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- Environmental Restoration

39 Years

Proposed Multi-Tower Residential Development

2026 Scott Street

Assessment of Adequacy of Public Services Report

PROPOSED MULTI-TOWER DEVELOPMENT
2026 SCOTT STREET

ASESSMENT OF ADEQUACY OF PUBLIC SERVICES REPORT

Prepared by:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Kanata, Ontario
K2M 1P6

April 6, 2022

Ref: R-2021-163
Novatech File No. 121302

NOVATECH
Engineers, Planners & Landscape Architects

April 6, 2022

Morley Hoppner Inc.
1818 Bradley Side Road,
Ottawa, Ontario
K0A 1L0

Attention: Mr. Ken Hoppner

Dear Mr. Hoppner:

Re: Assessment of Adequacy of Public Services Report
Proposed Multi-Tower Development
2026 Scott Street, Ottawa, ON
Novatech File No.: 121302

Enclosed is a copy of the 'Assessment of Adequacy of Public Services Report' for the proposed multi-tower residential development located at 2026 Scott Street, in the City of Ottawa. The purpose of this report is to demonstrate that the proposed development can be serviced by the existing municipal infrastructure adjacent to the subject site. This report is being submitted in support of a Zoning By-Law Amendment application.

Please contact the undersigned, should you have any questions or require additional information.

Yours truly,

NOVATECH

François Thauvette, P. Eng.
Senior Project Manager

FT/sm

cc: Shawn Wessel (City of Ottawa)
Pat Bisson (Hobin)

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

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1.0 INTRODUCTION

Novatech has been retained by Morley Hoppner Ltd. to assess the adequacy of the existing public services related to the proposed re-development of the 2026 Scott Street property. The purpose of this report is to demonstrate that the proposed development can be serviced by the existing municipal infrastructure. This report is being submitted in support of a Zoning By-Law Amendment application.

1.1 Location and Site Description

The 0.663-hectare site currently consists of five (5) properties that will be merged, including the Granite Curling Club (2026 Scott Street), existing commercial properties (2006 and 2020 Scott Street) as well as two residential properties to the southeast (314 and 318 Athlone Avenue). The subject site is located on the south side of Scott Street, west of Athlone Avenue, and is bordered by other residential and commercial developments. The Ottawa Gymnastics Centre (294 Elmgrove Avenue) abuts the subject site to the south. The legal description of the site based on the Geowarehouse is designated as Part of Lot 31, Concession 1, being as in CR312969, CR570140 and Parts 1 and 2 on Plan 5R10777; Part of Lot 60 on Plan 263, and Parts 1 and 2 on Plan 5R6295; Lots 61 and 62 on Plan 263, City of Ottawa.

Figure 1: Aerial View of the Subject Site

Image Source: geoOttawa (City of Ottawa)

1.2 Pre-Consultation Information

A pre-consultation meeting was held with the City of Ottawa on December 21, 2021, at which time the client was advised of the general submission requirements. The Rideau Valley Conservation Authority (RVCA) was also consulted regarding the proposed development. Refer to **Appendix A** for a summary of the correspondence related to the proposed development.

1.3 Proposed Development

The proposed development will consist of three (3) residential towers with podiums. Tower 1 will be 20-storeys in height, with Tower 2 at 36-storeys and Tower 3 in the northeast corner at 40-storeys in height. The development will include underground parking with site entrances off Scott Street and Athlone Avenue. A central entrance is also being proposed to allow for a safe drop-off area as well as a fire route to Tower 1 at the rear of the property. The remainder of the site will consist of outdoor amenity space.

2.0 SITE SERVICING

The objective of this report is to demonstrate that proper sewage outlets (sanitary and storm) as well as a suitable domestic water supply and appropriate fire protection are available for the proposed development. The servicing criteria, the expected sewage flows, and water demands are to conform to the requirements of the City of Ottawa municipal design guidelines for sewer and water distribution systems.

Stormwater runoff from the site will continue to be directed to the nearby Ottawa River, via the municipal storm sewer in Scott Street. On-site stormwater management will be implemented to meet the requirements of the City of Ottawa and Rideau Valley Conservation Authority.

2.1 Sanitary Servicing

The existing buildings are currently being serviced by the local 300mm dia., 375mm dia. and 450mm dia. sanitary sewers in Athlone Avenue and Scott Street. The local sanitary sewer flows west along Scott Street and discharges into the 1500mm dia. West Nepean Collector sewer, directly north of the subject site.

Under post-development conditions, the proposed development will continue to be serviced by the local sanitary sewer in Scott Street. The theoretical peak sanitary flow from the proposed development has been calculated based on criteria in Section 4 of the City of Ottawa Sewer Design Guidelines. Refer to the table below for a summary of the preliminary sanitary sewage flows and to **Appendix B** for detailed calculations.

Proposed Residential Development	Unit Count	Design Population	Residential Peak Flow (L/s)	Infiltration Allowance (L/s)	Sanitary Peak Flow (L/s)
Tower 1	198	302	3.39	0.07	3.5
Tower 2	344	535	5.84	0.07	5.9
Tower 3	322	532	5.81	0.08	5.9
Total	**864**	**1,369**	**15.0**	**0.22**	**15.2**

*Represents rounded values

The existing 450mm dia. concrete sanitary sewer in Scott Street (west of the connection to the West Nepean Collector) is approximately 2.9m deep, with an invert elevation of 59.9m+/- and a top of pipe elevation of 60.4m+/-. The roadway elevation is approximately 63.25m+/- at the proposed service connection location.

It is anticipated that the 450mm dia. sanitary sewer in Scott Street has adequate capacity to accommodate the proposed development, as site flows travel approximately 16m before being discharged in the West Nepean Collector on the north side of Scott Street. Refer to **Figure 2** showing the existing sanitary sewer infrastructure and conceptual servicing layout.

Figure 2: Conceptual Sanitary Servicing Layout

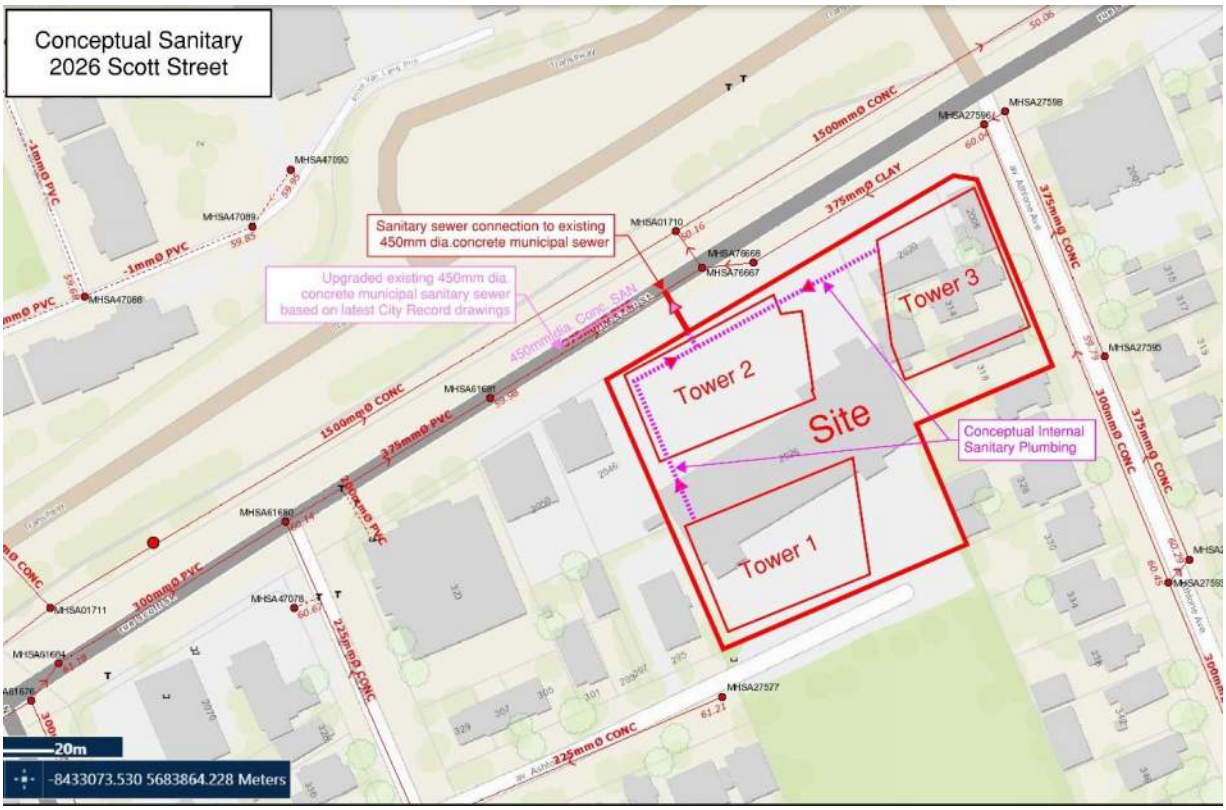

Image Source: geoOttawa (City of Ottawa)

The sanitary sewage calculations and servicing design will be refined as part of the Site Plan Control application to the City of Ottawa.

2.2 Water Supply for Domestic Use and Firefighting

The subject site is located within the City of Ottawa 1W pressure zone. The existing buildings are currently being serviced by the local 200mm dia. PVC watermain on the south side of Scott Street and the 150mm UCI watermain in Athlone Avenue. A 1220mm dia. (backbone) watermain is also running along the north side of Scott Street, however the proposed development will not be allowed to connect into this large diameter feeder main.

Under post-development conditions, the proposed site will continue to be serviced by the 200mm dia. local municipal watermain in Scott Street. The anticipated daily water demands will be greater than 50m^3/day (0.58 L/s), therefore, the proposed development will require two (2) water supplies for redundancy purposes. Refer to **Figure 3** showing the existing watermain infrastructure and conceptual servicing layout.

Figure 3: Conceptual Water Servicing Layout

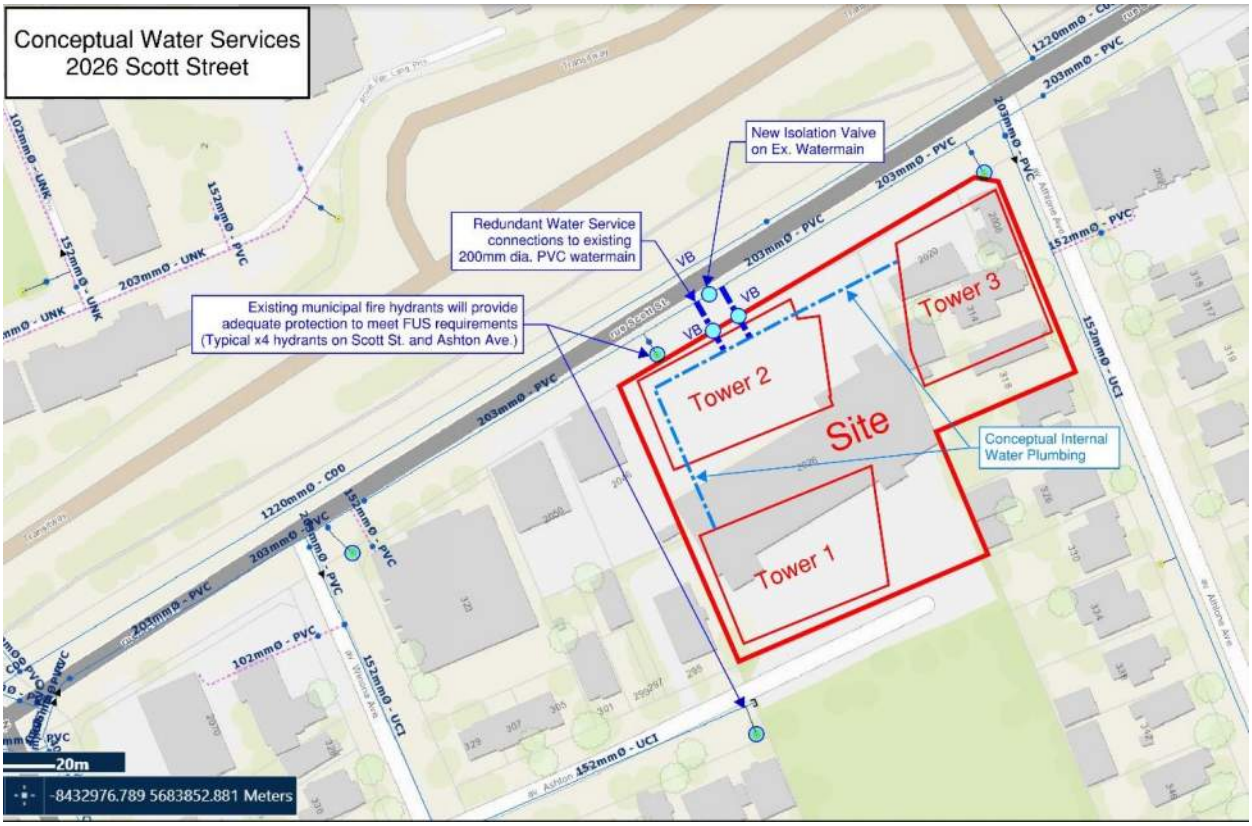

Image Source: geoOttawa (City of Ottawa)

Preliminary water demand and fire flow calculations have been prepared for the proposed development based on criteria in Section 4 of the City of Ottawa Design Guidelines for Water Distribution Systems. The fire flows are calculated using the Fire Underwriters Survey (FUS) method, based on general building assumptions, including building footprint, construction materials and fully sprinklered buildings. Refer to the table below for a summary of the water demands and fire flows and to **Appendix C** for detailed calculations.

Proposed Residential Development	Unit Count	Design Population	Avg. Daily Demand (L/s)	Max. Daily Demand (L/s)	Peak Hour Demand (L/s)	FUS Fire Flow (L/s)
Tower 1	198	302	1.0	2.4	5.4	217
Tower 2	344	535	1.7	4.3	9.5	200
Tower 3	322	532	1.7	4.3	9.5	167
Total	**864**	**1,369**	**4.4**	**11.1**	**24.4**	**217 (Max)**

*Represents rounded values

The following design criteria were taken from Section 4.2.2 – 'Watermain Pressure and Demand Objectives' of the City of Ottawa Design Guidelines for Water Distribution:

- Normal operating pressures are to range between 345 kPa (50 psi) and 483 kPa (70 psi) under Max Day demands

- Minimum system pressures are to be 276 kPa (40 psi) under Peak Hour demands
- Minimum system pressures are to be 140 kPa (20 psi) under Max Day + Fire Flow demands

The following table summarizes preliminary hydraulic analysis results based on municipal watermain boundary conditions provided by the City, assuming two(2) water supplies, as indicated in the correspondence from the City of Ottawa.

Municipal Watermain Boundary Condition	Boundary Condition Head of Water (m)	Normal Operating Pressure Range (psi)	Anticipated WM Pressure (psi)*
Assuming Two (2) Connections to the 200mm dia. WM in Scott Street			
Minimum HGL (Peak Hour Demand)	108.3 m	40 psi (min.)	~ 64 psi
Maximum HGL (Max Day Demand)	115.0 m	50-70 psi	~ 74 psi
HGL Max Day + Fire Flow 167 L/s 183 L/s 217 L/s	 101.6 m 100.1 m 96.4 m	20 psi (min.)	 ~ 55 psi ~ 52 psi ~ 47 psi

*Based on an approximate elevation of 63.2m at the WM connection point in Scott Street.

Based on preliminary calculations and correspondence received from the City of Ottawa, it is anticipated that the pressure within the municipal watermain network will be adequate, and possibly exceed the upper end of the normal operating pressure range during the Max Day Conditions. Pressure reducing valves (PRV) may be required given the relatively high system pressures. Given the height of the proposed buildings, it is also anticipated that booster pumps will be required to provide adequate water pressure to the upper floors.

A multi-hydrant approach to firefighting will be required to supply the fire flow calculated above. Based on a review of the geoOttawa website, there appear to be six (6) Class AA (blue bonnet) municipal fire hydrants within 150m of the site. Based on the City of Ottawa Technical Bulletin ISTB-2018-02, Class AA (blue bonnet) hydrants within 75m of the building should provide a maximum capacity of 95 L/s each (at a pressure of 20 PSI) while hydrants between 75m and 150m should provide a maximum capacity of 63 L/s (at a pressure of 20 PSI). The combined theoretical maximum flow from these hydrants will exceed the Max Day + Fire Flow requirements of the proposed development. This multi-hydrant approach to firefighting is in accordance with the City of Ottawa Technical Bulletin ISTB-2018-02.

The following table summarizes the theoretical combined fire flow available from the nearby fire hydrants and compares it to the fire flow demands based on FUS calculations.

Building	(FUS) Fire Flow Demand (L/s)	Fire Hydrant(s) within 75m (~ 95 L/s each)	Fire Hydrant(s) within 150m (~ 63 L/s each)	Theoretical Combined Available Fire Flow (L/s)
Tower 1	217	1	2	**221**
Tower 2	200	2	2	**316**
Tower 3	167	3	1	**348**

Refer to **Appendix C** for preliminary domestic water demand, FUS fire flow calculations and correspondence with the City of Ottawa related to the municipal watermain network and fire flow available for the proposed development. An updated analysis will need to be provided as part of the Site Plan Control application to the City of Ottawa.

2.3 Storm Drainage and Stormwater Management

Storm drainage from the existing properties is currently being directed towards the local storm sewers in Scott Street and Athlone Avenue. The local storm sewers discharge into the West Transit Way Storm Trunk Sewer and outlet into the Ottawa River (just west of Onigam Street) approximately 2.9 km downstream of the subject site.

Under post-development conditions, storm flows from the site will be directed to the nearby storm sewers in Scott Street, which include a 900mm dia. concrete sewer along the western side of the Scott Street frontage and/or a 1200mm dia. concrete sewer along the eastern side of the Scott Street frontage. Refer to **Figure 4** showing the existing (local) storm sewer infrastructure and conceptual servicing layout. **Figure 4: Conceptual Storm Servicing Layout**

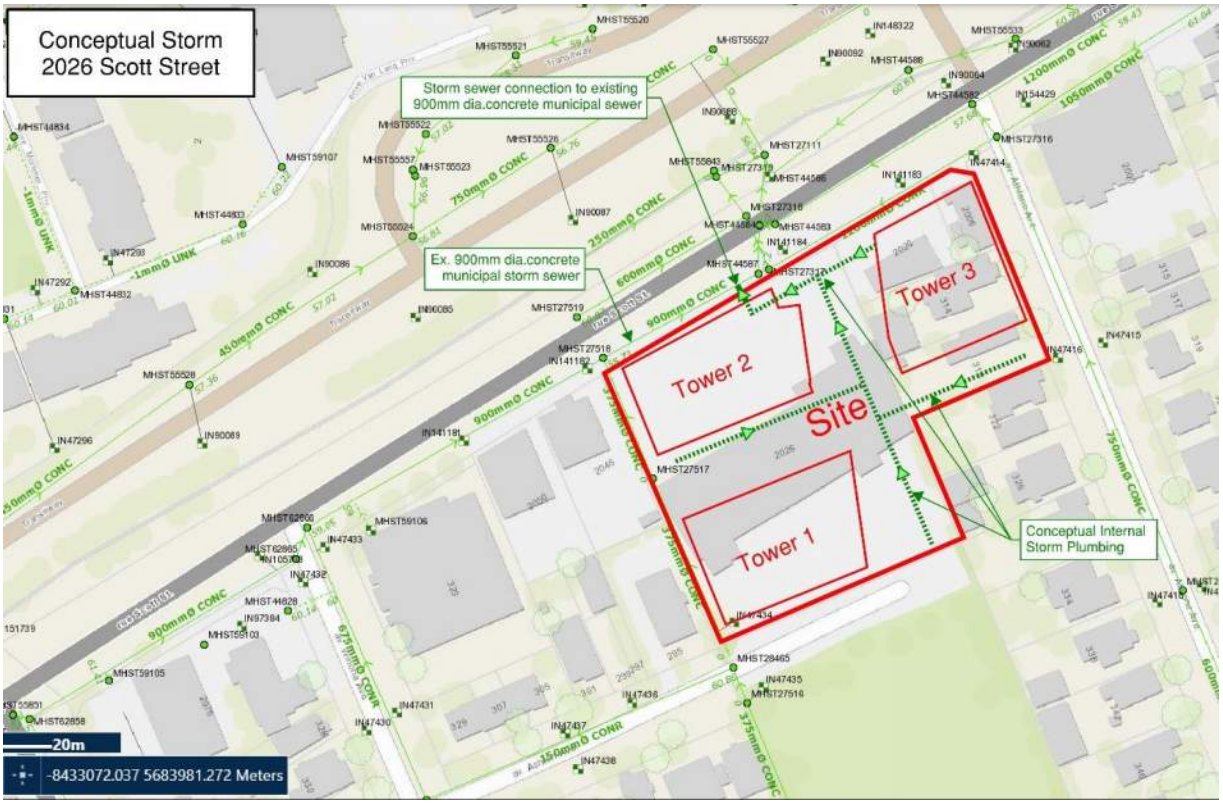

Image Source: geoOttawa (City of Ottawa)

The 900mm dia. storm sewer in Scott Street is approximately 3.5m deep, with a top of pipe elevation of 59.7m+/- and an approximate invert elevation of 58.7m+/-. The roadway elevation is approximately 63.2m+/- at the proposed service connection location. The post-development stormwater flows from the site may need to be pumped to the municipal outlet sewer, however this will be determined at the detailed design stage. If storm flows are pumped, the pump(s) will provide the necessary backflow protection. Alternatively, a backflow preventor will be required to ensure the proposed buildings are protected from any potential backflow in the municipal storm sewer system.

On-site stormwater management (SWM) will be required. A detailed SWM design and report, including on-site stormwater quantity control measures will be prepared as part of the Site Plan Control application. Based on correspondence from the RVCA on-site stormwater quality control measures will not be required due to the nature of the development, the fact that parking will be underground and that the distance to the stormwater outlet is >2km downstream. The SWM criteria have been provided during pre-consultation meetings with the City of Ottawa and the RVCA.

Based on correspondence from the City of Ottawa the allowable release rate from the site has been calculated using the Rational Method, with a maximum allowable runoff coefficient equivalent to existing conditions, but in no case greater than C=0.5, a time of concentration no less than 10 minutes and a 5-year rainfall intensity from City of Ottawa IDF curves. Based on a 5-year weighted runoff coefficient (C_w=0.50) and a time of concentration of 10 mins., the allowable release rate for the site was calculated using the Rational Method to be approximately 96.0 L/s. The portion of the total allowable release rate will have to be allotted to the various catchment areas on site, depending on the relative size and imperviousness as well as the potential storage available within the sub-catchment areas. For the purpose of this report (and preliminary calculations), the total site area (0.663 ha) was divided into the following sub-catchment areas with an estimated allotted allowable release rate:

- A-1: Uncontrolled direct runoff (~0.08 ha) – Approximate 100-year release rate = 32 L/s
- A-2: Controlled Flow from Tower 1 Roof (~0.10 h) – Allotted 100-year release rate = 12 L/s
- A-3: Controlled Flow from Tower 2 Roof (~0.10 h) – Allotted 100-year release rate = 12 L/s
- A-4: Controlled Flow from Tower 3 Roof (~0.10 ha) – Allotted 100-year release rate = 12 L/s
- A-5: Controlled Flow from remainder of site (~0.27 ha) – Allotted 100-year release rate = 15 L/s

Refer to **Figure 5** showing the conceptual stormwater management plan and approach to on-site stormwater management.

Figure 5: Conceptual Stormwater Management Plan

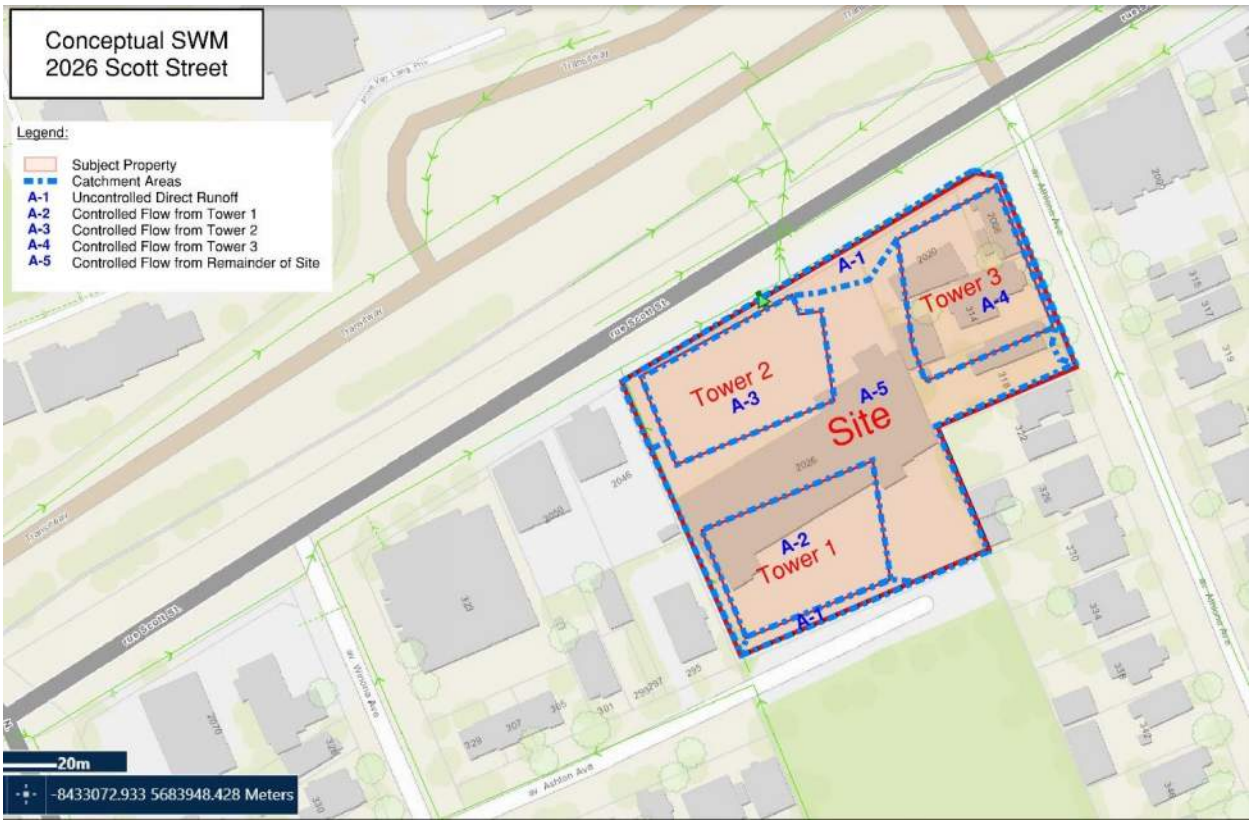

Image Source: geoOttawa (City of Ottawa)

The following table compares the post-development flows from the proposed development to both the uncontrolled pre-development flows and to the allowable release rate specified by the City of Ottawa, for both the 5-year and the 100-year design events. Refer to **Appendix D** for preliminary SWM calculations and to **Appendix A** for a copy of the correspondence from the City of Ottawa.

Preliminary Stormwater Flow Comparison Table

Design Event	Drainage Areas A-1 to A-5							
	Pre-Development Conditions		Post-Development Conditions					
	Uncontrolled Flow (L/s)	Allowable Release Rate (L/s)	A-1 Flow (L/s)	A-2 Flow (L/s)	A-3 Flow (L/s)	A-4 Flow (L/s)	A-5 Flow (L/s)	Total Flow (L/s)*
5-Yr	167.6	96.0	16.8	12.0	12.0	12.0	15.0	67.8
100-Yr	319.5		32.3	12.0	12.0	12.0	15.0	83.3

*Reduced flow compared to pre-development uncontrolled conditions.

It is anticipated that the use of control flow roof drains and inlet control devices (ICD) will be required to control flows from the proposed building roofs and/or internal SWM storage tank(s) from catchment areas A-2 to A-5.

The following table summarizes the approximate ponding volume requirements for the various sub-catchment areas, based on the allotted release rates.

Preliminary Stormwater Storage Requirements Table

Design Event	Post-Development Storage Volume Requirements					
	A-1 Direct Runoff	A-2 Tower 1 (m^3)	A-3 Tower 2 (m^3)	A-4 Tower 3 (m^3)	A-5 Rest of Site (m^3)	A-1 to A-5 Total Site (m^3)
5-Yr	-	~ 10	~ 9	~ 10	~ 32	~ 61
100-Yr	-	~ 28	~ 27	~ 29	~ 98	~ 182

Represents preliminary calculations only.

Refer to **Appendix D** for preliminary SWM calculations and to **Figure 5** showing the conceptual stormwater management plan.

The subject site is located within the jurisdiction of the Rideau Valley Conservation Authority (RVCA) and is tributary to the Ottawa River. Based on preliminary feedback from the RVCA, landscaped areas and roof tops are considered clean for the purpose of protecting water quality for aquatic habitat. In this case, since parking will be provided underground and the distance to the stormwater outlet is > 2 km downstream, on-site stormwater quality control will not be required. Refer to **Appendix A** for correspondence from the RVCA and City of Ottawa.

A complete stormwater management (SWM) analysis will be included as part of the Site Plan Control submission to the City of Ottawa.

3.0 CONCLUSION

Based on our analysis of the information available, the existing municipal sanitary and storm sewers should have adequate capacity to service the proposed development. On-site stormwater management will be implemented to meet the requirements of the City of Ottawa and the Rideau Valley Conservation Authority. The existing municipal watermain network will provide adequate water supply and redundancy to the subject site.

A complete servicing, grading and SWM design will be included as part of the Site Plan Control submission to the City of Ottawa.

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Prepared by:

François Thauvette, P. Eng.
Senior Project Manager

APPENDIX A

Correspondence

Steve Matthews

To: Francois Thauvette
Subject: FW: Pre-consultation 2026 Scott Street follow up - PC2021-0379
Attachments: 2026 Scott Meeting Minuites final.pdf; 2026 Scott St Pre-Consul Notes Engineering.docx; 2026 Scott Street_Parks comments.pdf; design_brief_submission requirements_2026 Scott.pdf; Pre-con Applicant's Study and Plan Identification List.pdf; Scott Street_Ultimate - 1. Churchill to Lanark.pdf

-------- Forwarded Message --------
Subject: Pre-consultation 2026 Scott Street follow up - PC2021-0379
Date: Thu, 23 Dec 2021 20:47:13 +0000
From: Button, Jessica <jessica.button@ottawa.ca>
To: Ken Hoppner <khoppner@morleyhoppner.com>, Patrick Bisson <pbisson@hobinarc.com>
CC: McCreight, Andrew <Andrew.McCreight@ottawa.ca>, Dubyk, Wally <Wally.Dubyk@ottawa.ca>, Wessel, Shawn <shawn.wessel@ottawa.ca>, Wang, Randolph <Randolph.Wang@ottawa.ca>, Russett, Mike <Mike.Russett@ottawa.ca>, Wherry, Kevin <Kevin.Wherry@ottawa.ca>, Heather Mitchell <heathertodmitchell@gmail.com>

Good afternoon,

Please refer to the below and attached notes regarding the Pre-Application Consultation (pre-con) Meeting held on December 21, 2021 for the property at 2026 Scott St. The proposal proposes to develop the site with three towers, containing residential units along with commercial uses at grade.The proposed development requires application for Site Plan Control and Zoning By-law Amendment.

Attached is the required Plans & Study List for application submission. This is based on a concurrent submission of the applications.

Note: Prior to application submission, confirm submission process and if hard copies are required. Procedures are subject to change due to current pandemic procedures.

Attached are staff's preliminary comments based on the information available at the time of pre-con meeting. The attached pre-con Meeting Minutes summarize the meeting discussion. If any comments were recorded incorrectly, please respond to the group and clarify. Similarly, if anyone has any additional comments please do not hesitate to pass those along to the group.

Planning

- See comments in attached minutes
- The Richmond Road / Westboro Secondary Plan applies to this property
- Review the policy context and requirements for high-rise development, including the High-rise Guidelines and potential zoning changes.
- Review the Bird-Safe Design Guidelines and status prior to submitting an application.
- Review the new Tree Protection By-law

- The Scott Street ultimate design (may be subject to change) for Scott/Clifton is attached so that the site frontage design and at grade treatment are considered accordingly.
- Applications required:
    - Site Plan Control - Complex
        - For information on Site Plan Control Thresholds under the Site Plan Control By-law, please visit: https://documents.ottawa.ca/sites/documents/files/siteplan_thresholds_en.pdf
    - Zoning By-law Amendment (Major)

Urban Design Comments- Randolph Wang

- As this proposal runs along one of the City's Design Priority Areas and must attend the City's UDRP;
- A Design Brief is a required submittal for all Site Plan/Re-zoning applications. Please see the scoped Design Brief Terms of Reference provided and consult the City's website for details regarding the UDRP schedule. The material required for the design brief can also be used for the UDRP submission.
- Additional comments are attached in minutes

Engineering Comments –Shawn Wessel

- See the engineering comments in the document "Engineering Comments" attached to this email.
- Feel free to have your consultant contact shawn.wessel@ottawa.ca if they have any questions or to request boundary conditions.

Transportation Comments

- See comments in attached minutes

Feel free to contact Transportation Project Manager, Wally Dubyk, at wally.dubyk@ottawa.ca, ext.13783, for follow-up questions.

Waste Management

- Review the Waste Management Guidelines. Once the number of units is determined, Waste Services can suggest the bin requirements. You can forward a preliminary plan for review to start thinking about garbage room requirements and management for pick-up.

Parkland

- Parkland will be collected in the form of land. Addition details are attached.

Community Association Comments – Heather

- Comments recorded in the attached minutes.

Other

- You are encouraged to contact the Ward Councillor, Jeff Leiper, for awareness of the proposed development.
- I encourage discussing the proposal with the Ward Councillor, and reaching out to the surrounding neighbours for awareness of the potential proposal. If you reach out to the general public prior to application submission, please consider waiving the Non-Disclosure Agreement confidentiality for Heather.

Please refer to the links to "Guide to preparing studies and plans" and fees for further information. Additional information is available related to building permits, development charges, and the Accessibility Design Standards. Be aware that other fees and permits may be required, outside of the development review process. You may obtain background drawings by contacting informationcentre@ottawa.ca.

These pre-con comments are valid for one year. If you submit a development application(s) after this time, you may be required to meet for another pre-consultation meeting and/or the submission requirements may change. You are encouraged to contact us for a follow-up meeting if the plan/concept will be further refined.

Please do not hesitate to contact me if you have any questions.

Jessica Button, MCIP, RPP
Planner II | *Urbaniste II*
Development Review Central | Examen des demandes d'aménagement secteur centre
Planning, Infrastructure and Economic Development Department | *Services de la planification, de l'infrastructure et du développement économique*
City of Ottawa | *Ville d'Ottawa*
110 Laurier Avenue West. Ottawa, ON | *110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1*
ottawa.ca/planning / *ottawa.ca/urbanisme*

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Pre-Application Consultation Meeting Notes

PC2021-0379

Property Address: 2026 Scott Street
December 21, 2021

Attendees:

City of Ottawa:
Andrew McCreight (File Lead), Jessica Button (Planning), Wally Dubyk, (Transportation), Shawn Wessel (Engineering), Randolph Wang (Urban Design), Mike Russett (Parks), Kevin Wherry (Parks)

Applicant Team:
Cyril Leeder, Ken Hoppner, Patrick Bisson, Nick Sutherland, Miguel Tremblay, Geoff Publow, Francois Thauvette, Brad Byvelds, Barry Hobin, Stephen Martin

Community: Heather Mitchel (Westboro Community Association)

Meeting notes:
Opening & attendee introduction

- Introduction of meeting attendees
- Overview of proposal:
  - Former Granite Curling Club to be re-located. Site will be amalgamated with corner lot.
  - 3 buildings to create a micro-urban hub
  - Lion's Park and the Gymnastic Club are located to the immediate south
  - Building heights are proposed at 40, 35 and 30 storeys
  - Commercial space at grade / Scott street to support active street frontage
  - Buildings are intended to provide rental units.
  - 60% 1 bedroom, rest 2 bedrooms and studios
  - Key design narratives: public space, street level animation, mixed use visibility, connectivity, built form to add to the development

Parks (Kevin Wherry)

Detailed parkland comments are attached.

Planning (Andrew McCreight)

- The proposal will be subject to application for Zoning and Site Plan

    - It will be essential that the application demonstrate compliance with Richmond Road/Westboro Secondary Plan and Parent OP to avoid an OPA. High-level up to 40-storeys may be considered but need rationale for support re: secondary plan policies for consideration of taller buildings.

- The new OP is expected to be approved around April from the Minister. If an application is submitted prior to this date Planning Rationale shall cover both OPs. Staff will apply the most restrictive policies.
    - Limit surface parking to very small amount and only for drop-off, delivery. Look at car-share options
    - Transition on this site is very important and staff see two distinct contexts, 1 – along Scott and 2 -rear portion of the site. Towers along Scott should be designed with podium heights consistent with recent builds and approval (5/6-storey) and small tower floor plates (up to 750 sq.m) with the tower at least 20m away from abutting residential zones. The rear portion of the site would be better suited for an angular plane assessment, resulting in much lower height, likely mid-rise.
    - Respond to the proposal at 2050 Scott – transitions to 6 and 3-storey are rear along Ashton.
    - Looking for minimum 23 metres tower separation.
- What is meant by the project description of “World Class Transit Hub focusing on mixed-use, high density housing forms focused on multiple forms of housing and public realm”
    - Applicant response - The site is an important site and will be developed to it’s full potential to be a rich and vibrant hub with activities to draw people to the site. The LRT is nearby and people can filter through the site as they walk to Westboro. This site is approximately 800 units, lots of services and amenities need to be provided on site as it is more of a community or mini city along a transit station.
- A north south mid-block connection is essential in the design of the site, and this will remain a constant as the design evolves, looking to making connections from Scott street to Ashton Street and the Park.
- Further evaluate the site access to avoid open suburban style garage ramp and look for opportunity to internalize this access to the site.
    - Corridor policies suggest that vehicle access should be directed to the site street.
- TDM strategies should be very strong to support the development as being transit oriented –bike parking/location, presto cards for first tenants, lobby display boards,

less parking, car-share etc. Sell the idea further of being a “World Class Transit hub”.

- Section 111 - Bicycle Parking Space Rates and Provisions provides the zoning requirements for bicycle parking including stacked bicycle parking.
- Affordable Housing is encouraged and is more strongly supported by the new OP
- Be mindful that Inclusionary Zoning (IZ) and Community Benefits By-law is anticipated to come into effect next year and may apply to this development.
    - Currently, Section 37 would apply. An analysis shall be covered within the Planning Rationale demonstrating the as-of-right zoning permissions vs proposed. See the Section 37 guidelines for direction.
- Driveway or private road access servicing as fire access route over parking garage requires construction to bridge standard.
- Think about public use and enjoyment of the site or even tourism. Westboro is a very popular neighbourhood and one that warrants some consideration for tourism as a trendy urban neighbourhood of Ottawa. Looks for opportunities within the tallest towers for things like an observation deck / top level amenity (views back towards downtown and Parliament) or viewing platforms, upper restaurant/bar, etc. This stems from the 41+ building policies but should not be discounted for the intent of this site being world class. Being creative and exploring these public opportunities is encouraged.
- Any unprogrammed space at grade (such as driveway and walkways) should be designed for soft landscaping and trees.
- Look for opportunity to have a public pathway connection from Scott to Park.
- Refer to the Bird-friendly guidelines.
- The construction of the Scott Street corridor is currently going through design detail and is subject to change. Development should coordinate the frontage design accordingly. Current plans (Ultimate Scott Design) are provided for your consideration.

Urban Design (Randolph Wang)

- A Design Brief is required as part of the submission. The Terms of Reference is attached for convenience. Please note both wind and shadow studies are required.
- The site is within a Design Priority Area. Formal review by the City’s UDRP is required. Given the significance of the location and the development, the applicant can also benefit from UDRP informal review at pre-consultation stage before submission. The UDRP is currently experiencing high volume of demands and the

priority is given to formal review. It is recommended that the applicant further study the development and design options and come back for a second staff pre-consultation. The merits of a UDRP pre-consultation can then be determined and confirmed.

- Urban design agrees with many general principles presented by the applicants. However, as evidenced in the discussion at the meeting, the location and size of the required municipal park play a significant role in determining the overall site plan layout and will influence built form and public realm design. At the first glance the proposed 3-tower concept appears to be overwhelming for the site and its context. Moving forward please continue to study the context of the area and the neighbourhood. At high level, the development should:
    - Create an animated frontage along Scott Street through appropriate at grade uses and built form design;
    - Provide a generous pedestrian realm along Scott Street with allowance for a continuous tree canopy;
    - Respect the residential character of Athlone Avenue through built form design and landscaping;
    - Increase pedestrian connectivity from the transit station to the residential neighbourhood by creating pedestrian short cuts through the site;
    - Provide meaningful transition to the low-rise area and the municipal park. Use angular planes are a tool to facilitate the design for transition;
    - Ensure a good relationship and coordination with the proposed development at 2050 Scott Street. Respect tower separations, minimize shadow and wind impacts on the public realm, outdoor amenity spaces, and ensure livable conditions for all future residents;
    - Provide appropriate built form scales along Scott, including the height and scale of both the towers and the podium. It is important to study the completed and approved buildings along Scott Street and develop an understanding of what is likely to unfold and what might be the appropriate strategy moving forward. The general rule of thumbs, as provided for in the City's many policies and guidelines, is that tallest buildings should be located close to transit station. Building heights should decrease as the distances to the transit station increase. The City's policies and guidelines also call for variations.

Transportation (Wally Dubyk)

The Screening Form indicates that the TIA Triggers have been met. Please proceed with the next TIA Step 2 – Scoping Report.

This development falls under a TOD area. The development requires TDM measures that support achieving the area mode share targets.

Update to the TIA Guideline Forecasting Report

- We would like to inform all consultants making TIA Forecasting Report submissions to the City of Ottawa as part of a development application, that all new applications (pre-consultation meetings dated after March 3, 2021) must use the NEW TRANS Trip Generation Manual when forecasting site generated trips using this manual (see attached).

- The TRANS committee (a joint transportation planning committee serving the National Capital region) finalized a new manual early in March 2021. The document will be available in French and English on the TRANS website http://www.ncr-trans-rcn.ca/surveys/2009-trip-generation.

- The new manual has simplified the conversion from vehicle trips to person trips and then trips by modal share. The City has also developed a spreadsheet that will apply the factors of location and building type to quickly provide the existing trip numbers by mode share.

General

Transitway structure renewal targeted to start 2-3 years.

Athlone Avenue is classified as a Local road. There are no additional protected ROW limits identified in the OP.

Scott Street is designated as an Arterial road within the City's Official Plan with a ROW protection limit of 23.0 metres. The ROW protection limit and the offset distance (13.0 metres) are to be dimensioned from the existing centerline of pavement and shown on the drawings. The Certified Ontario Land Surveyor is to confirm the ROW protected limits and any portion that may fall within the private property to be conveyed to the City.

ROW interpretation – Land for a road widening will be taken equally from both sides of a road, measured from the centreline in existence at the time of the widening if required by the City. The centreline is a line running down the middle of a road surface, equidistant from both edges of the pavement. In determining the centreline, paved shoulders, bus lay-bys, auxiliary lanes, turning lanes and other special circumstances are not included in the road surface.

A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Scott Street and Athlone Avenue. The sight triangle area is to be conveyed to the City and is

to be shown on all drawings. The sight triangle dimensions are to be measured from the ROW protected limits.

All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the existing property lines, sight triangles and/or future road widening protection limits.

Permanent structures such as curbing, stairs, retaining walls, and underground parking foundation also bicycle parking racks are not to extend into the City's right-of-way limits.

The consultant should review the sight distance to the access and any obstructions that may hinder the view of the driver.

The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.

The Owner acknowledges and agrees that all private accesses to Roads shall comply with the City's Private Approach By-Law being By-Law No. 2003-447 as amended, or as approved through the Site Plan control process.

The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be located in safe, secure places near main entrances and preferably protected from the weather.

Should the property Owner wish to use a portion of the City's road allowance for construction staging, prior to obtaining a building permit, the property Owner must obtain an approved Traffic Management Plan from the Manager, Traffic Management, Transportation Services Department. The city has the right for any reason to deny use of the Road Allowance and to amend the approved Traffic Management Plan as required.

- Proceed to the transportation report.

Update on ultimate design for Scott street

Engineering (Shawn Wessel)

- Detailed engineering comments are attached.

Heather – Westboro Community Association

- The community anticipated a tower in this location.
- A tower in rear is problematic, located in the middle of the residential area, community will be surprized (and opposed).
- A better transition is preferable, consider the inclusion of townhomes to provide a better transition.
- A pathway between the park and Scott Street is desirable.
- Traffic is a concern; traffic study needs to consider all the other development proposals.
- On street visitor parking in the neighbourhood is already a concern.

Closing comments

- Staff strongly recommend a 2nd pre-consult with more focused design and response to initial comments.
- Key takeaway: transition and density, park location, and connectivity.
- Consider how a third tower can work on the site. Consider how a two-tower design can better meet the policies of the plan.

APPLICANT'S STUDY AND PLAN IDENTIFICATION LIST

Legend: **S** indicates that the study or plan is required with application submission.
A indicates that the study or plan may be required to satisfy a condition of approval/draft approval.

For information and guidance on preparing required studies and plans refer here:

S/A	Number of copies	ENGINEERING		S/A	Number of copies
S	PDF Only	1. Site Servicing Plan	2. Site Servicing Study / Assessment of Adequacy of Public Services	S	PDF Only
S	PDF Only	3. Grade Control and Drainage Plan	4. Geotechnical Study / Slope Stability Study	S	PDF Only
	2	5. Composite Utility Plan	6. Groundwater Impact Study		3
	3	7. Servicing Options Report	8. Wellhead Protection Study		3
S	PDF Only	9. Transportation Impact Assessment (TIA)	10.Erosion and Sediment Control Plan / Brief	S	PDF Only
S	PDF Only	11.Storm water Management Report / Brief	12.Hydro geological and Terrain Analysis		3
	3	13.Hydraulic Water main Analysis	14.Noise / Vibration Study	S	PDF Only
A	PDF only	15.Roadway Modification Functional Design	16.Confederation Line Proximity Study		3

S/A	Number of copies	PLANNING / DESIGN / SURVEY		S/A	Number of copies
	15	17.Draft Plan of Subdivision	18.Plan Showing Layout of Parking Garage	S	PDF Only
	5	19.Draft Plan of Condominium	20.Planning Rationale	S	PDF Only
S	PDF Only	21.Site Plan	22.Minimum Distance Separation (MDS)		3
	15	23.Concept Plan Showing Proposed Land Uses and Landscaping	24.Agrology and Soil Capability Study		3
	3	25.Concept Plan Showing Ultimate Use of Land	26.Cultural Heritage Impact Statement		3
S	PDF Only	27.Landscape Plan	28.Archaeological Resource Assessment Requirements: **S** (site plan) **A** (subdivision, condo)		3
S	PDF Only	29.Survey Plan	30.Shadow Analysis	S	PDF Only
S	PDF Only	31.Architectural Building Elevation Drawings (dimensioned)	32.Design Brief (includes the Design Review Panel Submission Requirements)	S	PDF Only
S	PDF Only	33.Wind Analysis			

S/A	Number of copies	ENVIRONMENTAL		S/A	Number of copies
S	PDF Only	34.Phase 1 Environmental Site Assessment	35.Impact Assessment of Adjacent Waste Disposal/Former Landfill Site		3
S	PDF Only	36.Phase 2 Environmental Site Assessment (depends on the outcome of Phase 1)	37.Assessment of Landform Features		3
S	PDF Only	38.Record of Site Condition	39.Mineral Resource Impact Assessment		3
S	PDF Only	40.Tree Conservation Report	41.Environmental Impact Statement / Impact Assessment of Endangered Species		PDF Only
	3	42.Mine Hazard Study / Abandoned Pit or Quarry Study	43.Integrated Environmental Review (Draft, as part of Planning Rationale)		3

S/A	Number of copies	ADDITIONAL REQUIREMENTS		S/A	Number of copies
S	PDF Only	44. Applicant's Public Consultation Strategy (may be provided as part of the Planning Rationale)	45. Floor Plan - Typical	**S**	PDF Only

Meeting Date: December 21, 2021 Application Type: *Re-zoning / Site Plan*

File Lead (Assigned Planner): Andrew McCreight Infrastructure Approvals Project Manager: Shawn Wessel

Site Address (Municipal Address): 2026 Scott Street *Preliminary Assessment: 1☐ 2☐ 3☐ 4☐ 5

*One (1) indicates that considerable major revisions are required before a planning application is submitted, while five (5) suggests that proposal appears to meet the City's key land use policies and guidelines. **This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.**

It is important to note that the need for additional studies and plans may result during application review. If following the submission of your application, it is determined that material that is not identified in this checklist is required to achieve complete application status, in accordance with the Planning Act and Official Plan requirements, the* Planning, Infrastructure and Economic Development Department *will notify you of outstanding material required within the required 30 day period. Mandatory pre-application consultation will not shorten the City's standard processing timelines, or guarantee that an application will be approved. It is intended to help educate and inform the applicant about submission requirements as well as municipal processes, policies, and key issues in advance of submitting a formal development application. This list is valid for one year following the meeting date. If the application is not submitted within this timeframe the applicant must again pre-consult with the Planning, Infrastructure and Economic Development Department.

Description:

A Design Brief is the core submission document that illustrates how the development is designed to work with its existing and planned context, to improve its surroundings and also demonstrate how the proposal supports the overall goals of the Official Plan, relevant secondary plans, Council approved plans and design guidelines. The purpose of the Terms of Reference is to assist the applicant to organize and substantiate the design justification in support of the proposed development and to assist staff and the public in the review of the proposal.

Authority to Request a Design Brief:

The *Planning Act* gives municipalities the authority to require that a Design Brief be prepared. Under Sections 22(4), (5) and Section 41(4) of the *Planning Act*, a Council has the authority to request such other information or material that the authority needs in order to evaluate and make a decision on an application. Section 5.2.6 of the Official Plan sets out the general requirement for a Design Brief.

Preparation:

The Design Brief should be signed by an urban designer, licenced architect, landscape architect, or a full member of the Canadian Institute of Planners.

When Required:

A Design Brief is required for a Site Plan Control planning application.

A Scoped Design Brief* is required when the following planning applications are applied for and not accompanied by a Site Plan Control application:

- Official Plan Amendment
- Zoning By-law Amendment (exception: a change in use which does not result in an increase in height or massing)

The requirement and scope of a Design Brief will be determined at the formal pre-application consultation meeting. Should an application be required to go to the Urban Design Review Panel (UDRP), the Design Brief may be submitted as part of the submission materials to the panel.

Contents for Design Brief Submissions:

A Design Brief will contain and/or address the points identified during the pre-consultation meeting. Failure to address the critical elements identified in the pre-consultation meeting may result in the application being considered incomplete.

** A Scoped Design Brief is composed of:*

- *Section 1 should be combined into the Planning Rationale submission, and*
- *Section 2 items will be confirmed in the pre-application consultation meeting.*

SECTION 1 Note: This section can be combined with the Planning Rationale report.

Application Submission:

Not Required	Required	
☐	X	State the: type of application, legal description, municipal address, purpose of the application and provide an overall vision statement and goals for the proposal.

Response to City Documents:

Not Required	Required	
☐	X	State the Official Plan land use designation for the subject property and demonstrate how the proposal conforms to the Official Plan as it relates to the design of the subject site. Reference specific policy numbers from the Official Plan to show consistency. Justify areas of non-compliance and explain why there is non-compliance.
☐	X	State the applicable plans which apply to the subject proposal: community design plan, secondary plan, concept plan and design guideline. Reference the relevant design related polices within the applicable plans/guidelines and provide a comprehensive analysis as to how the proposed development incorporates the objectives or why it does not incorporate the objectives.

Context Plan:

Not Required	Required	
☐	X	Provide a contextual analysis that discusses/illustrates abutting properties, key destinations and linkages within a 100 meter radius (a larger radius may be requested for larger/more complex projects), such as transit stations, transportation networks for cars, cyclists, and pedestrians, focal points/nodes, gateways; parks/open spaces, topography, views towards the site, the urban pattern (streets, blocks), future and current proposals (if applicable), public art and heritage resources.
☐	X	Photographs to illustrate existing site conditions and surrounding contexts. Include a map pinpointing (with numbers) where each photo is taken and correspond these numbers with the site photos. Arrows illustrating the direction the photo is taken is also useful.

Note:
The contextual analysis should include a much broader area.

SECTION 2

Design Proposal:
The purpose of the Design Proposal is to show the building elevations, exterior details, transitions in form, treatment of the public realm and compatibility with adjacent buildings, using 3-D models, illustrations, diagrams, plans, and cross sections. Referencing Official Plan, Section 5.2.1, as determined at time of pre-application consultation meeting, submissions will need to address the following in the form of labelled graphics and written explanation:

Massing and Scale

Not Required	Required	
		Images which show: Building massing – from:
Note: Please study alternative site plan and massing options.		• at least two sides set within it current context (showing the entire height and width of the building) **OR**
☐	☒	• all four sides set within it current context (showing the entire height and width of the building).
		Views – of the entire block, from:
☐	☐	• at least two perspectives to show how the proposed building is set within its current context **OR**
☐	☒	• all four perspectives to show how the proposed building is set within its current context.
☐	☒	Building transition – to adjacent uses, with labelled explanation of the transition measures used.
☐	☒	Grading – if grades are an issue.
☐	☒	Alternative building massing – additional imagery and site layouts considered and provide justification for the ultimate proposal sought.

Public Realm

Not Required	Required	
		Labelled graphics and a written explanation which show:
☐	☒	Streetscape – cross sections which illustrate the street design and right of way (referencing the City's design manuals).
☐	☒	Relationship to the public realm – illustrating how the first few storeys of the proposed development responds to and relates to the existing context (e.g. through a podium plan and first floor plan). This is to include detailed explanation on:

- Architectural responses
- Landscaping details
- Public art features (in accordance with Official Plan, Section 4.11)
- For developments in Design Priority Areas, detail the building and site features, (in accordance with Official Plan, Section 4.11) which will enhance the public realm. Provide explanation for features which are not provided.

Building Design

Not Required	Required	
☐	☒	Labelled graphics (e.g. building elevations and floor plans) and a written explanation which document the proposed exterior architectural details and design (in accordance with Official Plan, Section 5.2.1).
☐	☒	For high-rise development applications, detail the building design and massing and scale elements and how they relate to the proposed high-rise development (in accordance with Official Plan, Section 5.2.1).

Sustainability

Not Required	Required	
☐	☒	Any sustainable design features to be incorporated, such as green roofs or walls, sun traps, reflective or permeable surfaces.

Heritage

Not Required	Required	
☒	☐	How the building relates to the historic details, materials, site and setting of any existing historic resources on or adjacent to the subject property (if applicable).

Additional Contents:

Some proponents may be requested to provide submission material which complements the Design Brief. These additional requirements could be incorporated into the Design Brief submission for ease of review. These will be identified at the time of application consultation meeting:

- Site Plan x
- Landscape Plan x
- Plan showing existing and proposed servicing x
- Shadow Analysis x
- Wind Analysis x

Submission Requirements

- Six hard copies and one digital copy

ZONING BY LAW AMENDMENT and
SITE PLAN APPLICATION PRE-CONSULTATION
Parks & Facilities Planning Comments

File: PC2021-0379	Site Location: 2026 Scott Street etc.
Lead Planner: Andrew McCreight / Jessica Button	(Granite Curling Club), Ward 15
	Date: December 23, 2021

The following are preliminary comments from the Parks & Facilities Planning regarding Pre-consultation application meeting PC2021-0379, being 2026 Scott St., 2020 Scott St., 2006 Scott St., 314 and 318 Athlone Ave., Ward 15, held December 21st, 2021.

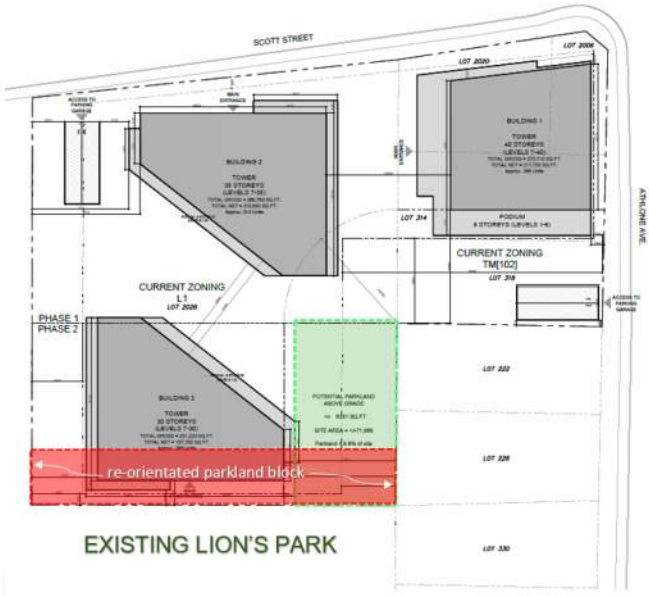
Based on size of the consolidated lot, Parks & Facilities Planning will be requesting dedication of land for parkland purposes, as supported by the new official plan and in accordance with the City's Parks and Facilities Master Plan and City's Parkland Dedication By-law No 2009-95.

Parkland dedication

Parkland dedication has been calculated based on the proposed redevelopment of the site, approximate lot area of 6,686 m^2 (to be confirmed), at a 10% maximum of land area, for a parkland dedication requirement of 668.6m^2 or 0.06686Ha.

Parkland orientation

Park block, as shown on the 2026 Scott Street package submission, to be re-oriented to locate the future proposed park block linear to the extents of the existing Lion's Park property boundaries…the applicant should be advised that the requirements of the Park Dedication By-Law apply which includes that the newly dedicated parkland is to be clear of encumbrances such as Limiting Distance Agreements, per Ontario Building Code, will not be permitted to impact the dedicated park block.



PROJECT/LOCATION:
MORLEY HOPPNER LTD.
2026 SCOTT STREET
OTTAWA ON.

DRAWING TITLE:
SITE PLAN

DRAWN BY:	DATE:	SCALE:
PB	21-04-12	1:100

PROJECT: 2126

DRAWING NO.: A1.00

REVISION NO.:

Source: 2026 Scott Street Package submission

Section 37

Depending on timing of approvals and the execution of a new Community Benefits Charges (CBC) By Law, Parks & Facilities Planning request that in the event that this application is approved prior to a new CBC, the Section 37 community benefits funding agreement consider allocating funds for the design & construction of the proposed future Lion's Park expansion.

Zoning, Parkland

Parks & Facilities Planning request L1 – Community Leisure Facility Zone for the future park block, to match the zoning for existing Lion's Park.

Park Development

Funding for new park development on lands acquired through this application will be subject of an updated or replacement Development Charges by Law currently destined for 2024. Should park development be desired in advance of a new by law coming into effect, a development or front ending agreement between the applicant and the city may be considered.

Regards,

Mike

Mike Russett
Parks and Facilities Planning,
Recreation, Cultural and Facility Services Dept.,
100 Constellation Drive, 8th Floor West, Ottawa. K2G 6J8
(613) 580-2424 Ext. 15459

Pre-Consul Meeting Notes to the File Lead - Andrew McCreight December 21, 2021
Re: 2026 Scott St.
Ward 15 - Kitchesippi, Councillor Jeff Leiper
30-Storey, 35-Storey and a 40-Storey high rise towers on a single podium, with 6 levels of UG Parking

Infrastructure:

A 203 mm dia. PVC Watermain (c. 1994) is available.

A 1220 mm dia. C00 Feeder High Pressure Watermain (c. 1959) is in ROW on North side of Scott Street. Monitoring of Feed WM is required when within 15m of proposed footing and foundation location.

A 375 mm dia. Clay. Sanitary Sewer (c. 1961) is available, which drains to West Nepean Trunk Collector and conveys effluent to the Interceptor Sewer.

A 900 mm dia. Conc. Storm Sewer (c. 1981) is available at western side of frontage to Scott St, which drains to West Transit Way Storm Trunk Sewer and Outlets to the Ottawa River at Onigam Street.

A 1200 mm dia. Conc. Storm Sewer (c. 1972) is available at eastern side of frontage to Scott St., which drains to West Transit Way Storm Trunk Sewer and Outlets to the Ottawa River at Onigam Street.

The following apply to this site and any development within a separated sewer area:

- Total allowable release rate will be 5-year pre-development rate.
- Coefficient (C) of runoff will need to be determined **as per existing conditions** but in no case more than 0.5
- TC = 20 minutes or can be calculated
  TC should be not be less than 10 minutes, since IDF curves become unrealistic at less than 10 min.
- Any storm events greater than 5 year, up to 100 year, and including 100-year storm event must be detained on site.
- Two separate sewer laterals (one for sanitary and other for storm) will be required.

Please note:
Foundation drains are to be independently connected to sewermain (separated or combined) unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.

Roof drains are to be connected downstream of any incorporated ICD within the SWM system. Provide Roof plan showing roof drain and scupper locations with a table that indicates flow rates, drain type and weir opening, if controlled. Provide Manufacturer Specifications on drains and also provide 5- and 100-year ponding limits on plan.

Boundary Conditions will be provided at request of consultant after providing Average Daily Demands, Peak Hour Demands & Max Day + Fire Flow Demands

If window wells are proposed, they are to be indirectly connected to the footing drains.
A detail of window well with indirect connection is required, as is a note at window well location speaking to indirect connection.

Please note:
We have reached out to our colleagues in the City Water Resource Department for any additional comments regarding this proposal in regard to capacity, historical flooding issues etc.

Note:

If applicable, existing buildings require a CCTV inspection and report to ensure existing services to be re-used are in good working order and meet current minimum size requirements. Located services to be placed on site servicing plans.

CCTV Scan Guideline.pdf

Other:

Environmental Noise Study is required due to Scott Street and Transit Way.

Stationary Noise Study – consultant to speak to this in their report as per City NCG and NPC 300 Guidelines. May be required after Mechanical Design completed and prior to building permit issuance.

When greater than 9 Storeys in height, a Shadow Study required for all buildings/dwellings.

When greater than 9 Storeys in height Wind Study for all buildings/dwellings.

Water Supply Redundancy – Fire Flow:

Applicant to ensure that a second service with an inline valve chamber be provided where the average daily demand exceeds 50 m^3 / day (0.5787 l/s per day)
FUS Fire Flow Criteria to be used unless a low-rise building, where OBC requirements may be applicable.

W12.pdf

Site Lighting:
Site lighting certificate and photometric plan required for this site. This will be a condition of agreement(s).

Site lighting certificate and photometric plan required for this site, particularly looking at light spillage and effects on nearby residential properties.

Capital Works:
Temporary Emergency Construction Restriction Process in effect on Scott Street – until April 2022 - for Cleary Watermain Work.
LRT Construction in effect

Trees:
Please note that a new Tree By-law is now in effect.

General Bulletin_New Tree Protection Bylaw

A gas pressure regulating station may be required depending on HVAC needs (typically for 12+ units). Be sure to include this on the Grading, Site Servicing, SWM and Landscape plans.
This is to ensure that there are no barriers for overland flow routes (SWM) or conflicts with any proposed grading or landscape features with installed structures and has nothing to do with supply and demand of any product.

Gas Pressure Regulating Station.pd

Regarding Quantity Estimates:

Please note that external Garbage and/or bicycle storage structures are to be added to QE under Landscaping as it is subject to securities.

In addition, sump pumps for Sanitary and Storm laterals and/or cisterns are to be added to QE under Hard items as it is subject to securities, even though it is internal and is spoken to under SWM and Site Servicing Report and Plan.

Source Protection Policy Screening (SPPS):
SPPS will be provided to applicant by City Risk Mgmt. Officer within Asset Mgmt. Dept.

Applicant to contact Rideau Valley Conservation Authority (RVCA) for possible restrictions due to quality control. Provide correspondence in Report.

Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By-Law 2003-445 and City Standard Detail Drawing R10. The amount of overlay will depend on condition of roadway and width of roadway(s).

Vibration monitoring will be required for all backbone watermains within 15m proximity of footings/foundation for this site. Conditions for Vibration will be applied to agreements. For example:

Vibration Monitoring

Prior to the issuance of a building permit, the Owner shall, at its expense:

(i) provide the General Manager, Planning, Infrastructure and Economic Development with an engineering memorandum from a Professional Engineer, licensed in the Province of Ontario, which shall outline the centreline location and overt elevation of the existing 1.220mm diameter C00 City owned Feeder Watermain (FWM), located on the north side of Scott Street, and its measured proximity to the frontage property boundary limits of 2026 Scott Street in order to evaluate the impact on said FWM from the proposed building's footing and foundation walls proposed for this development.

(ii) obtain a legal survey acceptable to the General Manager, Planning, Infrastructure and Economic Development and the City's Surveyor, showing the existing location of the 1.220mm diameter C00 FWM within Scott Street Right-of-Way ("ROW") between Winona and Athlone Avenues and identify the location of the proposed building and its footings in relation the said FWM;

(iii) provide the General Manager, Planning, Infrastructure and Economic Development with a Vibration Monitoring Plan from a Professional Engineer, specializing in vibration and monitoring, licensed in the Province of Ontario, which shall outline applicable recommendations for continuous monitoring of the existing 1220 mm dia. C00 FWM during all stages of the Work, including, but not limited to, the boundary area in the ROW between East side of Winona Avenue intersection and the West side of Athlone Avenue intersection. This monitoring will also as provide a Work Plan speaking to Work in Vicinity of Large Diameter WM & Monitoring for site development as well as an extensive Emergency Contingency Plan, to be pre-approved by City Infrastructure Services Department (ISD).

(iv) provide, during the construction process and upon completion of construction on the private & City lands, at the Owner's expense and to the satisfaction of the General Manager, Planning, Infrastructure and Economic Development, all daily and hourly data reports (as applicable) of completed monitoring works

(v) assume all liability for any damages caused to the City Water & Sewer Systems within Scott Street ROW between Winona and Athlone Avenues and compensate the City for the full amount of any required repairs to the City Water & Sewer Systems.

Note: In addition to requirement of a vibration specialist engineer required to design and monitor vibration, a certificate of liability insurance shall be submitted to the City wherein the Owner is the named insured and the City of Ottawa is an additional insured. The limits of the policy shall be in the amount of $25,000,000 and shall be kept in full force and effect for the term of the construction work.

Excavation:

Pre-Construction (Piling/Hoe Ramming or close proximity to City Assets) and/or Pre-Blasting (if applicable) Survey required for any buildings/dwellings in proximity of 75m of site and circulation of notice of vibration/noise to residents within 150 m of site. Conditions for Pre-Construction/ Pre-Blast Survey & Use of Explosives will be applied to agreements. Refer to City's Standard S.P. No. F-1201 entitled *Use of Explosives,* as amended.

Proximity to Transit Way:

Due to proximity of site to Transit Way and Westboro Transit Station, applicant to contact City LRT Group in regard to required building offset from transitway. Noise study to review vibration conditions within 75m of Transitway. See Rail Guidelines and CPCS Report as well as OP Annex 17, Zones of Influence and Guidelines for Proximity Study.


2013_05_29_Guidelines_NewDevelopment_E


CPCS Report Appendix_F.pdf


annex_17_en.pdf


Trillium ZOI.pdf


Confederation East ZOI.pdf


Confederation West ZOI.pdf


Confed Railway Line Prox. Guidelines.pdf

Where underground storage (UG) and surface ponding are being considered:

Show all ponding for 5- and 100-year events

Above and below ground storage is permitted although uses ½ Peak Flow Rate or is modeled. Please confirm that this has been accounted for and/or revise.

Rationale:

The Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.

When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. We therefore require that an average release rate be used to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.

In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.

Note that the above will added to upcoming revised Sewer Design Guidelines to account for underground storage, which is now widely used.

Further to above, what will be the actual underground storage provided during the major (100 year) and minor (2 year) storm events?

Please provide information on UG storage pipe. Provide required cover over pipe and details, chart of storage values, capacity etc. How will this pipe be cleaned of sediment and debris?

Note - There must be at least 15cm of vertical clearance between the spill elevation and the ground elevation at the building envelope that is in proximity of the flow route or ponding area. The exception in this case would be at reverse sloped loading dock locations. At these locations, a minimum of 15cm of vertical clearance must be provided below loading dock openings. Ensure to provide discussion in report and ensure grading plan matches if applicable.

Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc.

Provide a cross section of underground chamber system showing invert and obvert/top, major and minor HWLs, top of ground, system volume provided during major and minor events. UG storage to provide actual 2- and 100-year event storage requirements.

In regard to all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the proposed system does not become surcharged and thereby ineffective.

Modeling can be provided to ensure capacity for both storm and sanitary sewers for the proposed development by City's Water Distribution Dept. – Modeling Group, through PM and upon request.

For proposed depressed driveways or developments with private lanes, parking areas or with entrances etc. lower than roadway…

S18.pdf S18.1.pdf

Rear yard on grade parking to be permeable pavement. Refer to City Standard Detail Drawings SC26 (maintenance/temp parking areas), SC27 or permeable asphalt materials. No gravel or stone dust parking areas permitted.

Severance:
If severance is planned, this needs to be addressed in servicing to satisfy severance requirements. Where a large parcel with multiple buildings is planned, City will require an ultimate servicing plan so as to appropriately understand how severance requirements are being met.

Note:
"Provided Info to applicant":
Please be advised that it is the responsibility of the applicant and their representatives/consultants to verify information provided by the City of Ottawa.
Please contact City View and Release Info Centre at Ext. 44455

Environmental Source Information:

Due to more sensitive use, a Record of Site Condition (RSC) is required. Ensure Phase I, and if applicable, Phase II ESA's speak to required RSC.

City of Ottawa - Historical Land Use Inventory (HLUI) - Required

Rationale:
The HLUI database is currently undergoing an update. The updated HLUI will include additional sources beyond those included in the current database, making the inclusion of this record search even more important.
Although a municipal historic land use database is not specifically listed as required environmental record in O. Reg 153/04, Schedule D, Part II states the following:

The following are the specific objectives of a records review:

1. To obtain and review records that relate to the Phase I (One) property and to the current and past uses of and activities at or affecting the Phase I (One) property in order to determine if an area of potential environmental concern exists and to interpret any area of potential environmental concern.

2. To obtain and review records that relate to properties in the Phase I (One) study area other than the Phase I (One) property, in order to determine if an area of potential environmental concern exists and to interpret any area of potential environmental concern.

It is therefore reasonable to request that the HLUI search be included in the Phase I ESA to meet the above objectives.
Please submit.

All existing reports and plans will need to be revised if older than 2 years and must reflect current City Standards, Guidelines, By-laws and Policies.

Please refer to City of Ottawa website portal **for "Guide to preparing Studies and Plans"** at https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans.

Please ensure you are using the current guidelines, bylaws and standards including materials of construction, disinfection and all relevant reference to OPSS/D and AWWA guidelines - all current and as amended, such as:

City of Ottawa Sewer Design Guidelines (**CoOSDG**) complete with all current and relative ISTB technical bulletin updates as well as current Sewer, Landscape & Road Standard Detail Drawings as well as Material Specifications (MS Docs).
Sewer Connection (2003-513) & Sewer Use (2003-514) By-Laws.

City of Ottawa Water Distribution Design Guidelines (**CoOWDDG**) complete with all current and relative ISTB technical bulletin updates as well as current Watermain/ Services Material Specifications (MS Docs) as well as Water and Road Standard Detail Drawings.
FUS Fire Flow standards
Water (2018-167) By-Law

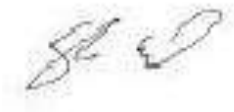
Ensure to include version date and add **"(as amended)"** when referencing all standards, detail drwaings, by-Laws and guidelines.

Fourth (4th) Review Charge:
Please be advised that additional charges for each review, after the 3rd review, will be applicable to each file. There will be no exceptions.

Construction approach – Please contact the Right-of-Ways Permit Office (TMconstruction@ottawa.ca) early in the zoning and site plan process to determine the ability to construct site and copy Andrew McCreight on this request.

Contact me by e-mail at shawn.wessel@ottawa.ca if you have any questions.

Sincerely,



Shawn Wessel, A.Sc.T., rcji
Project Manager
Development Review, Central Branch

Steve Matthews

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: Tuesday, April 5, 2022 9:18 AM
To: Francois Thauvette
Cc: Steve Matthews; Eric Lalande
Subject: RE: 2026 Scott St - Pre-Consultation with the RVCA

Good Morning Francois,

I apologize for the delay. It looks like this came in around the time I went off on leave. I can confirm that based on the parking being underground and the development consisting of rooftop drainage and landscaping, the RVCA would not require additional on-site water quality measures save and except best management practices.

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Friday, April 1, 2022 12:43 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Steve Matthews <S.Matthews@novatech-eng.com>
Subject: RE: 2026 Scott St - Pre-Consultation with the RVCA

Hi Jamie,

I sent you the e-mail below back in December 2021, but do not recall receiving a response. Please review the e-mail below and provide a response so that we may finalize our servicing and SWM report? Also attached is the updated conceptual Site Plan.

Regards,

François Thauvette, P. Eng., Senior Project Manager | Land Development & Public Sector Engineering
NOVATECH Engineers, Planners & Landscape Architects
Please note that I am working from home. Email or MS Teams are the best ways to contact me.
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 219 | Cell: 613.276.0310 | Fax: 613.254.5867
The information contained in this email message is confidential and is for exclusive use of the addressee.

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Wednesday, December 8, 2021 11:55 AM
To: jamie.batchelor@rvca.ca
Cc: Steve Matthews <S.Matthews@novatech-eng.com>
Subject: 2026 Scott St - Pre-Consultation with the RVCA

Hi Jamie,

We are working on a proposed multi-tower high-rise residential development located at 2026 Scott Street in Ottawa (see attached conceptual Site Plan). The proposed development will include three (3) high-rise towers (ranging from 20 to 40-storeys), exterior amenity space and underground parking. We are sending this e-mail to ask the RVCA to confirm if there are any stormwater management (quality control criteria) requirements for this site. Based on recent RVCA correspondence (for a new project at 1950 Scott Street) stormwater quality control measures are not required due to the nature of the development, the fact that all parking will be underground (i.e. no surface parking) and that the distance to the stormwater outlet is >2km downstream. Please confirm if this is also applicable to the proposed development.

Regards,

François Thauvette, P. Eng., Senior Project Manager | Land Development & Public Sector Engineering
NOVATECH Engineers, Planners & Landscape Architects
Please note that I am working from home. Email or MS Teams are the best ways to contact me.
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 219 | Cell: 613.276.0310 | Fax: 613.254.5867
The information contained in this email message is confidential and is for exclusive use of the addressee.

APPENDIX B

Preliminary Sanitary Sewage Calculations

2026 SCOTT STREET - TOWER 1
POST-DEVELOPMENT SANITARY FLOWS

Residential Flows	**Post-Development**	
Number of Studio / 1-Bedroom Units	163	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	35	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	198	
Design Population	302	
Average Daily Flow per Resident	280	L/c/day
Peak Factor (Harmon Formula)	3.46	
Peak Residential Flow	**3.39**	**L/s**
Commercial Flows		
Ground Floor Area	0	m^2
Average Commercial Daily Demand	2.8	$L/m^2/day$
Peaking Factor	1.5	
Peak Commercial Flows	**0.00**	**L/s**
Extraneous Flow		
Site Area	0.210	ha
Infiltration Allowance	0.33	L/s/ha
Peak Extraneous Flow	**0.07**	**L/s**
Total Peak Sanitary Flow	**3.5**	**L/s**

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Engineers, Planners & Landscape Architects

2026 SCOTT STREET - TOWER 2
POST-DEVELOPMENT SANITARY FLOWS

Residential Flows	Post-Development	
Number of Studio / 1-Bedroom Units	268	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	76	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	344	
Design Population	535	
Average Daily Flow per Resident	280	L/c/day
Peak Factor (Harmon Formula)	3.37	
Peak Residential Flow	**5.84**	**L/s**
Commercial Flows		
Ground Floor Area	0	m^2
Average Commercial Daily Demand	2.8	$L/m^2/day$
Peaking Factor	1.5	
Peak Commercial Flows	**0.00**	**L/s**
Extraneous Flow		
Site Area	0.205	ha
Infiltration Allowance	0.33	L/s/ha
Peak Extraneous Flow	**0.07**	**L/s**
Total Peak Sanitary Flow	**5.9**	**L/s**

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2026 SCOTT STREET - TOWER 3
POST-DEVELOPMENT SANITARY FLOWS

Residential Flows	Post-Development	
Number of Studio / 1-Bedroom Units	207	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	115	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	322	
Design Population	532	
Average Daily Flow per Resident	280	L/c/day
Peak Factor (Harmon Formula)	3.37	
Peak Residential Flow	**5.81**	**L/s**
Commercial Flows		
Ground Floor Area	0	m^2
Average Commercial Daily Demand	2.8	$L/m^2/day$
Peaking Factor	1.5	
Peak Commercial Flows	**0.00**	**L/s**
Extraneous Flow		
Site Area	0.248	ha
Infiltration Allowance	0.33	L/s/ha
Peak Extraneous Flow	**0.08**	**L/s**
Total Peak Sanitary Flow	**5.9**	**L/s**

APPENDIX C

Preliminary Water Demands, FUS Calculations, Watermain Boundary Conditions and E-mail Correspondence from the City of Ottawa

Francois Thauvette

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Tuesday, March 8, 2022 9:33 AM
To: Francois Thauvette
Cc: Steve Matthews
Subject: RE: 2026 Scott Street - Watermain Boundary Conditions Request
Attachments: 2026 Scott Street March 2022.pdf

Good morning, Francois

Please find conditions, as requested, below:

Concerns with Building #3 meeting required fire flow:

- Confirm 362028H057 is measured along a fire access route within their site.
- Hydrant 362028H059 will not be able to deliver the maximum fire flow and therefore this watermain may need to be upgraded unless Hydrant 362028H070 is within 150m measured from the hydrant to building along the fire access roads – Technical Bulletin 2018-02.
- Is there fire access roads within the site from Scott Street as the hydrants the consultant has identified need to measured along these to the buildings

******The following information may be passed on to the consultant, but do NOT forward this e-mail directly.******

The following are boundary conditions, HGL, for hydraulic analysis at 2026 Scott Street (zone 1W) assumed to be connected to the 203 mm watermain on Scott Street and the 203 mm on Athlone Avenue (see attached PDF for location).

Both Connections

Minimum HGL: 108.3 m

Maximum HGL: 115.0 m

Max Day + Fire Flow (167 L/s): 101.6 m (Scott connection) and 100.5 m (Athlone connection)

Max Day + Fire Flow (183 L/s): 100.1 m (Scott connection) and 98.8 (Athlone connection)

Max Day + Fire Flow (217 L/s): 96.4 m (Scott connection) and 94.6 (Athlone connection)

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

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

Development Review Central Branch | Direction de l'examen des projets d'aménagement, Centrale
Planning, Real Estate and Economic Development Department | Direction générale de la planification des biens immobiliers et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Ave. W. | 110, avenue Laurier Ouest, Ottawa ON K1P 1J1
(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

Please consider the environment before printing this email

Vacation Alert:
I will be out of the office February 14-18th inclusive. Please contact John Wu or Abdul Mottalib in my absence.

*****Please also note that, while my work hours may be affected by the current situation and am working from home, I still have access to email, video conferencing and telephone. Feel free to schedule video conferences and/or telephone calls, as necessary.*****

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: March 02, 2022 2:48 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Cc: Steve Matthews <S.Matthews@novatech-eng.com>
Subject: FW: 2026 Scott Street - Watermain Boundary Conditions Request

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 Shawn,

We are sending you this message to request municipal watermain boundary conditions for the proposed residential development at 2036 Scott Street (incl. other adjacent properties to be merged). See e-mail below and attachments for

details. Please note that although the attached sketch shows 2 watermain connections (one off Scott Street and the other off Athlone Avenue), it may be possible to have 2 connections to Scott Street with an isolation valve between the services. The exact configuration of the water services will have TBD at the detailed design stage, unless advised otherwise by the City's Water Department.

Please let us know if you require any additional information.

Regards,

François Thauvette, P. Eng., Senior Project Manager | Land Development & Public Sector Engineering
NOVATECH Engineers, Planners & Landscape Architects
Please note that I am working from home. Email or MS Teams are the best ways to contact me.
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 219 | Cell: 613.276.0310 | Fax: 613.254.5867
The information contained in this email message is confidential and is for exclusive use of the addressee.

From: Steve Matthews <S.Matthews@novatech-eng.com>
Sent: Wednesday, March 2, 2022 2:29 PM
To: Francois Thauvette <f.thauvette@novatech-eng.com>
Subject: 2026 Scott Street - Watermain Boundary Conditions Request

Hi François,

The proposed residential development located at 2026 Scott Street (in the City of Ottawa) will include three residential towers and a common underground parking garage. Refer to the attached Site Plan for details.

Please request watermain boundary conditions from the City of Ottawa for the existing 200mm dia. municipal watermain in Scott Street and the 150mm dia. municipal watermain in Athlone Avenue (as shown on geoOttawa). We do not anticipate requiring any on-site private fire hydrants as there are multiple existing municipal hydrants surrounding the property. The proposed redundant water connections will be located in the north-east corner of the building underground levels and will be serviced off the both the adjacent existing municipal watermains. The anticipated water demands for the proposed development are as follows:

- Average Day Demand = 4.4 L/s
- Maximum Day Demand = 11.1 L/s
- Peak Hour Demand = 24.4 L/s
- Maximum Fire Flow Demand = 217 L/s

See attached calculation sheets for details.

A multi-hydrant approach to firefighting is anticipated to be required. As indicated on the geoOttawa website, there are multiple blue bonnet municipal hydrants within 75m of the site, as well as additional blue bonnet municipal hydrants within 150m of the subject site that could be used for firefighting purposes. See attached Boundary Conditions Request Sketch for details.

Please review and let me know if you require any additional information.

Regards,
Steve

Stephen Matthews, B.A.(Env), Senior Design Technologist
NOVATECH Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 223 | Fax: 613.254.5867

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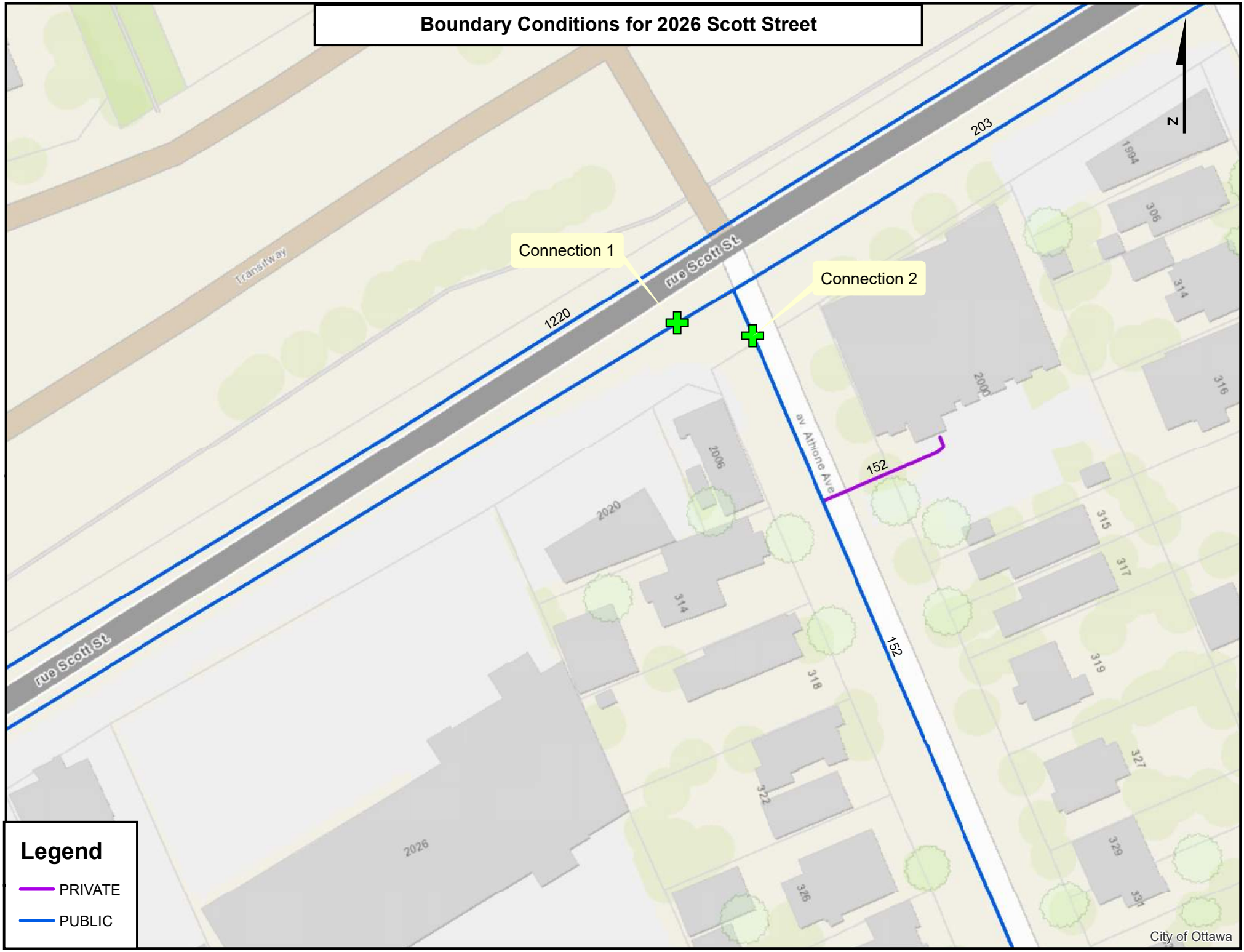
'

Boundary Conditions for 2026 Scott Street



2026 SCOTT STREET - TOWER 1
POST-DEVELOPMENT WATER DEMANDS

DOMESTIC WATER DEMANDS

Residential Water Demands	Post-Development	
Number of Studio / 1-Bedroom Units	163	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	35	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	198	
Design Population	302	
Average Daily Flow per resident	280	L/c/day
Average Day Demand	**0.98**	**L/s**
Maximum Day Demand (2.5 x avg. day)	**2.45**	**L/s**
Peak Hour Demand (2.2 x max. day)	**5.38**	**L/s**
TOTALS		
Average Day Demand	**1.0**	**L/s**
Maximum Day Demand	**2.4**	**L/s**
Peak Hour Demand	**5.4**	**L/s**

BOUNDAY CONDITIONS (Values provided by the City of Ottawa)

Maximum HGL =	115	m
Minimum HGL =	108.3	m
Max Day + Fire Flow (217 L/s) =	96.4	m

PRESSURE TESTS

Average Ground Elevation 63.2 m

High Pressure Test = (Max HGL - Avg.Ground Elev.) x 1.42197 PSI/m < 80 PSI

73.7 PSI

Low Pressure Test = (Min. HGL - Avg. Ground Elev.) x 1.42197 PSI/m > 40 PSI

64.1 PSI

Max Day + Fire Flow Test = (Max Day + Fire Flow - Avg. Ground Elev.) x 1.42197 PSI/m > 20 PSI

Max Day + Fire Flow Pressure = **47.2** PSI

2026 SCOTT STREET - TOWER 2
POST-DEVELOPMENT WATER DEMANDS

DOMESTIC WATER DEMANDS

Residential Water Demands	Post-Development	
Number of Studio / 1-Bedroom Units	268	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	76	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	344	
Design Population	535	
Average Daily Flow per resident	280	L/c/day
Average Day Demand	**1.73**	**L/s**
Maximum Day Demand (2.5 x avg. day)	**4.33**	**L/s**
Peak Hour Demand (2.2 x max. day)	**9.54**	**L/s**
TOTALS		
Average Day Demand	**1.7**	**L/s**
Maximum Day Demand	**4.3**	**L/s**
Peak Hour Demand	**9.5**	**L/s**

BOUNDAY CONDITIONS (Values provided by the City of Ottawa)

Maximum HGL =	115	m
Minimum HGL =	108.3	m
Max Day + Fire Flow (183 L/s) =	100.1	m

PRESSURE TESTS

Average Ground Elevation 63.2 m

High Pressure Test = (Max HGL - Avg.Ground Elev.) x 1.42197 PSI/m < 80 PSI

73.7 PSI

Low Pressure Test = (Min. HGL - Avg. Ground Elev.) x 1.42197 PSI/m > 40 PSI

64.1 PSI

Max Day + Fire Flow Test = (Max Day + Fire Flow - Avg. Ground Elev.) x 1.42197 PSI/m > 20 PSI

Max Day + Fire Flow Pressure = **52.5** PSI

2026 SCOTT STREET - TOWER 3
POST-DEVELOPMENT WATER DEMANDS

DOMESTIC WATER DEMANDS

Residential Water Demands	Post-Development	
Number of Studio / 1-Bedroom Units	207	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	115	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	322	
Design Population	532	
Average Daily Flow per resident	280	L/c/day
Average Day Demand	**1.72**	**L/s**
Maximum Day Demand (2.5 x avg. day)	**4.31**	**L/s**
Peak Hour Demand (2.2 x max. day)	**9.48**	**L/s**
TOTALS		
Average Day Demand	**1.7**	**L/s**
Maximum Day Demand	**4.3**	**L/s**
Peak Hour Demand	**9.5**	**L/s**

BOUNDAY CONDITIONS (Values provided by the City of Ottawa)

Maximum HGL =	115	m
Minimum HGL =	108.3	m
Max Day + Fire Flow (167 L/s) =	101.6	m

PRESSURE TESTS

Average Ground Elevation (Scott Street) 63.2 m

High Pressure Test = (Max HGL - Avg.Ground Elev.) x 1.42197 PSI/m < 80 PSI

73.7 PSI

Low Pressure Test = (Min. HGL - Avg. Ground Elev.) x 1.42197 PSI/m > 40 PSI

64.1 PSI

Max Day + Fire Flow Test = (Max Day + Fire Flow - Avg. Ground Elev.) x 1.42197 PSI/m > 20 PSI

Max Day + Fire Flow Pressure = **54.6** PSI

FUS - Fire Flow Calculations

As per 1999 Fire Underwriter's Survey Guidelines

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 121302
Project Name: 2026 Scott Street - Tower 1
Date: 3/31/2022
Input By: S.Matthews
Reviewed By: F.Thauvette

Legend: Input by User; No Information or Input Required

Building Description: 20-Storey Building with 5-Storey Podium
Fire Resistive Construction

Step			Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow						
1	**Construction Material**			**Multiplier**		
	Coefficient related to type of construction **C**	Wood frame		1.5	0.8	
		Ordinary construction		1		
		Non-combustible construction	Yes	0.8		
		Modified Fire resistive construction (2 hrs)		0.6		
		Fire resistive construction (> 3 hrs)		0.6		
2	**Floor Area**					
	A	Podium Level Footprint (m^2)	1094			
		Total Floors/Storeys (Podium)	5			
		Tower Footprint (m^2)	720			
		Total Floors/Storeys (Tower)	15			
		Protected Openings (1 hr)				
		Area of structure considered (m^2)			**5,629**	
	F	**Base fire flow without reductions**				**13,000**
		$F = 220\ C\ (A)^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**			**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**11,050**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction**			**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-4,420**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System		-10%		
				Cumulative Total	**-40%**	
5	**Exposure Surcharge (cumulative %)**				**Surcharge**	
	(3)	North Side	10.1 - 20 m		15%	**6,078**
		East Side	20.1 - 30 m		10%	
		South Side	20.1 - 30 m		10%	
		West Side	3.1 - 10 m		20%	
				Cumulative Total	**55%**	
Results						
6	(1) + (2) + (3)	**Total Required Fire Flow, rounded to nearest 1000L/min**			**L/min**	**13,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**217**
				or	USGPM	3,435
7	**Storage Volume**	Required Duration of Fire Flow (hours)			Hours	2.5
		Required Volume of Fire Flow (m^3)			m^3	1950

FUS - Fire Flow Calculations

As per 1999 Fire Underwriter's Survey Guidelines

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 121302
Project Name: 2026 Scott Street - Tower 2
Date: 3/31/2022
Input By: S.Matthews
Reviewed By: F.Thauvette

Legend: Input by User; No Information or Input Required

Building Description: 36-Storey Building with 5-Storey Podium
Fire Resistive Construction

Step			Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow						
1	**Construction Material**			**Multiplier**		
	Coefficient related to type of construction **C**	Wood frame		1.5	0.8	
		Ordinary construction		1		
		Non-combustible construction	Yes	0.8		
		Modified Fire resistive construction (2 hrs)		0.6		
		Fire resistive construction (> 3 hrs)		0.6		
2	**Floor Area**					
	A	Podium Level Footprint (m^2)	1004			
		Total Floors/Storeys (Podium)	5			
		Tower Footprint (m^2)	785			
		Total Floors/Storeys (Tower)	31			
		Protected Openings (1 hr)				
		Area of structure considered (m^2)			**5,477**	
	F	**Base fire flow without reductions**				**13,000**
		$F = 220\ C\ (A)^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**			**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**11,050**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction**			**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-4,420**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System		-10%		
				Cumulative Total	**-40%**	
5	**Exposure Surcharge (cumulative %)**				**Surcharge**	
	(3)	North Side	> 45.1m		0%	**4,973**
		East Side	20.1 - 30 m		10%	
		South Side	10.1 - 20 m		15%	
		West Side	3.1 - 10 m		20%	
				Cumulative Total	**45%**	
Results						
6	(1) + (2) + (3)	**Total Required Fire Flow, rounded to nearest 1000L/min**			**L/min**	**12,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**200**
				or	USGPM	3,170
7	**Storage Volume**	Required Duration of Fire Flow (hours)			Hours	2.5
		Required Volume of Fire Flow (m^3)			m^3	1800

FUS - Fire Flow Calculations

As per 1999 Fire Underwriter's Survey Guidelines

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 121302
Project Name: 2026 Scott Street - Tower 3
Date: 3/31/2022
Input By: S.Matthews
Reviewed By: F.Thauvette

Legend: Input by User; No Information or Input Required

Building Description: 40-Storey Building with 5-Storey Podium
Fire Resistive Construction

Step			Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow						
1	**Construction Material**			**Multiplier**		
	Coefficient related to type of construction C	Wood frame		1.5	0.8	
		Ordinary construction		1		
		Non-combustible construction	Yes	0.8		
		Modified Fire resistive construction (2 hrs)		0.6		
		Fire resistive construction (> 3 hrs)		0.6		
2	**Floor Area**					
	A	Podium Level Footprint (m^2)	1073			
		Total Floors/Storeys (Podium)	5			
		Tower Footprint (m^2)	653			
		Total Floors/Storeys (Tower)	35			
		Protected Openings (1 hr)				
		Area of structure considered (m^2)			**5,388**	
	F	**Base fire flow without reductions**				**13,000**
		$F = 220\ C\ (A)^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**			**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**11,050**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction**			**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-4,420**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System		-10%		
				Cumulative Total	**-40%**	
5	**Exposure Surcharge (cumulative %)**				**Surcharge**	
	(3)	North Side	> 45.1m		0%	**3,868**
		East Side	20.1 - 30 m		10%	
		South Side	10.1 - 20 m		15%	
		West Side	20.1 - 30 m		10%	
				Cumulative Total	**35%**	
Results						
6	**(1) + (2) + (3)**	**Total Required Fire Flow, rounded to nearest 1000L/min**			**L/min**	**10,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**167**
				or	USGPM	2,642
7	**Storage Volume**	Required Duration of Fire Flow (hours)			Hours	2
		Required Volume of Fire Flow (m^3)			m^3	1200

Watermain Boundary Conditions Request
2026 Scott Street

City Fire Hydrant ID: **362028H070** approx. 8m from Tower 3, 60m from Tower 2 and 90m from Tower 1

City Fire Hydrant ID: **362028H192** approximately 52m from Tower 3 and 95m from Tower 2

Proposed Redundant Water Service Connections to existing 200mm dia. watermain in Scott Street c/w New Isolation Valve

City Fire Hydrant ID: **362028H110** approx. 3m from Tower 2, 65m from Tower 3, and 85m from Tower 1

City Fire Hydrant ID: **362028H111** approximately 95m from Tower 3

City Fire Hydrant ID: **362028H057** approximately 95m from Tower 2

City Fire Hydrant ID: **362028H059** approximately 20m from Proposed Tower 1

VB

VB

VB

Tower 2

Tower 3

Tower 1

Site

Fire Route

rue Scott St.

av. Churchill Ave. N.

av. Bloomfield Ave.

Transitway

av. Winona Ave.

av. Ashton Ave.

av. Elmgrove Ave.

av. Athlone Ave.

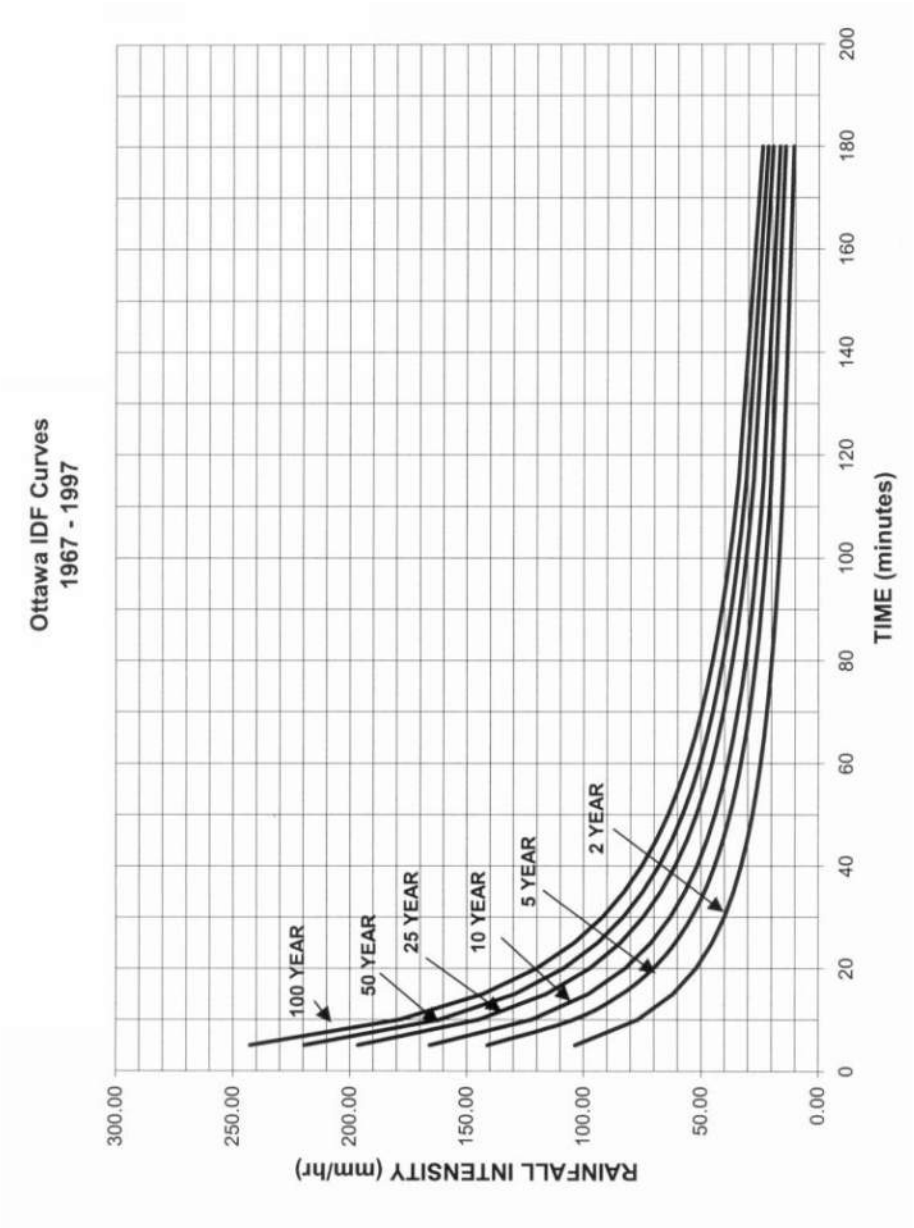
av. Tweedsmuir Ave.

ch. Richmond Rd.

APPENDIX D

IDF Curves and Preliminary SWM Calculations

APPENDIX 5-A OTTAWA INTENSITY DURATION FREQUENCY (IDF) CURVE



Project #: 121302
Project Name: 2026 Scott Street
Location: Ottawa

Date Prepared: 4/5/2022

Proposed Multi-Tower Site Development
2026 Scott Street - Residential Buildings

Pre - Development Site Flows										
Description	Area (ha)	$A_{impervious}$ (ha) C=0.9	A_{gravel} (ha) C=0.6	$A_{pervious}$ (ha) C=0.2	Weighted C_{w5}	Weighted C_{w100}	1:5 Year Flow (L/s)	1:100 Year Flow (L/s)	Allowable C_w=0.5 Max	Allowable Flow 5 year (L/s)
Site to be Developed	0.663	0.637	0.000	0.026	0.87	0.97	167.6	319.5	0.50	96.0
									C=0.5 (Max.)	T_c = 10mins

Post - Development Site Flows												
Area	Description	Area (ha)	A_{imp} (ha) C=0.9	A_{perv} (ha) C=0.2	C_5	C_{100}	Uncontrolled Flow (L/s) 5 year	Uncontrolled Flow (L/s) 100 year	Controlled Flow (L/s) 5 year	Controlled Flow (L/s) 100 year	Storage Required (m^3) 5 year	Storage Required (m^3) 100 year
A-1	Uncontrolled Direct Runoff	0.080	0.060	0.020	0.73	0.81	16.8	32.3	-	-	-	-
A-2	Controlled Flow Tower 1	0.106	0.106	0.000	0.90	1.00	-	-	12.0	12.0	9.4	28.0
A-3	Controlled Flow Tower 2	0.103	0.103	0.000	0.90	1.00	-	-	12.0	12.0	8.9	26.8
A-4	Controlled Flow Tower 3	0.107	0.107	0.000	0.90	1.00	-	-	12.0	12.0	9.5	28.4
A-5	Controlled Site Runoff	0.267	0.227	0.040	0.80	0.89	-	-	15.0	15.0	31.8	97.9
	Totals :	0.663	-	-	-	-	**16.8**	**32.3**	**51.0**	**51.0**	**59.6**	**181.1**
							Total Site Flows :		**67.8**	**83.3**		
							T_c = 10mins	T_c = 10mins	28.2	12.8		

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-1 Uncontrolled Direct Runoff

OTTAWA IDF CURVE

Area =	0.080	ha	Qallow =	16.8	L/s
C =	0.73		Vol(max) =	1.8	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	22.76	5.96	1.79
10	104.19	16.80	0.00	0.00
15	83.56	13.47	-3.33	-2.99
20	70.25	11.33	-5.47	-6.57
25	60.90	9.82	-6.98	-10.47
30	53.93	8.70	-8.10	-14.59
35	48.52	7.82	-8.98	-18.85
40	44.18	7.12	-9.68	-23.22
45	40.63	6.55	-10.25	-27.67
50	37.65	6.07	-10.73	-32.19
55	35.12	5.66	-11.14	-36.75
60	32.94	5.31	-11.49	-41.36
65	31.04	5.01	-11.79	-46.00
70	29.37	4.74	-12.06	-50.67
75	27.89	4.50	-12.30	-55.37
80	26.56	4.28	-12.52	-60.08
85	25.37	4.09	-12.71	-64.82
90	24.29	3.92	-12.88	-69.57

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-1 Uncontrolled Direct Runoff

OTTAWA IDF CURVE

Area =	0.080	ha	Qallow =	32.3	L/s
C =	0.81		Vol(max) =	1.8	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	43.86	11.59	3.48
10	178.56	32.27	0.00	0.00
15	142.89	25.82	-6.44	-5.80
20	119.95	21.68	-10.59	-12.71
25	103.85	18.77	-13.50	-20.25
30	91.87	16.60	-15.67	-28.20
35	82.58	14.92	-17.34	-36.42
40	75.15	13.58	-18.69	-44.85
45	69.05	12.48	-19.79	-53.43
50	63.95	11.56	-20.71	-62.13
55	59.62	10.77	-21.49	-70.92
60	55.89	10.10	-22.17	-79.80
65	52.65	9.51	-22.75	-88.73
70	49.79	9.00	-23.27	-97.73
75	47.26	8.54	-23.73	-106.77
80	44.99	8.13	-24.14	-115.85
85	42.95	7.76	-24.50	-124.97
90	41.11	7.43	-24.84	-134.12

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-2 Controlled Flow Tower 1

OTTAWA IDF CURVE

Area =	0.106	ha	Qallow =	12.0	L/s
C =	0.90		Vol(max) =	9.4	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	37.44	25.44	7.63
10	104.19	27.63	15.63	9.38
15	83.56	22.16	10.16	9.14
20	70.25	18.63	6.63	7.96
25	60.90	16.15	4.15	6.23
30	53.93	14.30	2.30	4.14
35	48.52	12.87	0.87	1.82
40	44.18	11.72	-0.28	-0.68
45	40.63	10.78	-1.22	-3.31
50	37.65	9.99	-2.01	-6.04
55	35.12	9.32	-2.68	-8.86
60	32.94	8.74	-3.26	-11.75
65	31.04	8.23	-3.77	-14.69
70	29.37	7.79	-4.21	-17.68
75	27.89	7.40	-4.60	-20.72
80	26.56	7.04	-4.96	-23.79
85	25.37	6.73	-5.27	-26.89
90	24.29	6.44	-5.56	-30.02

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-2 Controlled Flow Tower 1

OTTAWA IDF CURVE

Area =	0.106	ha	Qallow =	12.0	L/s
C =	1.00		Vol(max) =	28.0	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	71.52	59.52	17.86
10	178.56	52.62	40.62	24.37
15	142.89	42.11	30.11	27.10
20	119.95	35.35	23.35	28.02
25	103.85	30.60	18.60	27.90
30	91.87	27.07	15.07	27.13
35	82.58	24.33	12.33	25.90
40	75.15	22.14	10.14	24.35
45	69.05	20.35	8.35	22.54
50	63.95	18.85	6.85	20.54
55	59.62	17.57	5.57	18.38
60	55.89	16.47	4.47	16.10
65	52.65	15.51	3.51	13.70
70	49.79	14.67	2.67	11.22
75	47.26	13.93	1.93	8.66
80	44.99	13.26	1.26	6.04
85	42.95	12.66	0.66	3.35
90	41.11	12.11	0.11	0.62

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-3 Controlled Flow Tower 2

OTTAWA IDF CURVE

Area =	0.103	ha	Qallow =	12.0	L/s
C =	0.90		Vol(max) =	8.9	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	36.38	24.38	7.31
10	104.19	26.85	14.85	8.91
15	83.56	21.53	9.53	8.58
20	70.25	18.10	6.10	7.32
25	60.90	15.69	3.69	5.54
30	53.93	13.90	1.90	3.42
35	48.52	12.50	0.50	1.06
40	44.18	11.39	-0.61	-1.47
45	40.63	10.47	-1.53	-4.13
50	37.65	9.70	-2.30	-6.89
55	35.12	9.05	-2.95	-9.73
60	32.94	8.49	-3.51	-12.64
65	31.04	8.00	-4.00	-15.60
70	29.37	7.57	-4.43	-18.61
75	27.89	7.19	-4.81	-21.66
80	26.56	6.85	-5.15	-24.74
85	25.37	6.54	-5.46	-27.86
90	24.29	6.26	-5.74	-31.00

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-3 Controlled Flow Tower 2

OTTAWA IDF CURVE

Area =	0.103	ha	Qallow =	12.0	L/s
C =	1.00		Vol(max) =	26.8	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	69.50	57.50	17.25
10	178.56	51.13	39.13	23.48
15	142.89	40.92	28.92	26.02
20	119.95	34.35	22.35	26.82
25	103.85	29.74	17.74	26.60
30	91.87	26.31	14.31	25.75
35	82.58	23.65	11.65	24.46
40	75.15	21.52	9.52	22.84
45	69.05	19.77	7.77	20.98
50	63.95	18.31	6.31	18.94
55	59.62	17.07	5.07	16.74
60	55.89	16.00	4.00	14.42
65	52.65	15.07	3.07	11.99
70	49.79	14.26	2.26	9.48
75	47.26	13.53	1.53	6.89
80	44.99	12.88	0.88	4.24
85	42.95	12.30	0.30	1.53
90	41.11	11.77	-0.23	-1.23

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-4 Controlled Flow Tower 3

OTTAWA IDF CURVE

Area =	0.107	ha	Qallow =	12.0	L/s
C =	0.90		Vol(max) =	9.5	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	37.80	25.80	7.74
10	104.19	27.89	15.89	9.54
15	83.56	22.37	10.37	9.33
20	70.25	18.81	6.81	8.17
25	60.90	16.30	4.30	6.45
30	53.93	14.44	2.44	4.39
35	48.52	12.99	0.99	2.08
40	44.18	11.83	-0.17	-0.41
45	40.63	10.88	-1.12	-3.03
50	37.65	10.08	-1.92	-5.76
55	35.12	9.40	-2.60	-8.57
60	32.94	8.82	-3.18	-11.45
65	31.04	8.31	-3.69	-14.39
70	29.37	7.86	-4.14	-17.37
75	27.89	7.47	-4.53	-20.40
80	26.56	7.11	-4.89	-23.47
85	25.37	6.79	-5.21	-26.56
90	24.29	6.50	-5.50	-29.69

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-4 Controlled Flow Tower 3

OTTAWA IDF CURVE

Area =	0.107	ha	Qallow =	12.0	L/s
C =	1.00		Vol(max) =	28.4	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	72.19	60.19	18.06
10	178.56	53.11	41.11	24.67
15	142.89	42.51	30.51	27.45
20	119.95	35.68	23.68	28.42
25	103.85	30.89	18.89	28.34
30	91.87	27.33	15.33	27.59
35	82.58	24.56	12.56	26.38
40	75.15	22.35	10.35	24.85
45	69.05	20.54	8.54	23.06
50	63.95	19.02	7.02	21.07
55	59.62	17.74	5.74	18.93
60	55.89	16.63	4.63	16.66
65	52.65	15.66	3.66	14.27
70	49.79	14.81	2.81	11.80
75	47.26	14.06	2.06	9.25
80	44.99	13.38	1.38	6.64
85	42.95	12.78	0.78	3.96
90	41.11	12.23	0.23	1.24

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-5 Controlled Site Runoff

OTTAWA IDF CURVE

Area =	0.267	ha	Qallow =	15.0	L/s
C =	0.80		Vol(max) =	31.8	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	83.32	68.32	20.50
10	104.19	61.49	46.49	27.90
15	83.56	49.31	34.31	30.88
20	70.25	41.46	26.46	31.75
25	60.90	35.94	20.94	31.41
30	53.93	31.83	16.83	30.29
35	48.52	28.63	13.63	28.63
40	44.18	26.08	11.08	26.59
45	40.63	23.98	8.98	24.24
50	37.65	22.22	7.22	21.67
55	35.12	20.73	5.73	18.91
60	32.94	19.44	4.44	15.99
65	31.04	18.32	3.32	12.96
70	29.37	17.34	2.34	9.81
75	27.89	16.46	1.46	6.57
80	26.56	15.68	0.68	3.25
85	25.37	14.97	-0.03	-0.14
90	24.29	14.33	-0.67	-3.59

Proposed Multi-Tower Residential Developpement
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-5 Controlled Site Runoff

OTTAWA IDF CURVE

Area =	0.267	ha	Qallow =	15.0	L/s
C =	1.00		Vol(max) =	97.9	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	180.15	165.15	49.54
10	178.56	132.54	117.54	70.52
15	142.89	106.06	91.06	81.96
20	119.95	89.03	74.03	88.84
25	103.85	77.08	62.08	93.12
30	91.87	68.19	53.19	95.74
35	82.58	61.29	46.29	97.22
40	75.15	55.78	40.78	97.87
45	69.05	51.25	36.25	97.88
50	63.95	47.47	32.47	97.41
55	59.62	44.26	29.26	96.55
60	55.89	41.49	26.49	95.36
65	52.65	39.08	24.08	93.90
70	49.79	36.96	21.96	92.22
75	47.26	35.08	20.08	90.34
80	44.99	33.39	18.39	88.30
85	42.95	31.88	16.88	86.10
90	41.11	30.52	15.52	83.78