

ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES REPORT BASELINE AND FISHER – 780 BASELINE ROAD



Project No.: CCO-22-0952

Prepared for:

Theberge Homes
205-1600 Laperriere Ave
Ottawa, ON, K1Z 8P5

Prepared by:

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May 13th, 2022 Rev2

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1.0 PROJECT DESCRIPTION

1.1 Purpose

McIntosh Perry (MP) has been retained by Theberge Homes to prepare this Assessment of Adequacy of Public Services Report in support of the Zoning By-Law Amendment for the contemplated development located at 780 Baseline Road within the City of Ottawa.

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 contemplated development.

1.2 Site Description

The subject property, herein referred to as the site, is located at 780 Baseline Road within the Knoxdale-Merivale Ward. The site covers approximately **1.43 ha** and is located at the intersection of Baseline Road and Fisher Avenue. The site is zoned for General Mixed use (GM). See Site Location Plan in **Appendix 'A'** for more details.

1.3 Proposed Development and Statistics

The proposed development consists of three high-rise mixed-use buildings. Building A contains 259 residential units and 540 m² with access from Fisher Avenue. Building B contains 291 residential units and 1415 m² of commercial space with access from Baseline Road. Building C contains 318 residential units and 941 m² of commercial space with access from Baseline Road & Fisher Avenue. Underground parking and drive aisles will be provided throughout the site with access from both Fisher Avenue and Baseline Road. Refer to **Site Plan** prepared by Roderick Lahey Architect Inc (RLA) and included in **Appendix B** for further details.

1.4 Existing Conditions and Infrastructure

The site is currently developed containing a 1-storey commercial strip mall and asphalt parking areas. The existing appears to be serviced by the 203 mm diameter watermain within Hillard Avenue. There is an existing 375 mm diameter municipal sanitary sewer that passes through the southern portion of the site, from Hillard Avenue to Fisher Avenue.

Sewer and watermain mapping collected from the City of Ottawa indicate that the following services exist across the property frontages within the adjacent municipal rights-of-way(s):

- ❖ Fisher Avenue
 - 406 mm diameter PVC watermain,
 - 375-450 mm diameter PVC sanitary sewer tributary to the Cave Creek collector,
 - 1200 mm diameter concrete storm sewer tributary to the Rideau Canal approximately 1 km downstream.

- ❖ Baseline Road
 - 406 mm diameter cast iron watermain,
 - 300 mm diameter concrete sanitary sewer tributary to the Cave Creek collector,
 - 1050 mm diameter concrete storm sewer tributary to the Rideau Canal approximately 1 km downstream.

- ❖ Sunnycrest Drive & Hillard Avenue
 - 203 mm diameter PVC watermain,
 - 300 mm diameter PVC sanitary sewer tributary to the Cave Creek collector,
 - 450 mm diameter concrete storm sewer tributary to the Rideau Canal approximately 1.2 km downstream.

1.5 Approvals

The contemplated development is 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.

An Environmental Compliance Approval (**ECA**) through the Ministry of Environment, Conservation and Parks (**MECP**) is not anticipated to be required for the development since the development is contained a single parcel of land, does not outlet to a combined sewershed, and does not propose industrial usage. As a result, the stormwater management system meets the exemption requirements under O.Reg 525/90.

2.0 BACKGROUND 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 proposed site were reviewed in order to identify infrastructure available to service the contemplated development.

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 June 29th, 2021, regarding the proposed site servicing. The notes from this meeting can be found in **Appendix B**.

4.0 WATERMAIN

4.1 Existing Watermain

The site is located within the 2W2C pressure zone, as per the Water Distribution System mapping included in **Appendix C**. There are three municipal fire hydrants along Fisher Avenue, one along Baseline Road, and one along Sunnycrest Drive available to service the development.

4.2 Proposed Watermain

In accordance with Section 4.3.1 of the **Ottawa Water Guidelines**, service areas with a basic day demand greater than 50 m³/day require a dual connection to the municipal system. It is anticipated that a dual connection to all three buildings will be required to provide a redundant connection to service the site.

The Fire Underwriters Survey 2020 (FUS) method was utilized to estimate the required fire flow for the site. The following parameters were coordinated with the architect.

- ❖ Type of construction – Non-Combustible Construction
- ❖ Occupancy Type – Limited Combustibility
- ❖ Sprinkler Protection – Supervised Sprinkler System

The results of the calculations yielded a required fire flow of **8,000 L/min** (133.3 L/s) for Building A, **9,000 L/min** (150 L/s) for Building B, and **6,000 L/min** (100.0 L/s) for Building C. The detailed calculations for the FUS can be found in **Appendix C**.

The water demands for the proposed building have been calculated to adhere to the **Ottawa Water Guidelines** and can be found in **Appendix C**. The results have been summarized below:

Table 1: Water Supply Design Criteria and Water Demands

Site Area	1.43 ha
Bachelor/1 Bedroom	1.4 L/person/unit
2 Bedroom	2.1 L/person/unit
3 Bedroom	3.1 L/person/unit
Residential Daily Demand	280 L/person/day
Maximum Daily Peaking Factor	2.5 x avg day (C) 2.9 x avg day (B) 3.0 x avg day (A)
Maximum Hour Peaking Factor	4.3 x avg day (B) 4.5 x avg day (A) 5.5 x avg day (C)
Commercial	28,000 L/ha/day

Maximum Daily Peaking Factor	1.5 x avg day
Maximum Hour Peaking Factor	1.8 x max day

The City provided the estimated water pressures at both for the average day scenario, peak hour scenario and the max day plus fire flow scenario for the demands indicated by the correspondence in **Appendix C**. The resulting pressures for the boundary conditions results are shown in **Table 2**, below.

Table 2: Boundary Conditions Results

	Scenario	Proposed Demands (L/s)	HGL (m H ₂ O)* / kPa
Building A	Average Day Demand	1.55	48.4 / 474.8
	Maximum Daily + Fire Flow Demand	4.62 + 133.3	38.0 / 372.8 (@ 250 L/s)
	Peak Hourly Demand	6.95	40.3 / 395.3
Building B	Average Day Demand	1.65	48.4 / 474.8
	Maximum Daily + Fire Flow Demand	4.71 + 150	34.5 / 338.4 (@ 333 L/s)
	Peak Hourly Demand	7.01	40.4 / 396.3
Building C	Average Day Demand	1.76	48.4 / 474.8
	Maximum Daily + Fire Flow Demand	4.36 + 100	36.7 / 360.0 (@ 283 L/s)
	Peak Hourly Demand	9.58	40.4 / 396.3

**Adjusted for an estimated ground elevation of 84m above the connection point for connection.*

The normal operating pressure range is anticipated to be 395.3 kPa to 474.8 kPa and will not be less than 275 kPa (40 psi) or exceed 689 kPa (100 psi). The proposed watermains will meet the minimum required 20 psi (140 kPa) from the **Ottawa Water Guidelines** at the ground level under maximum day demand and fire flow conditions.

5.0 SANITARY DESIGN

5.1 Existing Sanitary Sewer

There is an existing 300 mm diameter sanitary sewer within Baseline Road, an existing 450 mm diameter sanitary sewer within Fisher Avenue, and an existing 300 mm diameter sanitary sewer within Sunnycrest Drive/Hillard Avenue fronting the site. The subject site currently contributes wastewater to the Cave Creek trunk sewer.

In addition, there is an existing 375 mm diameter municipal sanitary sewer that crosses through site, from Hillard Avenue to Fisher Avenue.

5.2 Proposed Sanitary Sewer

The existing 375 mm diameter sanitary sewer crossing through the site may need to be relocated to accommodate development.

Table 3, below, summarizes the wastewater design criteria identified by the *Ottawa Sewer Guidelines*.

Table 3: Sanitary Design Criteria

Design Parameter	Value
Site Area	1.36 ha
Commercial	28,000 L/m ² /day
Residential	280 L/person/day
Commercial Peaking Factor	1.5
Residential Peaking Factor	3.14 (Total)

Table 4, below, summarizes the estimated wastewater flow from the contemplated development. Refer to **Appendix D** for detailed calculations.

Table 4: Summary of Estimated Sanitary Flow

Design Parameter	Building A Total Flow (L/s)	Building B Total Flow (L/s)	Building C Total Flow (L/s)	Total Flow (L/s)
Total Estimated Average Dry Weather Flow	1.57	1.67	1.78	5.02
Total Estimated Peak Dry Weather Flow	5.24	5.48	5.87	15.44
Total Estimated Peak Wet Weather Flow	5.37	5.62	6.00	15.84

The full flowing capacity of a 200 mm diameter service at a 1% slope is estimated to be **32.8 L/s**. Therefore, a 200 mm diameter service would be sufficiently sized to accommodate the contemplated development.

A total sanitary flow of 16.50 L/s was submitted to City staff for a review of the municipal system. It was indicated that there were no concerns with the additional flows. The estimate demands have since been reduced to 15.84 L/s, therefore, the municipal system is sufficiently sized to accommodate the development. Refer to correspondence included in **Appendix D** for reference.

6.0 STORM SEWER DESIGN

6.1 Existing Storm Sewers

Stormwater runoff from the site is currently tributary to the Rideau River within the Ottawa River West sub-watershed. There is an existing 1050 mm diameter storm sewer within Baseline Road and an existing 1200 mm diameter storm sewer within Fisher Avenue available to service the site. The existing sewers are tributary to the Rideau River approximately 1.0-1.2 km downstream.

6.2 Proposed Storm Sewers

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 PROPOSED STORMWATER MANAGEMENT

7.1 Design Criteria and Methodology

Stormwater management for the site will be maintained through positive drainage away from the contemplated building and towards the adjacent ROWs. The quantitative and qualitative properties of the storm runoff for both the pre- and 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

- Quality controls are not anticipated for the development due to the distance to the outlet. Requirements to be determined by the RVCA.

Quantity Control

- Any storm events greater than 5-year, up to 100-year, and including 100-year storm event must be detained on site.
- Post-development to be restricted to the 5-year storm event, based on a calculated time of concentration greater than 10 minutes and a rational method coefficient of 0.50. Refer to *Section 7.2* for further details.

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 SWM facility sized using this method is expected 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 *City of Ottawa - Sewer Design Guidelines*, the 5-year balanced 'C' value must be increased by 25% for a 100-year storm event to a maximum of 1.0.

7.3 Pre-Development Drainage

The site currently contains a catch basin system within the parking lot. It has been assumed that the existing development contained no stormwater management controls for flow attenuation. The estimated pre-development peak flows for the 5- and 100-year events are summarized below in **Table 5**. See CCO-22-0952 - PRE in **Appendix G** for calculations.

Table 5: Pre-Development Runoff Summary

Drainage Area	Area (ha)	Q (L/s)	
		5-Year	100-Year
A1	1.43	346.27	661.12

7.4 Post-Development Drainage

To meet the stormwater objectives the development will contain a combination of flow attenuation with rooftop controls, surface, and subsurface storage.

Based on the criteria listed in *Section 7.2.1*, the development will be required to restrict flow to the 5-year storm event. It is estimated that the target release rate during the 100-year event will be **206.90 L/s**. See **Appendix G** for calculations.

The following storage requirement estimate assumes that approximately 10% of the development area will be directed to the outlet without flow attenuation (Area B2). The estimated post-development peak flows for the 5 and 100-year events and the required storage volumes are summarized below in **Table 6**, below.

Table 6: Post-Development Runoff Summary

Drainage Area	Area (ha)	5-year Peak Flow (L/s)	100-year Peak Flow (L/s)	100-year Storage Required (m ³)
B1	1.286	79.46	153.10	210.98
B2	0.143	27.92	53.80	-
Total	1.429	107.38	206.90	210.98

It is anticipated that approximately **211 m³** of storage will be required on site to attenuate flow to the established release rate of **206.9 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.

8.0 SUMMARY

- The proposed development consists of three high-rise mixed-use buildings. Building A contains 259 residential units and 540 m² of commercial space with access from Fisher Avenue. Building B contains 291 residential units and 1415 m² of commercial space with access from Baseline Road. Building C contains 318 residential units and 941 m² of commercial space with access from Baseline Road and Fisher Avenue.
- The results of the FUS calculations yielded a required fire flow of **8,000 L/min** (133.3 L/s) for Building A, **9,000 L/min** (150 L/s) for Building B, and **6,000 L/min** (100 L/s) for Building C.
- The development is anticipated to have a peak wet weather flow of **15.84 L/s**. Based on the coordination with City staff, there is capacity within the municipal system to accommodate the flow increase.
- Based on City of Ottawa guidelines, the development will be required to attenuate post-development 5 and 100-year flows to the 5-year release rate of **206.9 L/s**.
- It is contemplated that stormwater objectives may be met through storm water retention via roof top, surface, and subsurface storage. It is anticipated that approximately **211 m³** of onsite storage will be required to attenuate flow to the established release rate.
- Quality controls are not anticipated for the development due to the distance to the outlet. Requirements to be determined by the RVCA.

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 report in support of the Zoning By-Law Amendment application for the contemplated development at 780 Baseline Road.

This report is respectfully being submitted for approval.

Regards,

McIntosh Perry Consulting Engineers Ltd.



Alison J. Gosling, P.Eng.
Project Engineer, Land Development
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10.0 STATEMENT OF LIMITATIONS

This report was produced for the exclusive use of Theberge Homes. 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**



LEGEND

-  Site Location
-  Local Road
-  Major Road
-  Railroad
-  Watercourse
-  Waterbody
-  Wooded Area



REFERENCE

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

CLIENT:		THEBERGE HOMES	
PROJECT:		780 BASELINE ROAD, OTTAWA	
TITLE:		SITE LOCATION	
PROJECT NO: CCO-22-0952		FIGURE:	
Date	Apr., 10, 2022	1	
GIS	SK		
Checked By	AG		

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APPENDIX B
BACKGROUND DOCUMENTS

Pre-Application Consultation Meeting Notes

Property Address: 780 Baseline Road
Pre-Application Consultation File Number PC2021-0226
June 29, 2021, 9:00 AM to 10:30 AM, via Microsoft Teams

Attendees:

Laurel McCreight – Planner (File Lead), City of Ottawa
Mark Young – Planner (Urban Design), City of Ottawa
Neeti Paudel – Project Manager (Transportation), City of Ottawa
Luis Juarez – Planner (Heritage), City of Ottawa
Jeffrey Ren – Co-op Student, City of Ottawa
Ted Horton – NCC
Joey Theberge – Theberge Homes
Miguel Tremblay – Fotenn
Rejane Padaratz – Fotenn
Katie O’Callaghan – Fotenn
Christopher Gordon – CGH Transportation
Doug Yonson – Fisher Heights Community Association
Tony Sroka – Fisher Heights Community Association

Regrets:

Jessica Valic – Project Manager (Infrastructure), City of Ottawa
Louise Cervený – Planner (Parks), City of Ottawa

Subject: 780 Baseline Avenue - Pre-Application Consultation

Meeting notes:

Opening & attendee introduction:

- Introduction of meeting attendees

Overview of proposal:

- Fotenn, on behalf of the property owner Theberge Homes, has requested a pre-application consultation meeting regarding 780 Baseline Road to “build three (3) high-rise buildings with podiums at bases. The podium heights range from six (6) to three (3) storeys to support a gradual height transition towards the residential neighbourhood.”
- Midblock pedestrian connections, amenity space and a parkland dedication block are also proposed for the site; the tallest buildings would be located closest to the intersection and the proposed transit station.
- The proposal is subject to Site Plan Control and Zoning By-law Amendment applications. However, the applicant is only pre-consulting regarding a Zoning By-law Amendment.
- The site is currently occupied by a single storey commercial plaza; the applicants intend to continue operating the commercial plaza while phase A of the proposed development

takes place in the southern portion of the site. A new tenant is expected to move into the Quickie Mart location and a new drive-through is being contemplated for the plaza.

- The site measures approximately 3.5 acres with 60 metres of frontage on both Baseline Road and Fisher Avenue.
- A sanitary sewer easement is located on the property and would need to be relocated.
- A considerable amount of density is being added to the site and it is expected that this density will contribute to the ridership at the planned rapid transit station; the added density may also warrant park space, which is why a parkland dedication block is also being proposed.
- The subject property is located at the intersection of two arterial streets - Baseline Road and Fisher Avenue, and across from the Central Experimental Farm; a rapid transit station is planned for the intersection of Baseline Road and Fisher Avenue. The location is permissive of added height for the proposed development under the current policies of the Official Plan.
- The subject property is designated as Minor Shopping Area and Medium Density Residential Area under the Carleton Heights Secondary Plan – the plan is to be repealed and not replaced under the New Official Plan (New OP).

Projected timing including construction:

- The development is proposed to be undertaken in 3 phases.
 - Phase A will seek to develop the southern portion of the site with approximately 200 units while the existing commercial plaza continues operating.
 - Timing for phases B and C will be determined by market forces with more long-term plans being determined at a later date. The full build-out proposes a total of approximately 780 units.
 - The applicant intends to apply for a Zoning By-law Amendment for the entire site before the New OP comes into effect in February 2022.

Preliminary comments and questions from staff and agencies, including follow-up actions:

- Planning
 - A new draft of the New OP is expected to come out in July – this will likely provide more details relating to the Official Plan directions for the proposed development.
 - In the period between Council approval of the New OP this fall and the Minister's approval of the New OP in February of 2022, City staff will apply whichever provision, as between the Current and New OP, is more restrictive.
 - Although the New OP will repeal the Carleton Heights Secondary Plan, the policies of the secondary plan will need to be addressed if an application is to be filed before February 2022 (deadline for Ministerial approval).

- More analysis is recommended with respect to the proposed building heights – when considering height and transition, the angular plane must also be considered in addition to building setbacks.
- Considerations for moving the parkland block further south may aid with the proposed development's transition to the neighbouring low-rise community.
- Section 37 and community benefit requirements will apply for the proposed development.
- The mixed-use aspect of the proposed development is appreciated.
- Please continue to reach out to Councillor Egli and Councillor Brockington (in the neighbouring ward) and the community association as the proposal is developed further.
- The proposed development is not within the Airport Vicinity Development Zone as identified in [Annex 10](#) of the Official Plan.

Questions regarding the comments above can be directed to the Planner (File Lead), Laurel McCreight, at Laurel.McCreight@ottawa.ca.

- Urban Design
 - A Design Brief is required. A terms of reference is provided (please see attached).
 - The approach to providing connectivity through the site to both Baseline Road and Fisher Avenue is appreciated.
 - The inclusion of a public park is appreciated.
 - The proposed increase in height requires careful consideration and must meet the requirements of the Official Plan and High-Rise Design Guidelines. The key component is built form transition and compatibility. It should also be noted that the current Secondary Plan land use designation is medium density/minor shopping sub-centre (120 people per acre)
 - In order to assess transition and compatibility a 45-degree angular plane will need to be applied in this context to the proposed massing for all three buildings, from existing stable low-rise areas – located to the south, west and east in accordance with High Rise Design Guideline 1.17.
 - The relationship between the Phase 1 building and Hilliard Avenue and the associated podium height is not appropriate. The built form should be setback a distance equivalent to the other front yard setbacks on Hilliard. The building should be a height that is low-rise in keeping with the planned context to the south and west, not mid-rise.
 - The current relationship between Building C and the western property line is not appropriate. If units are to be planned to have a facing condition, a greater transition/separation distance is required.

- A public pedestrian connection should be provided on the west side of Building C, to provide a stronger transition between the low-rise built form and the proposal.
- The public park as shown should be considered on the south side of the Phase 1 building to avoid shadowing and to assist in providing transition to the stable low-rise community.
- Opportunities for internalized site drop-off/pick up is important. This should also include parking garage access and should be coordinated as part of the ultimate site design.
- A mix of uses is encouraged as part of the redevelopment. A minimum amount of commercial should be required at grade to support the proposed development and surrounding community.
- The tower footprints should be designed to minimize shadow and wind impacts.

Questions regarding the comments above can be directed to the Planner (Urban Design), Mark Young, at Mark.Young@ottawa.ca.

- Engineering

- Unfortunately, the Project Manager could not attend the meeting.
- A sanitary easement is located on the property; the continued functioning of the sanitary easement will need to be demonstrated if it is proposed to be moved.
- The proposed development is in and adequacy of servicing stage.

Questions regarding the comments above can be directed to the Project Manager (Infrastructure), Jessica Valic, at Jessica.Valic@ottawa.ca.

- Transportation

- The proposed development is representative of Transit Oriented Development
- Traffic impact will need to be evaluated – looking at phase A first, step one of a TIA will need to be submitted with scoping for the TIA next.
- The proposed access is in close proximity to the merge lane.
- The frontage along Fisher Avenue needs improvement – the City would ask for a cycle track and improvements to sidewalks
- With respect to removing an access in phase B, the TIA needs to look at whether a right turn lane is required.
- The City's Environmental Assessment group has been contacted for the proposed transit station plans. The applicants will provide any plans that they have found.
- The Fisher Avenue right-of-way protection to be confirmed.

Questions regarding the comments above can be directed to the Project Manager (Transportation), Neeti Paudel, at Neeti.Paudel@ottawa.ca.

- Parks Planning
 - Unfortunately, the Parks Planner could not attend the meeting.

Questions regarding the comments above can be directed to the Planner (Parks), Louise Cerveny, at Louise.Cerveny@ottawa.ca.

- Heritage Planning
 - A [Cultural Heritage Impact Statement](#) will be required with a focus on phases B and C of the proposed development.
 - The proposed development should be sensitive to the rural character of the Central Experimental Farm.

Questions regarding the comments above can be directed to the Planner (Heritage), Luis Juarez, at Luis.Juarez@ottawa.ca.

- NCC
 - The proposed development's impact of the Central Experimental Farm and the experiments that Agriculture and Agri-Food Canada run on the farm will need to be carefully considered – this will include shadow impacts.
 - The Commemorative Integrity Statement of the Central Experimental Farm and NCC documents should be used to guide the proposed development.

Questions regarding the comments above can be directed to the Planner (NCC), Ted Horton, at Ted.Horton@ncc-ccn.ca.

- Fisher Park Community Association
 - Zoning Amendment for entire site in full?
 - Yes, the Zoning By-law Amendment will be for all three phases.
 - Where do the applicant's station drawings come from?
 - The City's transportation staff will look into the station drawings.
 - The additional residents going onto Fisher Avenue would necessitate a road widening; Fisher Avenue going southbound has many intersections and is already a busy street.
 - A Transportation Impact Assessment (TIA) will be required and it will identify concerns; if required, the applicants will submit a roadway modification application (RMA) to make alterations to the road.
 - What is the project timing going to be? What is the proposed unit-count?
 - Phase A will seek to develop the southern portion of the site with approximately 200 units while the existing commercial plaza continues operating.
 - Timing for phases B and C will be determined by market forces with more long-term plans being determined at a later date. The full build-out proposes a total of approximately 780 units.

- The applicant intends to apply for a Zoning By-law Amendment for the entire site before the New OP comes into effect in February 2022.
- Phasing, separation, and pedestrian connections are appreciated.
- The removal of the parking lot is a concern, will there be spillover parking as the existing parking lot does fill out during peak hours.
- Connectivity to experimental farm will provide residents with a valuable amenity.
- The proposal represents a significant increase in height and density with a doubling of the community population.
- The proposed park not useful for the greater community, can a cash-in-lieu payment be asked for?
 - The park will be located at the corner of Sunnycrest Drive and Hilliard Avenue – it will be accessible to the community.
 - The City does not have to accept a parkland dedication; parks planning staff will determine if a park is needed.
 - The space could be a privately-owned public space (POPS).
 - Other community benefits such as bike corridor may be implemented.
 - The applicant could pursue a four-tower layout for the site if a park is not required.
- Pick up and drop off areas and space for garbage collection are needed.
- The neighbouring community is concerned about shadow impacts.
 - A shadow analysis will be required.
- Surface parking will be needed despite the fact that the proposed development is a Transit Oriented Development in order to accommodate neighbourhood scale commercial uses.
- Will the Lonestar be kept?
 - The existing plaza will continue to operate; the Lonestar may continue to be located on this site as a ground floor commercial use in a mixed-use building after the redevelopment occurs.
- What form do the private amenity spaces take?
 - Required amenity spaces will be provided
- Will the proposed developments be condominium units or apartment units? The proposed development should address the need for larger, more family-oriented apartment.
 - It is unknown if the proposed development will be condominium units or apartment units, the market will decide.

Submission requirements and fees

- Fees, timelines and application forms for Zoning By-law Amendments can be found [here](#).
- Additional information regarding fees related to planning applications can be found [here](#).
- A list of required plans and studies has been attached. Required plans and studies include:
 - Adequacy of Servicing Report
 - Geotechnical Report
 - TIA
 - Concept Plan
 - Survey
 - Elevations and Renderings
 - Planning Rationale
 - Design Brief
 - Phase 1 ESA
 - Applicant's Public Consultation Strategy (may be included in the Planning Rationale)
 - Wind and Shadow Studies
 - Cultural Heritage Impact Statement
- Plans are to be standard A1 size (594 mm x 841 mm) sheets, utilizing an appropriate Metric scale (1:200, 1:250, 1:300, 1:400 or 1:500).
- All PDF submitted documents are to be unlocked and flattened.

Next steps

- The applicant is encouraged to continue discussing the proposal with Councillor Egli, Councillor Brockington, community groups and neighbours.
- Please feel free to contact City staff for further feedback as the proposal is developed further.



PROJECT INFORMATION		
ZONING	GM	
SITE AREA	14,294.4 sq. m. (153,864 sq. ft.)	
REQUIRED		
BUILDING HEIGHT	18.0m	
MAXIMUM FLOOR SPACE INDEX	2.0	
FRONT YARD SETBACK	3.0m	
CORNER YARD SETBACK	3.0m	
INTERIOR YARD SETBACK (VARIES)	0.0 - 5.0m	
REAR YARD SETBACK (VARIES)	3.0m - 7.5m	
MINIMUM WIDTH OF LANDSCAPE AREA (ADJUTING A STREET OR RESIDENTIAL ZONE)	3.0m	
MINIMUM WIDTH OF LANDSCAPE BUFFER	0.0m / 3.0m	
AMENITY SPACE - PER UNIT	6.0 sq. m.	
PARKING - PER UNIT AFTER 12 UNITS	0.5	
PARKING - VISITOR ONLY PER UNIT	0.2	
PARKING - COMMERCIAL RESTAURANT	5.0 PER 100m ² GFA	
PARKING - COMMERCIAL RETAIL	1.25 PER 100m ² GFA	
PARKING - COMMERCIAL P.S.B.	1.25 PER 100m ² GFA	
BICYCLE PARKING - RESIDENTIAL PER UNIT	0.5	
BICYCLE PARKING - COMMERCIAL	1 PER 250m ² GFA	
MAX. VEHICLE PARKING - PER UNIT	1.75	
MAX. VEHICLE PARKING - COMMERCIAL	VARIES PER USE	
AISLE & DRIVEWAY WIDTH - VARIES	6.0m - 6.7m	
PROVIDED		
BUILDING HEIGHT - BUILDING A	25 STOREYS - 81.0m	
BUILDING HEIGHT - BUILDING B	25 STOREYS - 81.0m	
BUILDING HEIGHT - BUILDING C	29 STOREYS - 93.0m	
GRADE - BUILDING A	84.5m geo. elev.	
GRADE - BUILDING B	85.0m geo. elev.	
GRADE - BUILDING C	84.3m geo. elev.	
ALLOWABLE PROJECTION - AMENITY ROOM	4.0m h.L.	
MAXIMUM FLOOR SPACE INDEX	4.1	
UNIT COUNT	868 units	
FRONT YARD SETBACK	3.0m	
CORNER YARD SETBACK	3.2m	
INTERIOR YARD SETBACK	5.0m / 17.0m	
REAR YARD SETBACK	7.5m - 10.7m	
VEHICLE PARKING - TOTAL	655	
VEHICLE PARKING - RESIDENTIAL UNIT	416	
VEHICLE PARKING - VISITOR	174	
VEHICLE PARKING - COMMERCIAL	65	
BICYCLE PARKING - RESIDENTIAL	434	
BICYCLE PARKING - COMMERCIAL	12	
LOT COVERAGE	30.4%	
TOTAL PROJECT G.F.A.	57,822.0 sq. m. 622,391 sq. ft.	
CAR PARKING		
REQUIRED - PROVIDED		
RESIDENCE	-0.5 PER UNIT AFTER 12 UNITS	416
VISITOR	-0.2 PER UNIT	174
COMMERCIAL RESTAURANT	-5.0 PER 100m ² GFA	700m ² 35
COMMERCIAL RESTAURANT TAKE-OUT	-2.5 PER 100m ² GFA	200m ² 5
COMMERCIAL RETAIL	-1.25 PER 100m ² GFA	700m ² 9
COMMERCIAL P.S.B.	-1.25 PER 100m ² GFA	1,300m ² 16
TOTAL		655
MAXIMUM PARKING AS PER TABLE 103 = 1.75 PER UNIT		1,519
BICYCLE PARKING		
REQUIRED - PROVIDED		
RESIDENCE	-0.5 PER UNIT (868 UNITS)	434
COMMERCIAL	-1 PER 250m ² GFA (2,895.7m ²)	12
TOTAL		446
AMENITY SPACE		
INTERIOR AMENITY - COMMUNAL		600.0 sq. m.
EXTERIOR TERRACES - COMMUNAL		600.0 sq. m.
EXTERIOR ROOF TOP - COMMUNAL		600.0 sq. m.
INTERIOR ROOF TOP - COMMUNAL		600.0 sq. m.
AT GRADE EXTERIOR COMMUNAL		800.0 sq. m.
PRIVATE BALCONIES		2,400.0 sq. m.
TOTAL		5,600.0 sq. m.
TOTAL COMMUNAL		3,200.0 sq. m.
REQUIRED - 6.0M ² PER UNIT (868)		5,208.0 sq. m.
REQUIRED COMMUNAL @ 50%		2,604.0 sq. m.
LAND PHASE AREA		
PHASE 1 - BUILDING "A"	3,340.0 sq. m.	23.4%
PHASE 2 - BUILDING "B"	5,871.9 sq. m.	41.1%
PHASE 3 - BUILDING "C"	5,082.5 sq. m.	35.5%
TOTAL	14,294.4 sq. m.	100.00%
LOT COVERAGE		
BUILDING FOOTPRINT - "A"	1,476.5 sq. m.	10.3%
BUILDING FOOTPRINT - "B"	2,157.8 sq. m.	15.1%
BUILDING FOOTPRINT - "C"	1,564.8 sq. m.	11.0%
DRIVING SURFACE	3,730.0 sq. m.	26.1%
LANDSCAPE SURFACE	5,365.3 sq. m.	37.5%
TOTAL	14,294.4 sq. m.	100.00%
GROSS BUILDING - AREAS		
BUILDING "A"		
TOTAL AREA		17,575.9 sq. m. 189,185 sq. ft.
TOWER FOOTPRINT		780.0 sq. m. 8,396 sq. ft.
UNIT COUNT		259
VEHICLE PARKING - RESIDENTIAL ONLY		124 + 02 176
BICYCLE PARKING		130 + 2 132
COMMERCIAL AREA		540.0 sq. m. 5,810 sq. ft.
BUILDING "B"		
TOTAL BUILDING AREA		20,041.6 sq. m. 215,726 sq. ft.
TOWER FOOTPRINT		780.0 sq. m. 8,396 sq. ft.
UNIT COUNT		291
VEHICLE PARKING - RESIDENTIAL ONLY		140 + 08 198
BICYCLE PARKING		148 + 6 152
COMMERCIAL AREA		1,415.0 sq. m. 15,200 sq. ft.
BUILDING "C"		
TOTAL AREA		20,204.6 sq. m. 217,490 sq. ft.
TOWER FOOTPRINT		598.1 sq. m. 6,438 sq. ft.
UNIT COUNT		318
VEHICLE PARKING - RESIDENTIAL ONLY		153 + 04 217
BICYCLE PARKING		159 + 4 163
COMMERCIAL AREA		941.0 sq. m. 10,129 sq. ft.
UNIT MIX - 868 UNITS		
STUDIO UNIT		6.7% 58
ONE BEDROOM UNIT		51.8% 450
TWO BEDROOM UNIT		37.9% 329
THREE BEDROOM UNIT		3.6% 31
TOTAL UNITS		100% 868
COMMERCIAL AREA		2,895.7 sq. m. 31,169 sq. ft.
NOTATION SYMBOLS:		
(1) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.		
(2) INDICATES ASSEMBLY TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDULE.		
(3) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A300 SERIES.		
(4) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A300 SERIES.		
(5) - DETAIL NUMBER		
(6) - DETAIL REFERENCE PAGE		
(7) - DETAIL CROSS REFERENCE PAGE		
REVISIONS:		
No.	DESCRIPTION	DATE
1	ISSUED FOR OWNER / CONSULTANT REVIEW	Mar. 10, 22
ARCHITECT SEAL:		
CLIENT:		
 Theberge Developments Ltd.		
ARCHITECT:		
 Roderick LAHEY ARCHITECT INC. 56 Beech Street, Ottawa, Ontario K1S 3J6 1.613.724.9932 1.613.724.1209 www.rodericklahey.ca		
PROJECT TITLE:		
780 Baseline Road		
OTTAWA ONTARIO		
SHEET TITLE:		
SITE PLAN OVERALL		
DRAWN:	CHECKED:	
RV	T.Z.	
SCALE:	SHEET No.:	
1:300	SP-1	
PROJECT No.:		
2131		

CIVIL ENGINEER McINTOSH PERRY 115 Walgreen Road Ottawa, ON K0A 1L0 Tel: (613) 836-2184 Fax: (613) 836-3742 Email: r.freel@mcintoshperry.com	LEGAL DESCRIPTION PLAN OF SURVEY OF PART OF LOTS 4 and 14 REGISTERED PLAN 23 CITY OF OTTAWA Surveyed by Annis, O'Sullivan, Vollebakk Ltd.	PROJECT DEVELOPER Theberge Developments Ltd. 1600 Laperriere Ave Suite 205 Ottawa, ON K1Z 1B7 Tel: (613) 421-1515 Cell: (613) 880-5491 Email: joeytheberge@theberghomes.com Email: Jeremy@theberghomes.com
WIND / NOISE ENGINEER Gradient Wind Engineering 127 Walgreen Road, Ottawa, ON, Canada K0A 1L0 Tel: (613) 836-0934 Cell: (613) 226-5273 Email: joshua.foster@gradientwind.com	SURVEYOR FARLEY, SMITH & DENIS SURVEYING LTD. 30 Colonnade Road North, unit 275 Ottawa, Ontario K2E 7J6 Tel: (613) 727-8226 Fax: (613) 727-1823 Email: jleslie@bellnet.ca	URBAN PLANNER Fotenn Consultants Inc. 396 Cooper Street, Suite 300 Ottawa, ON Canada, K2P 2H7 Tel: (613) 730-5709 Fax: (613) 730-1136 E-Mail: alain@fotenn.com
TRANSPORTATION ENGINEER CGH TRANSPORTATION INC. 13 Markham Avenue Ottawa, ON K2G 3Z1 Tel: (343) 999-9117 Cell: (613) 697-3797 Email: Christopher.Gordon@CGHTransportation.com Email: john.kingsley@cgtransportation.com	KEY MAP 	

Baseline @ Fisher Ave. Tower "A"
Project Statistics

FLOOR/UNIT IDENTIFICATION	GFA CONSTRUCTION AREA	COMMERCIAL LEASABLE AREA	RESIDENTIAL LEASABLE AREA	COMMON / NON-SELLABLE AREA	FLOOR EFFICIENCY Leasable to Gross	Studio Unit	1 Bedroom Unit	2 Bedroom Unit	3 Bedroom Unit	TOTAL Units	# OF PARKING SPACES	# OF BICYCLE SPACES (INTERIOR)	City Of Ottawa GFA (Zoning)	City of Ottawa FLOOR EFFICIENCY
SUITE AREA - SQ.FT.													For Site Plan stats only	
P4	1										0	0		
P3	1										0	0		
P2	33,515										74	20		
P1	33,515										74	20		
Ground floor	16,186	5,810		10,376	35.90%						10	0	5,810	35.90%
2nd floor	17,452		14,405	3,047	82.54%	3	7	8	1	19			14,405	82.54%
3rd floor	17,452		14,405	3,047	82.54%	3	7	8	1	19			14,405	82.54%
4th floor	14,773		12,186	2,587	82.49%	0	10	5	2	17			12,186	82.49%
5th floor	13,804		11,361	2,443	82.30%	0	9	7	0	16			11,361	82.30%
6th floor	13,804		11,361	2,443	82.30%	0	9	7	0	16			11,361	82.30%
7th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
8th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
9th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
10th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
11th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
12th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
13th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
14th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
15th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
16th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
17th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
18th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
19th floor	8,396		6,773	1,623	80.67%	0	6	3	1	10			6,773	80.67%
20th floor	7,363		5,824	1,539	79.10%	0	3	4	1	8			5,824	79.10%
21th floor	7,363		5,824	1,539	79.10%	0	3	4	1	8			5,824	79.10%
22nd floor	7,363		5,824	1,539	79.10%	0	3	4	1	8			5,824	79.10%
23rd floor	6,217		4,712	1,505	75.79%	0	3	0	3	6			4,712	75.79%
24th floor	6,217		4,712	1,505	75.79%	0	3	0	3	6			4,712	75.79%
25th floor	6,217		4,712	1,505	75.79%	0	3	0	3	6			4,712	75.79%
Mechanical Level	3,000													0
TOTAL # OF UNITS						6	138	86	29	259	158	40		
BUILDING AREA (NO PARKING)	246,359	5,810	183,375	54,174	76.79%								189,185	76.79%
PARKING AREA	33,515													
TOTAL AREA	279,874													

Baseline @ Fisher Ave. Tower "B"
Project Statistics

FLOOR/UNIT IDENTIFICATION	GFA CONSTRUCTION AREA	COMMERCIAL LEASABLE AREA	RESIDENTIAL LEASABLE AREA	COMMON / NON-SELLABLE AREA	FLOOR EFFICIENCY Leasable to Gross	Studio Unit	1 Bedroom Unit	2 Bedroom Unit	3 Bedroom Unit	TOTAL Units	# OF PARKING SPACES	# OF BICYCLE SPACES (INTERIOR)	City Of Ottawa GFA (Zoning)	City of Ottawa FLOOR EFFICIENCY
SUITE AREA - SQ.FT.													For Site Plan stats only	
P4	1										0	0		
P3	1										0	0		
P2	36,604										88	40		
P1	36,604										88	300		
Ground floor	23,226	15,230		7,996	65.57%						10	0	15,230	65.57%
2nd floor	23,226		14,405	8,821	62.02%	1	9	13	0	23			18,848	81.15%
3rd floor	23,226		14,405	8,821	62.02%	1	9	13	0	23			18,848	81.15%
4th floor	23,226		12,186	11,040	52.47%	1	9	13	0	23			18,848	81.15%
5th floor	13,456		11,361	2,095	84.43%	1	11	4	0	16			10,815	80.37%
6th floor	13,456		11,361	2,095	84.43%	1	11	4	0	16			10,815	80.37%
7th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
8th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
9th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
10th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
11th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
12th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
13th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
14th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
15th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
16th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
17th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
18th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
19th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
20th floor	8,030		5,824	2,206	72.53%	1	5	4	0	10			6,438	80.17%
21th floor	8,030		5,824	2,206	72.53%	1	5	4	0	10			6,438	80.17%
22nd floor	8,030		5,824	2,206	72.53%	1	5	4	0	10			6,438	80.17%
23rd floor	8,030		4,712	3,318	58.68%	1	5	4	0	10			6,438	80.17%
24th floor	8,030		4,712	3,318	58.68%	1	5	4	0	10			6,438	80.17%
25th floor	8,030		4,712	3,318	58.68%	1	5	4	0	10			6,438	80.17%
Mechanical Level	4,000		4,000	0	100.00%								0	0.00%
-														
-														
-														
-														
TOTAL # OF UNITS						24	144	123	0	291	186	340		
BUILDING AREA (NO PARKING)	276,386	15,230	187,375	73,781	73.31%								215,726	78.05%
PARKING AREA	36,604													
TOTAL AREA	312,990													

**Baseline @ Fisher Ave. Phase 3
Project Statistics**

FLOOR/UNIT IDENTIFICATION	GFA CONSTRUCTION AREA	COMMERCIAL LEASABLE AREA	RESIDENTIAL LEASABLE AREA	COMMON / NON-SELLABLE AREA	FLOOR EFFICIENCY Leasable to Gross	Studio Unit	1 Bedroom Unit	2 Bedroom Unit	3 Bedroom Unit	TOTAL Units	# OF PARKING SPACES	# OF BICYCLE SPACES (INTERIOR)	City Of Ottawa GFA (Zoning)	City of Ottawa FLOOR EFFICIENCY
SUITE AREA - SQ.FT.													For Site Plan stats only	
P4	1										0	0		
P3	1										0	0		
P2	36,604										88	40		
P1	36,604										88	300		
Ground floor	15,375	10,129		5,246	65.88%						10	0	10,129	65.88%
2nd floor	15,375		14,405	970	93.69%	0	13	6	0	19			12,337	80.24%
3rd floor	15,375		14,405	970	93.69%	0	13	6	0	19			12,337	80.24%
4th floor	15,375		12,186	3,189	79.26%	1	11	6	0	18			12,337	80.24%
5th floor	14,071		11,361	2,710	80.74%	2	8	5	1	16			11,133	79.12%
6th floor	14,071		11,361	2,710	80.74%	2	8	5	1	16			11,133	79.12%
7th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
8th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
9th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
10th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
11th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
12th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
13th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
14th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
15th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
16th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
17th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
18th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
19th floor	8,030		6,773	1,257	84.35%	1	5	4	0	10			6,438	80.17%
20th floor	8,030		5,824	2,206	72.53%	1	5	4	0	10			6,438	80.17%
21th floor	8,030		5,824	2,206	72.53%	1	5	4	0	10			6,438	80.17%
22nd floor	8,030		5,824	2,206	72.53%	1	5	4	0	10			6,438	80.17%
23rd floor	8,030		4,712	3,318	58.68%	1	5	4	0	10			6,438	80.17%
24th floor	8,030		4,712	3,318	58.68%	1	5	4	0	10			6,438	80.17%
25th floor	8,030		4,712	3,318	58.68%	1	5	4	0	10			6,438	80.17%
26th floor	8,030		0	8,030	0.00%	1	5	4	0	10			6,438	80.17%
27th floor	8,030		0	8,030	0.00%	1	5	4	0	10			6,438	80.17%
28th floor	8,030		0	8,030	0.00%	1	5	4	0	10			6,438	80.17%
29th Penthouse	8,030			8,030		1	5	4	0	10			6,438	80.17%
Mechanical Level	4,000													0
TOTAL # OF UNITS						28	168	120	2	318	98	300		
BUILDING AREA (NO PARKING)	278,332	10,129	183,375	80,828	69.52%								217,480	78.14%
PARKING AREA	36,604													
TOTAL AREA	314,936													

Alison Gosling

To: Valic, Jessica
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

From: Valic, Jessica <jessica.valic@ottawa.ca>
Sent: April 13, 2022 10:24 AM
To: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Hi Alison,

Yes, what you've written below is correct.

Thanks,

Jessica

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: April 11, 2022 12:11 PM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

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

Hi Jessica,

Can you provide stormwater management criteria for this development?

C of 0.5, TC of 10 min, 5 year?

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

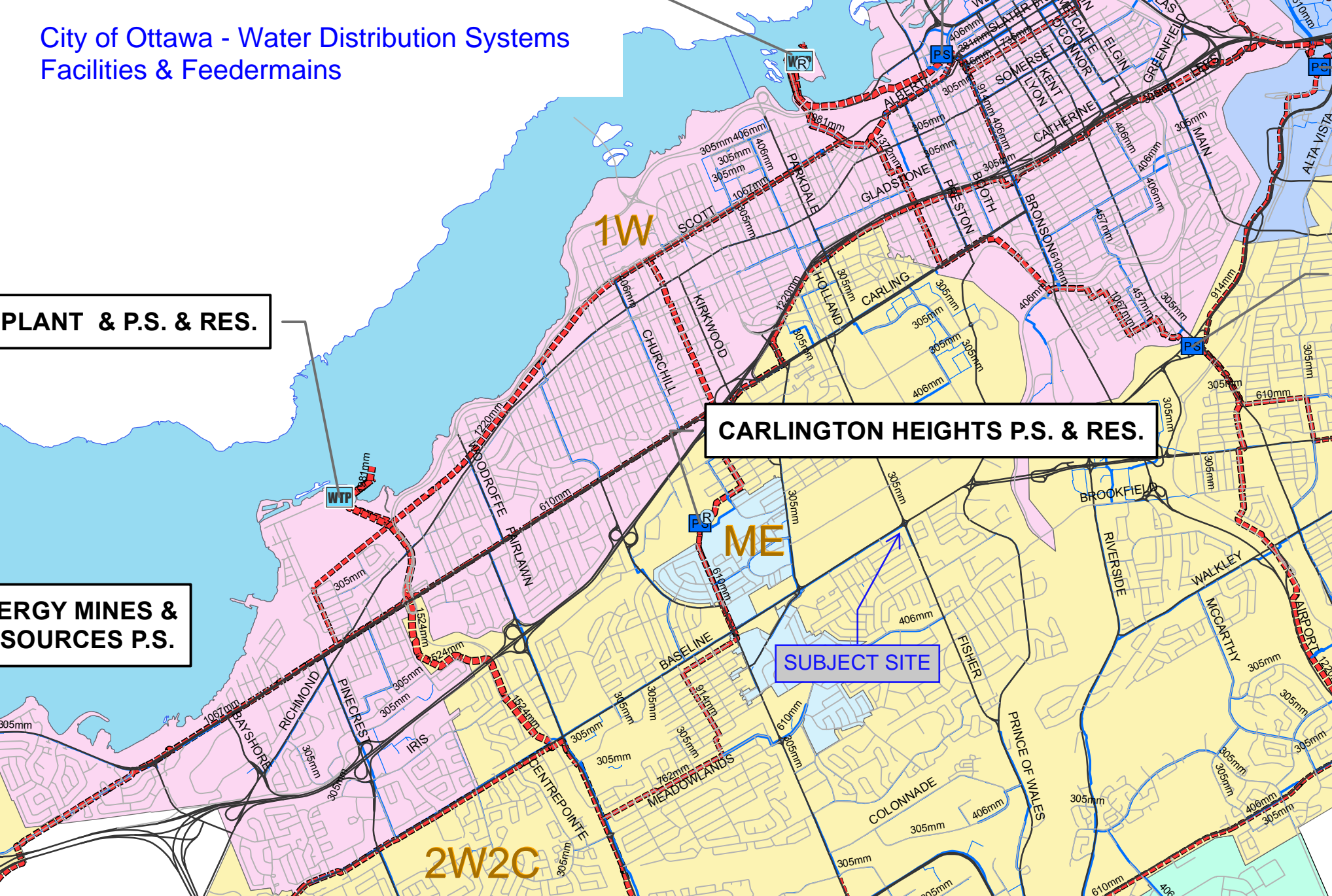
City of Ottawa - Water Distribution Systems Facilities & Feeder mains

PLANT & P.S. & RES.

**ENERGY MINES &
SOURCES P.S.**

CARLINGTON HEIGHTS P.S. & RES.

SUBJECT SITE



McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building A - Water Demands

Project:	780 Baseline Road - Building A
Project No.:	CCO-22-0952
Designed By:	AJG
Checked By:	AJG
Date:	May 13, 2022
Site Area:	1.43 gross ha

<u>Residential</u>	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	6 units	1.4	persons/unit
1 Bedroom Apartment	138 units	1.4	persons/unit
2 Bedroom Apartment	86 units	2.1	persons/unit
3 Bedroom Apartment	29 units	3.1	persons/unit
Average Apartment	units	1.8	persons/unit
Total Population	473 persons		
<u>Commercial</u>	540 m2		
<u>Industrial - Light</u>	m2		
<u>Industrial - Heavy</u>	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/(1000m ² /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	1.53	L/s
	Commerical/Industrial/ Institutional	0.02	L/s

McINTOSH PERRY

MAXIMUM DAILY DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	3	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	4.60	L/s
	Commerical/Industrial/ Institutional	0.03	L/s

MAXIMUM HOUR DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	4.5	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	6.90	L/s
	Commerical/Industrial/ Institutional	0.05	L/s

WATER DEMAND DESIGN FLOWS PER UNIT COUNT

CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

AVERAGE DAILY DEMAND	1.55	L/s
MAXIMUM DAILY DEMAND	4.62	L/s
MAXIMUM HOUR DEMAND	6.95	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building A - Fire Underwriters Survey

Project: 780 Baseline Road - Building A
 Project No.: CCO-22-0952
 Designed By: AJG
 Checked By: AJG
 Date: May 13, 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 Non-Combustible Construction

C 0.8 A 22,887.5 m²

Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area) 6,684.4 m²

*Unprotected Vertical Openings Assumed

Calculated Fire Flow

14,389.5 L/min

14,000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From Page 24 of the Fire Underwriters Survey:

Limited Combustible

-15%

Fire Flow

11,900.0 L/min

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Fully Supervised Sprinklered

-50%

Reduction

-5,950.0 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	Over 30 m	Fire Resistive - Non Combustible (Unprotected Openings)	24	29	696.0	0%
Exposure 2	Over 30 m	Wood frame	7	2	14.0	0%
Exposure 3	3.1 to 10	Wood frame	11	2	22.0	16%
Exposure 4	Over 30 m	Wood frame	11.5	1	11.5	0%
						% Increase* 16%

Increase*

1,904.0 L/min

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

Fire Flow

7,854.0 L/min

Fire Flow Required**

8,000.0 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-22-0952 - 780 Baseline Road - Building B - Water Demands

Project:	780 Baseline Road - Building B
Project No.:	CCO-22-0952
Designed By:	AJG
Checked By:	AJG
Date:	May 13, 2022
Site Area:	1.43 gross ha

<u>Residential</u>	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	24 units	1.4	persons/unit
1 Bedroom Apartment	144 units	1.4	persons/unit
2 Bedroom Apartment	123 units	2.1	persons/unit
3 Bedroom Apartment	units	3.1	persons/unit
Average Apartment	units	1.8	persons/unit
Total Population	494 persons		
<u>Commercial</u>	1415 m2		
<u>Industrial - Light</u>	m2		
<u>Industrial - Heavy</u>	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/(1000m ² /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	1.60	L/s
	Commerical/Industrial/ Institutional	0.05	L/s

McINTOSH PERRY

MAXIMUM DAILY DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	2.9	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	4.64	L/s
	Commerical/Industrial/ Institutional	0.07	L/s

MAXIMUM HOUR DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	4.3	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	6.88	L/s
	Commerical/Industrial/ Institutional	0.12	L/s

WATER DEMAND DESIGN FLOWS PER UNIT COUNT

CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

AVERAGE DAILY DEMAND	1.65	L/s
MAXIMUM DAILY DEMAND	4.71	L/s
MAXIMUM HOUR DEMAND	7.01	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building B - Fire Underwriters Survey

Project: 780 Baseline Road - Building B
 Project No.: CCO-22-0952
 Designed By: AJG
 Checked By: AJG
 Date: May 13, 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 Non-Combustible Construction

C 0.8 A 25,677.1 m²

Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area) 8,469.4 m²

*Unprotected Vertical Openings Assumed

Calculated Fire Flow

16,197.2 L/min
 16,000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From Page 24 of the Fire Underwriters Survey:
 Limited Combustible

-15%

Fire Flow

13,600.0 L/min

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Fully Supervised Sprinklered

-50%

Reduction

-6,800.0 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	Over 30 m	Fire Resistive - Non Combustible (Unprotected Openings)	N/A	N/A	N/A	0%
Exposure 2	20.1 to 30	Fire Resistive - Non Combustible (Unprotected Openings)	22	6	132.0	4%
Exposure 3	Over 30 m	Wood frame	22	1	22.0	0%
Exposure 4	10.1 to 20	Wood frame	9.5	2	19.0	10%
					% Increase*	14%

Increase*

1,904.0 L/min

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

Fire Flow
 Fire Flow Required**

8,704.0 L/min
 9,000.0 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-22-0952 - 780 Baseline Road - Building C - Water Demands

Project:	780 Baseline Road - Building C
Project No.:	CCO-22-0952
Designed By:	AJG
Checked By:	AJG
Date:	May 13, 2022
Site Area:	1.43 gross ha

<u>Residential</u>	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	28 units	1.4	persons/unit
1 Bedroom Apartment	168 units	1.4	persons/unit
2 Bedroom Apartment	120 units	2.1	persons/unit
3 Bedroom Apartment	2 units	3.1	persons/unit
Average Apartment	units	1.8	persons/unit
Total Population	533 persons		
<u>Commercial</u>	941 m2		
<u>Industrial - Light</u>	m2		
<u>Industrial - Heavy</u>	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/(1000m ² /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	1.73	L/s
	Commerical/Industrial/ Institutional	0.03	L/s

McINTOSH PERRY

MAXIMUM DAILY DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	2.5	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	4.32	L/s
	Commerical/Industrial/ Institutional	0.05	L/s

MAXIMUM HOUR DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	5.5	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	9.50	L/s
	Commerical/Industrial/ Institutional	0.08	L/s

WATER DEMAND DESIGN FLOWS PER UNIT COUNT

CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

AVERAGE DAILY DEMAND	1.76	L/s
MAXIMUM DAILY DEMAND	4.36	L/s
MAXIMUM HOUR DEMAND	9.58	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building C - Fire Underwriters Survey

Project: 780 Baseline Road - Building C
 Project No.: CCO-22-0952
 Designed By: AJG
 Checked By: AJG
 Date: May 13, 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 Non-Combustible Construction

C 0.8 A 25,857.9 m²

Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area) 6,338.4 m²

*Unprotected Vertical Openings Assumed

Calculated Fire Flow

14,012.1 L/min

14,000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From Page 24 of the Fire Underwriters Survey:

Limited Combustible

-15%

Fire Flow

11,900.0 L/min

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Fully Supervised Sprinklered

-50%

Reduction

-5,950.0 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	Over 30 m	Fire Resistive - Non Combustible (Unprotected Openings)	N/A	N/A	N/A	0%
Exposure 2	Over 30 m	Wood frame	7	2	14.0	0%
Exposure 3	Over 30 m	Fire Resistive - Non Combustible (Unprotected Openings)	49	25	1225.0	0%
Exposure 4	Over 30 m	Wood frame	13	1	13.0	0%
% Increase*						0%

Increase*

0.0 L/min

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

Fire Flow

5,950.0 L/min

Fire Flow Required**

6,000.0 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-22-0952 - 780 Baseline Road - Boundary Condition Unit Conversion

Project: 780 Baseline Road
Project No.: CCO-22-0952
Designed By: AJG
Checked By: AJG
Date: May 13, 2022

Boundary Conditions Unit Conversion

BASELINE ROAD & FISHER AVENUE - BUILDING A

Scenario	Height (m)	Elevation (m)	m H ₂ O	PSI	kPa
Avg. DD	132.4	84.0	48.4	68.9	474.8
Fire Flow (250 L/s or 15,000 L/min)	122.0	84.0	38.0	54.1	372.8
Peak Hour	124.3	84.0	40.3	57.3	395.3

BASELINE ROAD & FISHER AVENUE - BUILDING C (FORMERLY BUILDING B)

Scenario	Height (m)	Elevation (m)	m H ₂ O	PSI	kPa
Avg. DD	132.4	84.0	48.4	68.9	474.8
Fire Flow (283 L/s or 17,000 L/min)	120.7	84.0	36.7	52.2	360.0
Peak Hour	124.4	84.0	40.4	57.5	396.3

BASELINE ROAD & FISHER AVENUE - BUILDING B (FORMERLY BUILDING C)

Scenario	Height (m)	Elevation (m)	m H ₂ O	PSI	kPa
Avg. DD	132.4	84.0	48.4	68.9	474.8
Fire Flow (333.33 L/s or 20,000 L/min)	118.5	84.0	34.5	49.1	338.4
Peak Hour	124.4	84.0	40.4	57.5	396.3

Alison Gosling

From: Valic, Jessica <jessica.valic@ottawa.ca>
Sent: March 25, 2022 10:13 AM
To: Alison Gosling
Subject: RE: 22-4516 - 780 Baseline - Boundary Conditions
Attachments: 780 Baseline Road March 2022.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Alison,

Here are the boundary conditions. It has been flagged flag that the fire demands are high and there should be an investigation into ways of reducing the demands.

The following are boundary conditions, HGL, for hydraulic analysis at 780 Baseline Road (zone 2W2C) assumed to be connected to the 406 mm on Baseline Road and the 406 mm on Fisher Avenue (see attached PDF for location).

Minimum HGL: 124.3 m (Building A), 124.4 m (Building B), 124.4 m (Building C)

Maximum HGL: 132.4 m (Building A), 132.4 m (Building B), 132.4 m (Building C)

Max Day + Fire Flow (250 L/s): 122.0 m (Building A)

Max Day + Fire Flow (283 L/s): 120.7 m (Building B)

Max Day + Fire Flow (333 L/s): 118.5 m (Building C)

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.

Regards,

Jessica

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: March 16, 2022 4:18 PM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: 22-4516 - 780 Baseline - Boundary Conditions

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Good afternoon Jessica,

I hope you're doing well!

We would like to request boundary conditions for 780 Baseline Road. The proposed development contains one residential building and two mixed-use buildings.

- Building A is anticipated to connect to the 406 mm diameter watermain within Fisher Ave. Building A contains 266 residential units.
- Building B is anticipated to connect to the 406 mm diameter watermain within Baseline Road. Building B contains 318 residential units and 801 m2 of commercial space.
- Building C is anticipated to connect to the 406 mm diameter watermain within Baseline Road. Building C contains 291 residential units and 1410 m2 of commercial space.

	Average Daily Demand (L/s)	Maximum Daily Demand (L/s)	Peak Hour Demand (L/s)	FUS
Building A	1.55	4.66	6.99	15,000
Building B	1.88	4.68	10.28	17,000
Building C	1.74	4.31	9.46	20,000

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

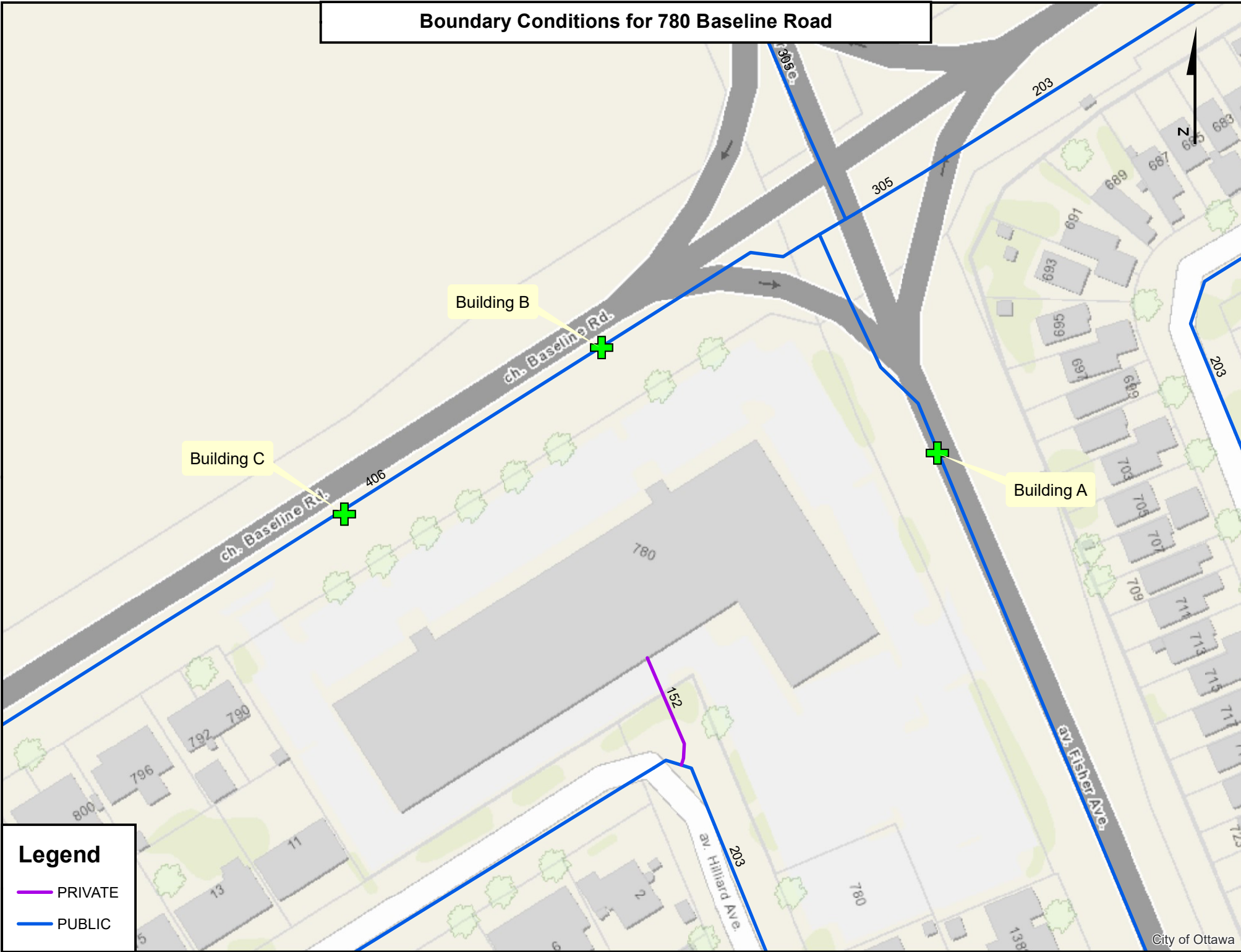


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Boundary Conditions for 780 Baseline Road



APPENDIX D
SANITARY CALCULATIONS

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building A - Sanitary Demands

Project:	780 Baseline Road - Building A		
Project No.:	CCO-22-0952		
Designed By:	AJG		
Checked By:	AJG		
Date:	May 12, 2022		
Site Area	0.48	Gross ha	*1/3 of Site Area
Bachelor	6	1.40	Persons per unit
1 Bedroom	138	1.40	Persons per unit
2 Bedroom	86	2.10	Persons per unit
3 Bedroom	29	3.10	Persons per unit
Total Population	473	Persons	
Commercial Area	540	m ²	

DESIGN PARAMETERS

Institutional/Commercial Peaking Factor	1	
Residential Peaking Factor	3.39	* 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

EXTRANEIOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.02
Wet	0.13
Total	0.16

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	473	1.53
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)	539.77	0.02
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

McINTOSH PERRY

AVERAGE RESIDENTIAL FLOW	1.53	L/s
PEAK RESIDENTIAL FLOW	5.20	L/s
AVERAGE ICI FLOW	0.02	L/s
PEAK INSTITUTIONAL/COMMERCIAL FLOW	0.02	L/s
PEAK INDUSTRIAL FLOW	0.00	L/s
TOTAL PEAK ICI FLOW	0.02	L/s

TOTAL SANITARY DEMAND

TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	1.57	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	5.24	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	5.37	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building B - Sanitary Demands

Project:	780 Baseline Road - Building B		
Project No.:	CCO-22-0952		
Designed By:	AJG		
Checked By:	AJG		
Date:	May 12, 2022		
Site Area	0.48	Gross ha	*1/3 of Site Area
Bachelor	24	1.40	Persons per unit
1 Bedroom	144	1.40	Persons per unit
2 Bedroom	123	2.10	Persons per unit
3 Bedroom	0	3.10	Persons per unit
Total Population	494	Persons	
Commercial Area	1415	m ²	

DESIGN PARAMETERS

Institutional/Commercial Peaking Factor	1	
Residential Peaking Factor	3.38	* 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

EXTRANEIOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.02
Wet	0.13
Total	0.16

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	494	1.60
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)	1414.91	0.05
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

McINTOSH PERRY

AVERAGE RESIDENTIAL FLOW	1.60	L/s
PEAK RESIDENTIAL FLOW	5.41	L/s
AVERAGE ICI FLOW	0.05	L/s
PEAK INSTITUTIONAL/COMMERCIAL FLOW	0.05	L/s
PEAK INDUSTRIAL FLOW	0.00	L/s
TOTAL PEAK ICI FLOW	0.05	L/s

TOTAL SANITARY DEMAND

TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	1.67	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	5.48	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	5.62	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building C - Sanitary Demands

Project:	780 Baseline Road - Building C		
Project No.:	CCO-22-0952		
Designed By:	AJG		
Checked By:	AJG		
Date:	May 12, 2022		
Site Area	0.48	Gross ha	*1/3 of Site Area
Bachelor	28	1.40	Persons per unit
1 Bedroom	168	1.40	Persons per unit
2 Bedroom	120	2.10	Persons per unit
3 Bedroom	2	3.10	Persons per unit
Total Population	533	Persons	
Commercial Area	941	m ²	

DESIGN PARAMETERS

Institutional/Commercial Peaking Factor	1	
Residential Peaking Factor	3.37	* 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

EXTRANEIOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.02
Wet	0.13
Total	0.16

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	533	1.73
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)	941.01	0.03
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

McINTOSH PERRY

AVERAGE RESIDENTIAL FLOW	1.73	L/s
PEAK RESIDENTIAL FLOW	5.82	L/s
AVERAGE ICI FLOW	0.03	L/s
PEAK INSTITUTIONAL/COMMERCIAL FLOW	0.03	L/s
PEAK INDUSTRIAL FLOW	0.00	L/s
TOTAL PEAK ICI FLOW	0.03	L/s

TOTAL SANITARY DEMAND

TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	1.78	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	5.87	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	6.00	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Total - Sanitary Demands

Project:	780 Baseline Road - Total		
Project No.:	CCO-22-0952		
Designed By:	AJG		
Checked By:	AJG		
Date:	May 12, 2022		
Site Area	1.43	Gross ha	
Bachelor	58	1.40	Persons per unit
1 Bedroom	450	1.40	Persons per unit
2 Bedroom	329	2.10	Persons per unit
3 Bedroom	31	3.10	Persons per unit
Total Population	1499	Persons	
Commercial Area	2896	m ²	

DESIGN PARAMETERS

Institutional/Commercial Peaking Factor	1	
Residential Peaking Factor	3.14	* 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

EXTRANEIOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.07
Wet	0.40
Total	0.47

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	1499	4.86
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)	2895.69	0.09
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

McINTOSH PERRY

AVERAGE RESIDENTIAL FLOW	4.86	L/s
PEAK RESIDENTIAL FLOW	15.27	L/s
AVERAGE ICI FLOW	0.09	L/s
PEAK INSTITUTIONAL/COMMERCIAL FLOW	0.09	L/s
PEAK INDUSTRIAL FLOW	0.00	L/s
TOTAL PEAK ICI FLOW	0.09	L/s

TOTAL SANITARY DEMAND

TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	5.02	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	15.44	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	15.84	L/s

Alison Gosling

From: Valic, Jessica <jessica.valic@ottawa.ca>
Sent: April 4, 2022 10:05 AM
To: Alison Gosling
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Alison,

There is no issue with the additional flow.

Regards,

Jessica

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: March 31, 2022 11:19 AM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

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

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

Hi Jessica,

Did you get a response on this?

Thanks in advance,

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

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: March 18, 2022 8:14 AM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: 22-4516 - 780 Baseline - Sanitary Capacity

Hi Jessica,

As discussed, can the City please assess the capacity of the local sanitary sewers for the contemplated development at 780 Baseline Road?

- Building A is anticipated to be serviced via the municipal sanitary sewer that crosses through the site, tributary to the 450mm sanitary sewer within Fisher Ave.
- Building B is anticipated to be serviced via either the municipal sanitary sewer that crosses through the site or the 300mm sanitary sewer within Baseline Rd.
- Building C is anticipated to be serviced via the 300mm sanitary sewer within Baseline Rd.

	Building A	Building B	Building C	Total
Average Dry Weather Flow	1.57	1.91	1.77	5.24
Peak Dry Weather Flow	5.28	6.28	5.79	16.12
Peak Wet Weather Flow	5.41	6.40	5.92	16.50

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



Platinum member

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APPENDIX G
STORMWATER MANAGEMENT CALCULATIONS

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - 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	1.429	12,996.00	0.90	0.00	0.60	1,290.00	0.20	0.84	0.93

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	1.429	0.84	0.93	10	76.8	104.2	178.6	255.25	346.27	661.12
Total	1.429							255.25	346.27	661.12

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	1.286	8,721.00	0.90	0.00	0.60	4,136.40	0.20	0.67	0.76
B2	0.143	969.00	0.90	0.00	0.60	459.60	0.20	0.67	0.76

Controlled
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	1.286	0.67	0.76	10	104.2	178.6	251.31	484.24
B2	0.143	0.67	0.76	10	104.2	178.6	27.92	53.80
Total	1.429						279.23	538.04

Required Restricted Flow

Drainage Area	Area (ha)	C 5-Year	Tc (min)	I (mm/hr)	Q (L/s)
				5-Year	5-Year
A1	1.429	0.50	10	104.2	206.90
Total	1.429				206.90

Post-Development Restricted Runoff Calculations

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	251.31	484.24	79.46	153.10	109.87	210.98
B2	27.92	53.80	27.92	53.80		
Total	279.23	538.04	107.38	206.90	109.87	210.98

Restricted
Unrestricted

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Runoff Calculations

Storage Requirements for Area B1

1 of 2

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	251.31	79.46	171.86	103.11
15	83.6	201.54	79.46	122.08	109.87
20	70.3	169.44	79.46	89.99	107.99
25	60.9	146.88	79.46	67.42	101.14
30	53.9	130.07	79.46	50.62	91.11

Maximum Storage Required 5-year = 109.9 m³

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	484.24	153.10	331.14	198.68
15	142.9	387.52	153.10	234.42	210.98
20	120.0	325.30	153.10	172.20	206.64
25	103.8	281.62	153.10	128.53	192.79
30	91.9	249.14	153.10	96.04	172.87
35	82.6	223.95	153.10	70.85	148.78
40	75.1	203.79	153.10	50.69	121.66
45	69.1	187.26	153.10	34.16	92.24
50	64.0	173.44	153.10	20.34	61.02
55	59.6	161.69	153.10	8.60	28.37

Maximum Storage Required 100-year = 211.0 m³

5-Year Storm Event Storage Summary

Storage Available (m³) = 109.9 *

Storage Required (m³) = 109.9

100-Year Storm Event Storage Summary

Storage Available (m³) = 211.0 *

Storage Required (m³) = 211.0

**APPENDIX H
CITY OF OTTAWA DESIGN CHECKLIST**

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)
<input type="checkbox"/> Executive Summary (for larger reports only).	N/A
<input type="checkbox"/> Date and revision number of the report.	On Cover
<input type="checkbox"/> Location map and plan showing municipal address, boundary, and layout of proposed development.	Appendix A
<input type="checkbox"/> Plan showing the site and location of all existing services.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> Summary of pre-consultation meetings with City and other approval agencies.	Appendix B
<input type="checkbox"/> 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 defensible design criteria.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
<input type="checkbox"/> Statement of objectives and servicing criteria.	3.0 Pre-Consultation Summary

<input type="checkbox"/> Identification of existing and proposed infrastructure available in the immediate area.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Proposed phasing of the development, if applicable.	N/A
<input type="checkbox"/> Reference to geotechnical studies and recommendations concerning servicing.	Section 2.0 Background Studies, Standards and References
<input type="checkbox"/> All preliminary and formal site plan submissions should have the following information: <ul style="list-style-type: none"> ○ 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)
<input type="checkbox"/> Confirm consistency with Master Servicing Study, if available	N/A
<input type="checkbox"/> Availability of public infrastructure to service proposed development	N/A
<input type="checkbox"/> Identification of system constraints	N/A
<input type="checkbox"/> Identify boundary conditions	Appendix C
<input type="checkbox"/> Confirmation of adequate domestic supply and pressure	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	N/A
<input type="checkbox"/> Address reliability requirements such as appropriate location of shut-off valves	N/A
<input type="checkbox"/> Check on the necessity of a pressure zone boundary modification.	N/A
<input type="checkbox"/> 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

<input type="checkbox"/> 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
<input type="checkbox"/> Description of off-site required feeder mains, 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
<input type="checkbox"/> Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Appendix C
<input type="checkbox"/> 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)
<input type="checkbox"/> 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
<input type="checkbox"/> Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 5.2 Proposed Sanitary Sewer

<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 5.2 Proposed Sanitary Sewer
<input type="checkbox"/> 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
<input type="checkbox"/> Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
<input type="checkbox"/> Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> Special considerations such as contamination, corrosive environment etc.	N/A

4.4 Development Servicing Report: Stormwater Checklist

Criteria	Location (if applicable)
<input type="checkbox"/> 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
<input type="checkbox"/> Analysis of available capacity in existing public infrastructure.	N/A
<input type="checkbox"/> A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Set-back from private sewage disposal systems.	N/A
<input type="checkbox"/> Watercourse and hazard lands setbacks.	N/A
<input type="checkbox"/> Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A
<input type="checkbox"/> Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
<input type="checkbox"/> 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

<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Any proposed diversion of drainage catchment areas from one outlet to another.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Identification of potential impacts to receiving watercourses	N/A
<input type="checkbox"/> Identification of municipal drains and related approval requirements.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A

<input type="checkbox"/> Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	N/A
<input type="checkbox"/> 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
<input type="checkbox"/> 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)
<input type="checkbox"/> 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
<input type="checkbox"/> Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A
<input type="checkbox"/> Changes to Municipal Drains.	N/A
<input type="checkbox"/> 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)
<input type="checkbox"/> Clearly stated conclusions and recommendations	Section 8.0 Summary Section 9.0 Recommendations
<input type="checkbox"/> 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
<input type="checkbox"/> All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	All are stamped