	C 2/5-Year	C 100-Year	Tc (min)	I (mm/hr)		Q (L/s)	
					5-Year	100-Year	5-Year	100-Year
B1	0.096	0.69	0.78	10	104.2	178.6	19.26	37.07
B2	0.011	0.69	0.78	10	104.2	178.6	2.14	4.12
Total	**0.107**						**21.40**	**41.19**

Required Restricted Flow

Drainage Area	Area (ha)	C 5-Year	Tc (min)	I (mm/hr)	Q (L/s)
				5-Year	5-Year
A1	0.107	0.46	10	104.2	14.39
Total	**0.107**				**14.39**

Post-Development Restricted Runoff Calculations

Drainage Area	Unrestricted Flow (L/s)		Restricted Flow (L/s)		Storage Required (m^3)		Storage Provided (m^3)		
	5-Year	100-Year	5-Year	100-Year	5-Year	100-Year	5-Year	100-Year	
B1	19.26	37.07	5.33	10.27	9.20	17.63	9.20	17.63	*Restricted*
B2	2.14	4.12	2.14	4.12					*Unrestrcted*
Total	**21.40**	**41.19**	**7.47**	**14.39**	**9.20**	**17.63**	**9.20**	**17.63**	

CCO-22-3682 - 1525 Goth Avenue - Runoff Calculations

Storage Requirements for Area B1

5-Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
10	104.2	19.26	5.33	13.92	8.35
12	94.7	17.50	5.33	12.17	8.76
14	86.9	16.07	5.33	10.73	9.02
16	80.5	14.87	5.33	9.54	9.16
18	75.0	13.86	5.33	8.52	9.20
20	70.3	12.99	5.33	7.65	9.18
22	66.1	12.23	5.33	6.89	9.10

Maximum Storage Required 5-year =	9.2 m^3

100-Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
10	178.6	37.07	10.27	26.80	16.08
12	162.1	33.66	10.27	23.39	16.84
14	148.7	30.87	10.27	20.61	17.31
16	137.5	28.55	10.27	18.29	17.56
18	128.1	26.59	10.27	16.32	17.63
20	120.0	24.90	10.27	14.63	17.56
22	112.9	23.43	10.27	13.17	17.38
24	106.7	22.15	10.27	11.88	17.10
26	101.2	21.00	10.27	10.74	16.75
28	96.3	19.99	10.27	9.72	16.33

Maximum Storage Required 100-year =	17.6 m^3

5-Year Storm Event Storage Summary

Storage Available (m^3) =	9.2
Storage Required (m^3) =	9.2

100-Year Storm Event Storage Summary

Storage Available (m^3) =	17.6
Storage Required (m^3) =	17.6

APPENDIX H
CITY OF OTTAWA DESIGN CHECKLIST

McINTOSH PERRY

City of Ottawa

4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

4.1 General Content

Criteria	Location (if applicable)
☐ Executive Summary (for larger reports only).	N/A
☐ Date and revision number of the report.	On Cover
☐ Location map and plan showing municipal address, boundary, and layout of proposed development.	Appendix A
☐ Plan showing the site and location of all existing services.	N/A
☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
☐ Summary of pre-consultation meetings with City and other approval agencies.	Appendix B
☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
☐ Statement of objectives and servicing criteria.	3.0 Pre-Consultation Summary

☐ Identification of existing and proposed infrastructure available in the immediate area.	N/A
☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	N/A
☐ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	N/A
☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	N/A
☐ Proposed phasing of the development, if applicable.	N/A
☐ Reference to geotechnical studies and recommendations concerning servicing.	Section 2.0 Background Studies, Standards and References
☐ All preliminary and formal site plan submissions should have the following information: ○ Metric scale ○ North arrow (including construction North) ○ Key plan ○ Name and contact information of applicant and property owner ○ Property limits including bearings and dimensions ○ Existing and proposed structures and parking areas ○ Easements, road widening and rights-of-way ○ Adjacent street names	N/A

4.2 Development Servicing Report: Water

Criteria	Location (if applicable)
☐ Confirm consistency with Master Servicing Study, if available	N/A
☐ Availability of public infrastructure to service proposed development	N/A
☐ Identification of system constraints	N/A
☐ Identify boundary conditions	Appendix C
☐ Confirmation of adequate domestic supply and pressure	N/A
☐ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	Appendix C
☐ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	N/A
☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	N/A
☐ Address reliability requirements such as appropriate location of shut-off valves	N/A
☐ Check on the necessity of a pressure zone boundary modification.	N/A
☐ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range	Appendix C, Section 4.2

☐ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	N/A
☐ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	N/A
☐ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Appendix C
☐ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	N/A

4.3 Development Servicing Report: Wastewater

Criteria	Location (if applicable)
☐ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	N/A
☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A
☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	N/A
☐ Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 5.2 Proposed Sanitary Sewer

☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Section 5.3 Proposed Sanitary Design
☐ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	N/A
☐ Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 5.2 Proposed Sanitary Sewer
☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A
☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
☐ Special considerations such as contamination, corrosive environment etc.	N/A

4.4 Development Servicing Report: Stormwater Checklist

Criteria	Location (if applicable)
☐ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Analysis of available capacity in existing public infrastructure.	N/A
☐ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	N/A
☐ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5-year event (dependent on the receiving sewer design) to 100-year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Set-back from private sewage disposal systems.	N/A
☐ Watercourse and hazard lands setbacks.	N/A
☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A
☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
☐ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5-year return period) and major events (1:100-year return period).	Appendix G

☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A
☐ Calculate pre-and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Section 7.0 Proposed Stormwater Management Appendix G
☐ Any proposed diversion of drainage catchment areas from one outlet to another.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	N/A
☐ Identification of potential impacts to receiving watercourses	N/A
☐ Identification of municipal drains and related approval requirements.	N/A
☐ Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ 100-year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	N/A
☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A

☐ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	N/A
☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
☐ Identification of fill constraints related to floodplain and geotechnical investigation.	N/A

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

Criteria	Location (if applicable)
☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.	N/A
☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A
☐ Changes to Municipal Drains.	N/A
☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	N/A

4.6 Conclusion Checklist

Criteria	Location (if applicable)
☐ Clearly stated conclusions and recommendations	Section 8.0 Summary Section 9.0 Recommendations
☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	All are stamped
☐ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	All are stamped