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SITE SERVICING & STORMWATER MANAGEMENT REPORT

250 FORESTGLADE CRESCENT
OAC WOMEN SHELTER
OTTAWA, ONTARIO

REPORT NO. 24053

MAY 7, 2025

CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

This report has been prepared in support of the Site Plan Control application for the proposed 13-unit (23.4 population) OAC Women Shelter located at 250 Forestglade Crescent in Ottawa, Ontario. The property is currently vacant. Refer to Pre-Application Consultation meeting notes in Appendix A.

This report forms part of the site servicing and stormwater management design for the proposed development. Also refer to drawings C-1 to C-7 prepared by D.B. Gray Engineering Inc.

2.0 WATER SERVICING

2.1 WATER SUPPLY FOR FIREFIGHTING

The proposed building will have a sprinkler system with the fire department connection FDC located near the northeast corner of the building. There is an existing municipal Class AA fire hydrant located in front of 111-181 Forestglade Crescent. It is about 43 m unobstructed distance to the proposed FDC, which is less than the maximum 45 m required by the Ontario Building Code (OBC); therefore, a private fire hydrant is not required.

In accordance with City of Ottawa Technical Bulletin IWSTB-2024-05, when calculating the required fire flow on private property in urban areas, the Ontario Building Code (OBC) method is to be used. Using the OBC method, the required fire flow is calculated to be 5,400 L/min (90 L/s). Refer to calculations in Appendix B.

The boundary conditions in the 300 mm Forestglade Crescent municipal watermain provided by the City of Ottawa for the 90 L/s fire flow at the subject property indicate a hydraulic grade line (HGL) of 125.7 m. Refer to Appendix B. This HGL calculates to 416 kPa (60 psi). Since the pressure is above the Ontario Building Code's minimum required pressure of 140 kPa (20 psi), there is an adequate water supply for firefighting from the existing municipal water distribution system.

In accordance with City of Ottawa Technical Bulletin ISTB-2018-02, the aggregate flow of all contributing fire hydrants within 150 m of the building shall not be less than the required fire flow. In accordance with City of Ottawa Technical Bulletin ISTB-2018-02 Appendix I, Class AA fire hydrants within 75 m can contribute 5,700 L/min (95 L/s). Therefore, the existing municipal Class AA fire hydrant discussed above can contribute 5,700 L/min (95 L/s), which is greater than the required fire flow of 5,400 L/min (90 L/s).

2.2 DOMESTIC WATER SUPPLY

In accordance with

i. the City of Ottawa Water Design Guidelines for the residential populations, and nonresidential consumption rate and peaking factors,
ii. City of Ottawa Technical Bulletin ISTB-2021-03 for the residential consumption rate, and
iii. the Ministry of the Environment Water Design Guidelines for the residential peaking factors, and

based on the 13 apartment units and ground floor nonresidential, the average daily demand is calculated to be 0.2 L/s, the maximum daily demand is calculated to be 0.8 L/s, and the maximum hourly demand is calculated to be 1.3 L/s. Refer to calculations in Appendix B.

The boundary conditions in the 300 mm Forestglade Crescent municipal watermain provided by the City of Ottawa at the subject property indicate a minimum HGL of 123.8 m and a maximum HGL of 130.1 m. Refer to

Appendix B. Based on these boundary conditions, the pressure at the water meter is calculated to vary between 385 kPa (56 psi) and 447 kPa (65 psi). This is an acceptable range for the proposed development.

A 150 mm water service connecting to the existing 300 mm Forestglade Crescent municipal watermain is proposed to service the sprinkler system. The same 150 mm water service will provide an adequate domestic water supply.

3.0 SANITARY SERVICING

In accordance with

i. the City of Ottawa Sewer Design Guidelines for the residential populations and nonresidential peaking factor,
ii. City of Ottawa Technical Bulletin ISTB-2018-01 for the average daily flows, Harmon Formula correction factor and infiltration allowance,
iii. the Harmon Formula for the residential peaking factor, and

based on the 13 apartment units and ground floor nonresidential, the post-development sanitary flow rate is calculated to be 0.43 L/s. A 150 mm sanitary sewer service at 1% slope (15.23 L/s capacity) is proposed to service the development. At the design flow rate the sanitary sewer service will only be at 3% of its capacity. The proposed 150 mm sanitary sewer service will connect to the existing 250 mm Forestglade Crescent municipal sanitary sewer, which at 0.73% slope has a capacity of 50.81 L/s. Refer to calculations in Appendix C. The proposed development is expected to have an acceptable impact on the 250 mm Forestglade Crescent municipal sanitary sewer.

4.0 STORMWATER MANAGEMENT

4.1 QUANTITY CONTROL

The stormwater quantity control criterion is to control the impervious post-development 100-year peak flow rate to the 5-year event using a runoff coefficient of 0.5. Using the Rational Method with a time of concentration of 10 minutes, the maximum allowable release rate is calculated to be 23.35 L/s. The Rational and Modified Rational Methods were used to calculate the post-development flow rates and corresponding storage volumes. The runoff coefficients for the 100-year event are increased by 25% to maximum 1.00. Refer to calculations in Appendix D.

Drainage Area I (Impervious Uncontrolled Flow Off Site – 39 m^2):
The walkways connecting to the Forestglade Crescent and Blohm Drive sidewalks will drain uncontrolled off site. The flow rates are calculated at a time of concentration of 10 minutes.

	100-Year Event	5-Year Event
Maximum Flow Rate	1.94 L/s	1.02 L/s

Drainage Area II (1,573 m^2):
An inlet control device (ICD) located in the outlet pipe of CB/MH-7 will restrict the flow of stormwater and cause it to backup into the upstream infrastructure and pond above CB/MH-1, CB/MH-2, CB/MH-3, CB/MH-5, CB/MH-6 and CB/MH-7. The ICD will be a plug style with a round orifice located at the bottom of the plug c/w a trash basket manufactured by Pedro Plastics or approved equivalent sized by the manufacturer for a release rate of 21.41 L/s at 2.39 m. It is calculated that an orifice area of 5,133 mm^2 ($\pm$81 mm diameter) and a discharge

coefficient of 0.61 will restrict the outflow rate to 21.41 L/s at a head of 2.39 m. Based on this orifice the maximum outflow rate for the 5-year storm event is calculated to be 20.97 L/s at 2.29 m.

	100-Year Event	5-Year Event
Maximum Release Rate	21.41 L/s	20.97 L/s
Maximum Water Elevation	83.21 m	83.12 m
Maximum Volume Stored	37.25 m^3	12.02 m^3

Summary:

	100-Year Event	5-Year Event
Maximum Allowable Release Rate	23.35 L/s	23.35 L/s
Maximum Release Rate	23.35 L/s	21.99 L/s
Maximum Volume Required	37.25 m^3	12.02 m^3
Maximum Volume Stored	37.25 m^3	12.02 m^3

The maximum impervious post-development release rate during the 100-year event is calculated to be 23.35 L/s, which is equal to the maximum allowable release rate. To achieve the maximum allowable release rate, a maximum storage volume of 37.25 m^3 is required and provided during the 100-year event. The maximum impervious post-development release rate during the 5-year event is calculated to be 21.99 L/s, which is 6% less than the maximum allowable release rate. A maximum storage volume of 12.07 m^3 is required and provided during the 5-year event. The proposed development is expected to have an acceptable impact on the 750 mm Forestglade Crescent municipal storm sewer.

Stress Test:
As required by the City of Ottawa a 'Stress Test' (100-year storm event + 20%) is required to demonstrate that the ponding elevations and spill elevations are lower than the openings in any permanent structures. During the 'Stress Test' the maximum ponding elevation is calculated to be 83.23; 380 mm lower than the floor elevation of the proposed building. The spill elevation is 83.27; 330 mm; lower the floor elevation. Refer to calculation in Appendix D and the Grading Plan (drawing C-2).

4.2 QUALITY CONTROL

Quality control is provided at McEwan Creek Stormwater Facility Pond; no permanent onsite quality control measures are proposed.

An Erosion & Sediment Control Plan has been developed to be implemented during construction. Refer to drawing C-3 and notes 2.1 to 2.6 on drawing C-4.

i. Sediment capture filter sock inserts are to be installed in all existing and proposed catch-basins and catch-basin/manholes adjacent to and within the site.
ii. A silt fence barrier is to be installed along the perimeter of the site.
iii. Any material deposited on the public road is to be removed.

4.3 STORM SERVICING

The peak unrestricted flow rate draining into the private storm sewer system during the 5-year event is calculated to be 42.13 L/s. A 300 mm storm sewer at 0.43% slope (66.29 L/s capacity) is proposed to connect to the existing 750 mm Forestglade Crescent municipal storm sewer, which at 0.51% slope has a capacity of

829.41 L/s. At the peak unrestricted 5-year flow rate the proposed 250 mm storm sewer would be at 64% of its capacity. The peak restricted flow rate draining into the private storm sewer system during the 5-year event is calculated to be 20.94 L/s. At the peak restricted 5-year flow rate the proposed 300 mm storm sewer will only be at 32% of its capacity. Refer to calculations in Appendix D.

The foundation drain will drain to a storm sump and be pumped to a storm drain. Refer to mechanical.

5.0 CONCLUSIONS

1. A private fire hydrant is not required.

2. There is an adequate water supply for firefighting from the existing municipal water distribution system.

3. The existing municipal Class AA fire hydrant can contribute a flow rate which is greater than the required fire flow.

4. There is an acceptable range of water pressures in the existing municipal water distribution system.

5. The post-development sanitary flow rate will be adequately handled by the proposed sanitary sewer service.

6. The proposed development is expected to have an acceptable impact on the existing municipal sanitary sewer.

7. The maximum impervious post-development release rate during the 100-year event will be equal to the maximum allowable release rate.

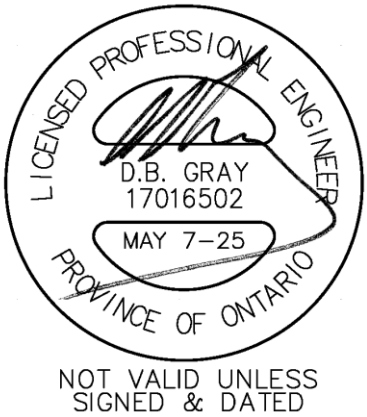
8. The 'Stress Test' demonstrates that ponding elevations and spill elevations are lower than the openings in any permanent structures.

9. The proposed development is expected to have an acceptable impact on the existing municipal storm sewer.

10. An Erosion & Sediment Control Plan has been developed to be implemented during construction.

11. The peak unrestricted flow rates during the 5-year event will be adequately handled by the proposed private storm sewer system.

Prepared by D.B. Gray Engineering Inc.



APPENDIX A

PRE-APPLICATION CONSULTATION MEETING NOTES

File No.: PC2024-0400

October 30, 2024

Saide Sayah
Fotenn Planning
Via email: ssayah@fotenn.com

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Site Plan Control Application – 250 Forestglade Crescent

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on October 9, 2024.

Pre-Consultation Preliminary Assessment

1 ☐	2 ☐	3 ☐	4 ☒	5 ☐

One (1) indicates that considerable major revisions are required while five (5) suggests that the 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.

Next Steps

A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. A second pre-consultation can be submitted if the development proposal changes significantly in scope or design. When prepared, please proceed to make the formal application in accordance with direction provided online.

1. In your subsequent pre-consultation submission or formal submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

Supporting Information and Material Requirements

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

1. You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning

Comments:

1. A Site Plan Control – Standard application will be required for the proposed development

2. A Zoning By-law Amendment will be required. Depending on the rezoning required, this might qualify for minor rezoning under the proposed amendment that is going to Planning and Housing Committee on November 5, 2024.

3. Please ensure there is sufficient screening between the parking lot and the abutting residential property.

4. Please check vehicle turning radii, as a smaller hammer head in the parking lot might be able to accommodate the last row of parking.

5. Please confirm if waste collection will be city or private.

6. Can the permeable surfacing be a soft landscaped area?

7. Please move bicycle parking to a more secure and covered location.

8. Please note where snow will be stored, or if it will be removed from the site.

9. We noticed that the smoking area is close to the garden boxes. Please ensure enclosed smoking area is ventilated and provide more detail. Is there another way to organize this yard?

10. The children's play area is at the front of the building. Please consider a safer location.

11. Please consider making the circular corner of the building a prominent feature on the building.

12. Please consider moving all of the parking behind the front wall of the building.

13. A noise study is required under Section 10.2.1 of the Official Plan for this development. If you would like this requirement removed, please justify in the planning rationale and we will bring the request to Council for a decision.

Urban Design

Comments:

14. Please prepare a short design brief with the site plan application to describe the proposal

15. Can the turn around at the rear of the site be decreased? Does it need to be round – can it just be a small hammerhead?

16. Look for opportunities to remove the van parking space in front of the building.

17. Will the childrens place area be fenced? If so, please consider transparent fencing – such as low metal pickets and low landscaping to help integrate the proposed development into the neighbourhood.

18. Please ensure that parking and garbage are well screened from the public realm (including pathway) with landscaping

19. Are there opportunities to provide the bicycle parking more interior to the site to increase security?

20. Please ensure that you provide street trees along the ROW and MUP

21. Please ensure that the elevations fronting the public realm include a high percentage of glazing.

22. Please ensure that the design brief discusses the purpose and programming of the outdoor amenity spaces.

23. Please discuss treatment to provide transition to adjacent residential buildings.

24. Please ensure that the landscape treatment and architecture highlight the front entrance of the building.

Engineering

Comments:

25. The Stormwater Management Criteria, for the subject site, is to be based on the following:

    a. HGL Analysis to be completed and included as part of the Site Servicing and SWM report if basement levels are contemplated.

    b. **Water Quality Control**: provided at McEwan Creek Stormwater Facility Pond.

c. **Water Quantity Control**: Please control the hard surfaces post-development runoff from the subject site to the 5-year event with C=0.5 for all storm events up to and including the 100-year storm event.

d. Please provide a Pre-Development Drainage Area Plan to define the pre-development drainage areas/patterns. Existing drainage patterns shall be maintained and discussed as part of the proposed SWM solution.

e. Ponding Notes:

   i. 100-year spill elevation must be 300mm lower than any building opening or ramp.

   ii. Demonstrate that the stress test spill elevation (100-year +20% event) does not spill onto any permanent structures.

   iii. The maximum permissible ponding depth for the 100-year storm event is 350mm. No spilling to adjacent sites.

   iv. Please note that as per Technical Bulletin PIEDTB-2016-01 section 8.3.11.1 (p.12 of 14) there shall be no surface ponding on private parking areas during the 2-year storm rainfall event. 100-year spill elevation must be 300mm lower than any building opening or ramp

f. Document how any foundation drainage system will be integrated into the servicing design and show the positive outlet on the plan. Foundation drainage is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. Due to the high existing 100-year HGL, it is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.

g. Please note that the minimum orifice dia. for a plug style ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s in order to reduce the likelihood of plugging.

h. If rooftop control and storage is proposed as part of the SWM solutions, sufficient details (Cl. 8.3.8.4) shall be discussed and documented in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system. Provide a Roof Drain Plan as part of the submission.

i. **Underground Storage**: Please note that 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.

i. 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 equal to 50% of the peak allowable rate shall be applied 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 modelers in the Water Resources Group. Regarding 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.

ii. 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. UG storage to provide actual 5- and 100-year event storage requirements.

26. General Servicing

a. Provide existing servicing information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.

b. CCTV sewer inspection of city infrastructure is required to record pre and post construction conditions and ensure there is no damage to City Assets.

c. It is the sole responsibility of the consultant to investigate the location of existing underground utilities in the proposed servicing area and submit a request for locates to avoid conflict(s). The location of existing utilities and services shall be documented on an Existing Conditions Plan.

d. Any easements on the subject site shall be identified and respected by any development proposal and shall adhere to the conditions identified in the easement agreement. A legal survey plan shall be provided, and all easements shall be shown on the engineering plans.

e. All underground and above ground building footprints and permanent walls need to be shown on the plans to confirm that any permanent structure does not extend either above or below into the existing property lines and sight triangles.

27. Storm Sewer

a. A 750mm dia. concrete storm sewer (1994) is available for connection on Forestglade Crescent and a 1050mm dia. concrete storm sewer (1991) is available for connection on Blohm Drive.

b. A storm sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) Monitoring Devices.

28. Sanitary Sewer

a. A 250 mm dia. PVC Sanitary sewer is available for connection on Forestglade Crescent and a 375mm dia. PVC sanitary sewer if available for connection on Blohm Drive.

b. Include correspondence from the Architect within the Appendix of the report confirming the number of residential units per building and a unit type breakdown for each of the buildings to support the calculated building populations.

c. Please apply the wastewater design flow parameters in Technical Bulletin PIEDTB-2018-01.

d. Sanitary sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) Monitoring Devices.

29. Water:

a. A 300 mm dia. PVC watermain (1994) is available at Forestglade Crescent and a 300 mm dia. DI watermain (1991) is available on Blohm Drive.

b. Water Supply Redundancy: Residential buildings with a basic day demand greater than 50m3/day (0.57 L/s) or with 50+ units are required to be connected to a minimum of two water services, with each their own meter, separated by an isolation valve to avoid a vulnerable service area.

c. Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the proposed development, including calculations. Please provide the following information:

i. Plan showing the proposed location of service(s).

ii. Type of development and the amount of fire flow required (L/min). Note: The OBC method can be used if the fire demand for the private property is less than 9,000 L/min. If the OBC fire demand reaches 9000 L/min, then the FUS method is to be used.

iii. Average daily demand: __L/s.

iv. Maximum daily demand: __L/s.

v. Maximum hourly daily demand: __L/s.

vi. Note: Use Table 3-3 of the MOE Design Guidelines for Drinking-Water System to determine Maximum Day and Maximum Hour peaking factors for 0 to 500 persons and use Table 4.2 of the Ottawa Design Guidelines, Water Distribution for 501 to 3,000 persons.

d. Please review Technical Bulletin ISTB-2018-02, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A hydrant coverage figure shall be provided and demonstrate there is adequate fire protection for the proposal.

e. A Water Data Card will have to be submitted to size the water meter.

f. Any proposed fire (emergency) route is to be to the satisfaction of Fire Services. Please note that a siamese connection needs to be within 45m from an existing fire hydrant as per (OBC – 3.2.5.16 Fire Department Connections).

30. Grading and Erosion

a. Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent residential properties. A topographical plan of survey shall be provided as part of the submission and a note provided on the plans.

b. Erosion and sediment control plan must be provided.

c. Any portion of the subject property which is intended to be used for permanent or temporary snow storage shall be as shown on the approved site plan and grading plan. Snow storage shall not interfere with approved grading and drainage patters or servicing. Snow storage areas shall be setback from the property lines, foundations, fencing or landscaping a minimum of 1.5m. Snow storage areas shall not occupy driveways, aisles, required parking spaces or any portion of a road allowance. If snow is to be removed from the site, please indicate this on the plan(s).

d. Street catch basins are not to be located at any proposed entrances.

e. Depressed driveways are discouraged and are not allowed in sag locations. For other locations, the builder must ensure that the maximum depth of flow on the street during the 100-year and stress test events will not spill onto the depressed driveway.

f. 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.

31. Environmental

a. A Phase I ESA is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.

b. The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O.Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.

c. Official Plan: Section 10. Protection of Health and Safety (ottawa.ca)

32. Geotechnical

a. A Geotechnical Study/Investigation shall be prepared in support of this development proposal.

b. Reducing the groundwater level in this area can lead to potential damages to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs to be discussed and investigated to ensure there will be no short term and long-term damages associated with lowering the groundwater in this area.

c. Geotechnical Study shall be consistent with the Geotechnical Investigation and Reporting Guidelines for Development Applications. Geotechnical Investigation and Reporting (ottawa.ca)

d. If Sensitive marine clay soils are present in this area that are susceptible to soil shrinkage that can lead to foundation and building damages. All six (6) conditions listed in the Tree Planting in Sensitive Marine Clay Soils-2017 Guidelines are required to be satisfied. Note that if the plasticity index of the soil is determined to be less than 40% a minimum separation between a street tree and the proposed building foundations of 4.5m will

need to be achieved. A memorandum addressing the Tree in Clay Soil Guidelines prepared by a geotechnical engineer is required to be provided to the City. Tree Planting in Sensitive Marine Clay Soils - 2017 Guidelines (ottawa.ca)

33. Regarding Quantity Estimates

    a. 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.

34. For any proposed exterior light fixtures, please provide certification from a licensed professional engineer confirming lighting has been designed only using fixtures that meet the criteria for full cut-off classification as recognized by the Illuminating Engineering Society of North America and result in minimal light spillage onto adjacent properties (maximum allowable spillage is 0.5 fc). Additionally, include in the submission the location of the fixtures, fixture type (make, model, part number and mounting height).

35. Gas pressure regulating stations: A gas pressure regulating station may be required depending on HVAC needs. 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.

Please refer to the City of Ottawa Guide to Preparing Studies and Plans [Engineering]: Planning application submission information and materials. The guide outlines the requirement for a statement to be provided on the plan about where the property boundaries have been derived from.

Please contact the GeoInformation centre for any related studies or as-built drawings at geoinformation@ottawa.ca

Feel free to contact Anton Chetrar, Infrastructure Project Manager, for follow-up questions at anton.chetrar@ottawa.ca .

Noise

Comments:

36. Noise study required for road, due to proximity to a collector (Blohm Drive).

Feel free to contact Rochelle Fortier-Lesage (rochelle.fortier@ottawa.ca), Transportation Project Manager, for follow-up questions.

Transportation

Comments:

37. Include a completed TIA Screening Form and TDM Checklists (TDM Measures and TDM-Supportive Development Design and Infrastructure) with the development application. A full Transportation Impact Assessment is not required.

38. Ensure that the development proposal complies with the Right-of-Way protection requirements - See Schedule C16 of the Official Plan.

    a. Corner triangles as per OP Annex 1 - Road Classification and Rights-of-Way on the final plan will be required (measure on the property line/ROW protected line; no structure above or below this triangle). The City requires a 3 metre x 9 metre corner triangle at Collector/Local intersections with the longer portion on the higher road segment.

    b. ROW and corner triangles must be unincumbered and conveyed at no cost to the City. Note that conveyance of the ROW/corner triangle will be required prior to registration of the SP agreement. Additional information on the conveyance process can be provided upon request.

    c. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.

39. Provide a new concrete sidewalk with a minimum width of 1.8m (2.0m preferred) to the western edge of the driveway, including a depressed curb on the western edge of the driveway. Please consider extending the concrete sidewalk along the entire frontage of Forestglade Crescent. The “proposed walkway” shown on the ground floor plan should be extended to the eastern property line and across the proposed access per City Specification 7.1.

40. Consider providing a direct pedestrian connection for residents from the building to the existing sidewalk along Blohm Drive.

41. Reduce the width of the driveway and dimension it on the plan. For a double traffic lane that leads to less than 20 parking spaces, the driveway width should be reduced to 3.6m.

42. AODA legislation applies for all areas accessible to the public (i.e. outdoor pathways, parking, etc.).

    a. Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.

b. Clearly define accessible parking stalls and ensure they meet AODA standards (include an access aisle next to the parking stall and a pedestrian curb ramp at the end of the access aisle, as required).

c. Please consider using the City's Accessibility Design Standards, which provide a summary of AODA requirements.

43. On site plan:

a. Ensure site accesses meet the City's Private Approach Bylaw and all driveways/aisles meet the requirements outlined in Section 107 of the Zoning By-law.

b. Show all details of the roads abutting the site; include such items as pavement markings, accesses and/or sidewalks.

c. Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.

d. Turning movement diagrams required for internal movements (loading areas, garbage).

e. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).

f. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)

g. Sidewalk is to be continuous across access as per City Specification 7.1.

h. Grey out any area that will not be impacted by this application.

Feel free to contact Rochelle Fortier-Lesage (rochelle.fortier@ottawa.ca), Transportation Project Manager, for follow-up questions.

Forestry

Comments:

44. A Tree Conservation Report and a Landscape Plan must be submitted with the Site Plan Control application. If all reporting requirements are met, the plans can be combined.

45. Assess existing trees early on so the site design can accomodate retention of these trees. The preference would be to keep excavation outside the critical root zone.

46. Please plant trees in the Right of Way, wherever feasible. Planting requirements in this area are listed below. Large canopy, native species are the preferred for all tree plantings (private and public).

47. Unless 2m or more of softscaped space separating the parking area from the eastern property boundaries, a combination of shrubs and/or fencing would be a better screening option.

48. If the sidewalk can meet City requirements and terminate outside of the CRZ of the existing spruce tree, it would allow for retention of this mature tree.

49. Section 4.1.4 of the Official Plan requires regular spacing of trees throughout surface parking areas.

50. **Tree Conservation Report requirements. The following Tree Conservation Report (TCR) requirements have been adapted from the Schedule E of the Urban Tree Protection Guidelines – for more information on these requirements please contact hayley.murray@ottawa.ca**

- A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
- Any tree 10 cm in diameter or greater and City-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.
- The TCR must contain 2 separate plans/maps:
- Plan/Map 1 - show existing conditions with tree cover information.
- Plan/Map 2 - show proposed development with tree cover information.
- The TCR must list all trees on site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition. Please note that averages can be used if there are forested areas.
- Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)
- If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.
- The removal of trees on a property line will require the permission of both property owners.
- All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification or by searching Ottawa.ca
- The city encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.
- Removal of a City tree is not permitted unless justified. If justified, monetary compensation for the value of the tree must be paid before a tree removal permit is issued.

51. **Landscape Plan (LP) requirements.**

- Landscape Plan Terms of Reference must be adhered to for all tree planting: Click Here. For more information on these requirements please contact hayley.murray@ottawa.ca

52. **Additional Elements for Tree Planting in the Right of Way:**

- Please ensure any retained trees are shown on the LP
- Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.
- Soil Volume - Please demonstrate as per the Landscape Plan Terms of Reference that the available soil volumes for new plantings will meet or exceed the minimum soil volumes requested.
- The city requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.
- Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. Please provide a projection of the future canopy cover for the site to 40 years

- Minimum Setbacks
    a. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
    b. Maintain 2.5m from curb
    c. Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.
    d. Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas.
    e. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

- Tree specifications
    a. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
    b. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.
    c. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.
    d. No root barriers, dead-man anchor systems, or planters are permitted.
    e. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

Feel free to contact Hayley Murray, Planning Forester, for follow-up questions.

Other

53. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design and will be applicable to Site Plan Control and Plan of Subdivision applications.

    a. The HPDS was passed by Council on April 13, 2022, but is not in effect at this time, as Council has referred the 2023 HPDS Update Report back to staff with the direction to bring forward an updated report to Committee at a later date. The timing of an updated report to Committee is unknown at this time, and updates will be shared when they are available.

    b. Please refer to the HPDS information at ottawa.ca/HPDS for more information.

54. Under the Affordable Housing Community Improvement Plan, a Tax Increment Equivalent Grant (TIEG) program was created to incentivize the development of affordable rental units. It provides a yearly fixed grant for 20 years. The grant helps offset the revenue loss housing providers experience when incorporating affordable units in their developments.

    a. To be eligible for the TIEG program you must meet the following criteria:

        i. the greater of five units OR 15 per cent of the total number of units within the development must be made affordable

        ii. provide a minimum of 15 per cent of each unit type in the development as affordable

        iii. enter into an agreement with the city to ensure the units maintain affordable for a minimum period of 20 years at or below the city-wide average market rent for the entire housing stock based on building form and unit type, as defined by the Canada Mortgage and Housing Corporation

        iv. must apply after a formal Site Plan Control submission, or Building Permit submission for projects not requiring Site Plan Control, and prior to Occupancy Permit issuance

    b. Please refer to the TIEG information *at Affordable housing community improvement plan / Plan d'améliorations communautaires pour le logement abordable for more details or contact the TIEG coordinator via email at affordablehousingcip@ottawa.ca.*

Parkland

1. No cash-in-lieu of parkland / parkland dedication is required, where under Section 11.2.e of the Parkland Dedication By-law No. 2022-280:

No conveyance of land or payment of cash-in-lieu under this by-law is required in the case of the development or redevelopment of: a non-profit rental or not-for-profit sponsored ownership residential development, or other development that provides public facilities or services and that is undertaken by a non-profit organization;

2. And where:

   ***"non-profit organization"** means a corporation or other similar entity that provides a service to the public, is subsidized in whole or in part by public money and its principles are dictated by one or more provincial or federal acts regulating non-profit organizations;*

3. Please note, if the proposed unit count, land use changes or gross floor area changes, then the parkland dedication requirement will be re-evaluated accordingly.

Feel free to contact Phil Castro, Parks Planner, for follow-up questions.

Submission Requirements and Fees

1. Zoning By-law Amendment and Site Plan Standard applications are required.
   a. Additional information regarding fees related to planning applications can be found here. Please note that qualified affordable housing projects are exempt from the planning fee, but other fees such as the conservation authority fee, legal fees, and engineering design, review and inspection fees will still apply.
2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
   a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.
3. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Kind regards,
Margot Linker

c.c. Wendy Tse
Anton Chetrar
Rochelle Fortier
Lisa Stern
Hayley Murray
Phil Castro

APPENDIX B

WATER SERVICING

D.B. Gray Engineering Inc.

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle
Ottawa, Ontario K1T 4E9

613-425-8044
d.gray@dbgrayengineering.com

March 7, 2025

250 Forestglade Crescent
OAC Women Shelter
Ottawa, Ontario

FIRE FLOW CALCULATIONS
OBC Method

Q = Required water supply in litres
= KVS_{Total}

K = Water supply coefficient as per OBC A-3.2.5.7. Table 1
= 23 Building is of combustible construction with fire separations without fire resistance ratings.

V = Building volume in cubic meters

	Floor Area (sq.m)	Height (m)	Volume (cu.m)
3rd Floor:	258.7	4.850	1,255
2nd Floor:	687.7	3.150	2,166
1st Floor:	673.2	3.675	2,474
			5,895

S_{Total} = Total of spatial coefficients from exposure distances
= $1.0 + S_{Side\ 1} + S_{Side\ 2} + S_{Side\ 3} + S_{Side\ 4}$

	Spatial Coefficient	Exposure Distance (m)	
$S_{Side\ 1}$	0.2	8	(to north property line)
$S_{Side\ 2}$	0.0	21	(to east property line)
$S_{Side\ 3}$	0.0	17	(to centerline of Forestglade Crescent)
$S_{Side\ 4}$	0.0	17	(to centerline of Blohm Drive)
S_{Total}	1.2		

Q = 162,701 L
= 5,400 L/min as per OBC A-3.2.5.7. Table 2
= 90 L/s

---

90 L/s Fire Flow HGL:	125.7	m			
Elevation at Fire Hydrant:	83.28	m			
Static Pressure at Fire Hydrant:	42.4	m	416	kPa	60 psi

D.B. Gray Engineering Inc.

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle
Ottawa, Ontario K1T 4E9

613-425-8044
d.gray@dbgrayengineering.com

February 21, 2025

250 Forestglade Crescent
OAC Women Shelter
Ottawa, Ontario

WATER DEMAND CALCULATIONS

	Number of Units	Persons per Unit	Population
1 Bedroom:	0	1.4	0
2 Bedroom:	0	2.1	0
3 Bedroom:	0	3.1	0
Average:	13	1.8	23.4
Total:	13		23.4

Residential Average Daily:	280	L/capita/day				
	4.6	L/min	0.1	L/s	1.2	USgpm
Residential Maximum Daily:	9.5	(Peaking factor for a population of 23.4 interpolated from MOE Design Guidelines for Drinking Water Systems Table 3-3)				
	43.2	L/min	0.7	L/s	11.4	USgpm
Residential Maximum Hourly:	14.3	(Peaking factor for a population of 23.4 interpolated from MOE Design Guidelines for Drinking Water Systems Table 3-3)				
	65.1	L/min	1.1	L/s	17.2	USgpm
Nonresidential Average Daily:	0.2339	ha				
	28,000	L/ha/day				
	6,549	L/day				
	24	hour day				
	4.5	L/min	0.1	L/s	1.2	USgpm
Nonresidential Maximum Daily:	1.5	(Peaking factor as per City of Ottawa Water Design Guidelines)				
	6.8	L/min	0.1	L/s	1.8	USgpm
Nonresidential Maximum Hourly:	1.8	(Peaking factor as per City of Ottawa Water Design Guidelines)				
	12.3	L/min	0.2	L/s	3.2	USgpm
Total Average Daily:	9.1	L/min	0.2	L/s	2.4	USgpm
Total Maximum Daily:	50.0	L/min	0.8	L/s	13.2	USgpm
Total Maximum Hourly:	77.3	L/min	1.3	L/s	20.4	USgpm

Elevation of Water Meter:	84.50	m			
Finished Floor Elevation:	83.60	m			
Minimum HGL:	123.8	m			
Static Pressure at Water Meter:	39.3	m	385	kPa	56 psi
Maximum HGL:	130.1	m			
Static Pressure at Water Meter:	45.6	m	447	kPa	65 psi

D.B. Gray Engineering Inc.

Ryan Faith <r.faith@dbgrayengineering.com>

RE: Request for Boundary Conditions - 250 Forestglade Crescent

1 message

Chetrar, Anton <anton.chetrar@ottawa.ca> Fri, Mar 7, 2025 at 9:22 AM
To: Ryan Faith <r.faith@dbgrayengineering.com>
Cc: Douglas Gray <d.gray@dbgrayengineering.com>, "Duquette, Vincent" <Vincent.Duquette@ottawa.ca>, "Soyak, Solé" <Sole.Soyak@ottawa.ca>

Hi Ryan,

Please find updated Boundary Conditions for 250 Forestglade Crescent.

The following are boundary conditions, HGL, for hydraulic analysis at 250 Forestglade Crescent (zone 2W2C) assumed to be connected to the 305mm watermain on Forestglade Crescent (see attached PDF for location).

Minimum HGL = 123.8 m

Maximum HGL = 130.1 m

Max Day + Fire Flow (90 L/s) = 125.7 m

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

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

Regards,

Anton Chetrar | P. Eng

Project Manager, Infrastructure - Gestionnaire de projet, Projets d'infrastructure

Development Review All Wards (DRAW) | Direction de l'examen des projets d'aménagement -Tous les quartiers (EPATQ)

Planning, Development and Building Services Department (PDBS) and Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West |110 avenue Laurier Ouest

Ottawa, ON K1P 1J1

Tel.|Tél. 613.580.2424 ext.60865

anton.chetrar@ottawa.ca

Classified as City of Ottawa - Internal / Ville d'Ottawa - classé interne

From: Ryan Faith <r.faith@dbgrayengineering.com>
Sent: February 15, 2025 9:59 AM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>
Cc: Douglas Gray <d.gray@dbgrayengineering.com>; Duquette, Vincent <Vincent.Duquette@ottawa.ca>; Soyak, Solé <Sole.Soyak@ottawa.ca>
Subject: Re: Request for Boundary Conditions - 250 Forestglade Crescent

Hi Anton,

The floor areas and heights changed just enough to bump our fire flow up to 90 L/s. Please provide that HGL.

Thanks,

Ryan Faith
D.B. Gray Engineering Inc.
700 Long Point Circle
Ottawa, Ontario K1T 4E9
613-425-8044

On Thu, Feb 6, 2025 at 10:44 AM Chetrar, Anton <anton.chetrar@ottawa.ca> wrote:

> Hi Ryan,
>
> Please find below requested Boundary Conditions for 250 Forestglade Crescent.
>
> The following are boundary conditions, HGL, for hydraulic analysis at 250 Forestglade Crescent (zone 2W2C) assumed to be connected to the 305mm watermain on Forestglade Crescent (see attached PDF for location).
>
> Minimum HGL = 123.8 m
>
> Maximum HGL = 130.1 m
>
> Max Day + Fire Flow (75 L/s) = 126.0 m

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

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

Regards,

Anton Chetrar | P. Eng

Project Manager, Infrastructure - Gestionnaire de projet, Projets d'infrastructure

Development Review All Wards (DRAW) | Direction de l'examen des projets d'aménagement -Tous les quartiers (EPATQ)

Planning, Development and Building Services Department (PDBS) and Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West |110 avenue Laurier Ouest

Ottawa, ON K1P 1J1

Tel.|Tél. 613.580.2424 ext.60865

anton.chetrar@ottawa.ca

From: Ryan Faith <r.faith@dbgrayengineering.com>
Sent: January 16, 2025 3:02 PM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>
Cc: Douglas Gray <d.gray@dbgrayengineering.com>
Subject: Request for Boundary Conditions - 250 Forestglade Crescent

Hi Anton,

Please provide the boundary conditions for the 300 mm Forestglade Crescent municipal watermain at 250 Forestglade

Crescent. Point of connection is expected to be at the east end of the Forestglade Crescent frontage. We have calculated the following expected demands:

Fire flow demand: 75 L/s
Average daily demand: 0.2 L/s
Maximum daily demand: 0.8 L/s
Maximum hourly demand: 1.3 L/s

Calculations are attached.

Thanks,

Ryan Faith
D.B. Gray Engineering Inc.
700 Long Point Circle
Ottawa, Ontario K1T 4E9
613-425-8044

'

'

'

This e-mail originates from the City of Ottawa e-mail system. Any distribution, use or copying of this e-mail or the information it contains by other than the intended recipient(s) is unauthorized. Thank you.

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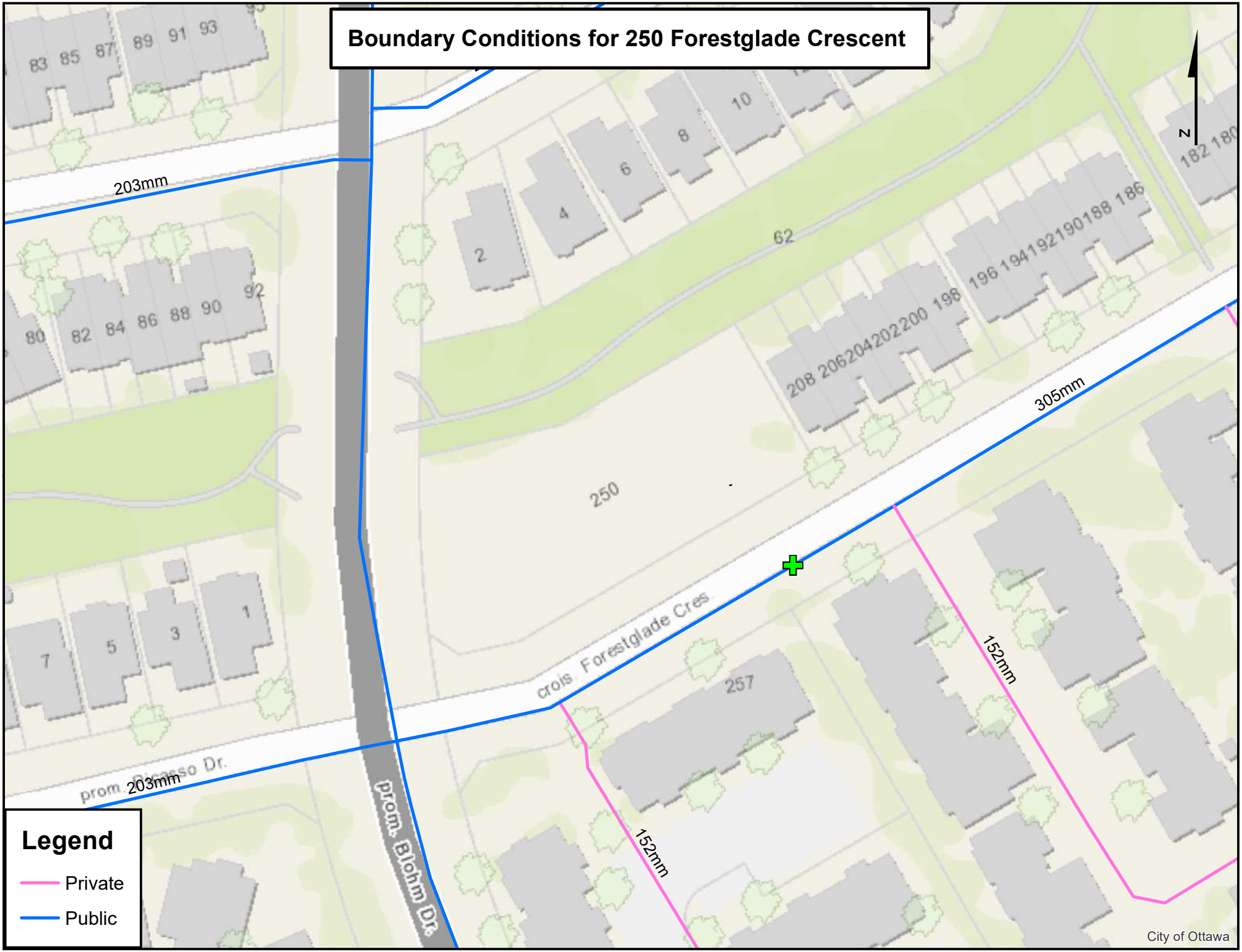
'

250 Forestglade Cres REVISED March 2025.pdf
627K


Boundary Conditions for 250 Forestglade Crescent
N
203mm
305mm
152mm
152mm
203mm
250
257
crois. Forestglade Cres.
prom. Bloom Dr.
prom. Picasso Dr.
Legend
Private
Public
City of Ottawa

APPENDIX C

SANITARY SERVICING

D.B. Gray Engineering Inc.

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle
Ottawa, Ontario K1T 4E9

613-425-8044
d.gray@dbgrayengineering.com

SANITARY SEWER CALCULATIONS

Project: 250 Forestglade Crescent
OAC Women Shelter
Ottawa, Ontario

Date: April 4, 2025

Residential Average Daily Flow:	280	L/capita/day	Residential Peaking Factor:	Harmon Formula	
Commercial Average Daily Flow:	28,000	L/ha/day	Harmon Formula Correction Factor:	0.8	
Institutional Average Daily Flow:	28,000	L/ha/day	Commercial Peaking Factor:	1.5	
Light Industrial Average Daily Flow:	35,000	L/ha/day	Institutional Peaking Factor:	1.5	
Heavy Industrial Average Daily Flow:	55,000	L/ha/day	Industrial Peaking Factor:	Ministry of the Environment	
Infiltration Allowance:	0.33	L/s/ha	Manning's Roughness Coefficient:	0.013	

		Residential													Nonresidential				Infiltration			Q	Sewer Data						
		Individual									Cumulative				Individual	Cumulative			Individual	Cumulative		Total						
Location		Single	Semi	Duplex	Apartment	Apartment	Apartment	Apartment	Area	Population	Area	Population	Peaking	Flow Rate	Area	Area	Peaking	Flow Rate	Area	Area	Flow Rate	Flow Rate	Length	Nominal Diameter	Actual Diameter	Slope	Velocity	Q_{Full} Capacity	
From	To	Family	Detached		(1 Bed)	(2 Bed)	(3 Bed)	(Average)	(ha)		(ha)		Factor	(L/s)	(ha)	(ha)	Factor	(L/s)	(ha)	(ha)	(L/s)	(L/s)	(m)	(mm)	(mm)	(%)	(m/s)	(L/s)	Q / Q_{Full}
		ppu = 3.4	ppu = 2.7	ppu = 2.3	ppu = 1.4	ppu = 2.1	ppu = 3.1	1.8																					
Building	250 SAN							13		23.4		23.4	3.2	0.24	0.2339	0.2339	1.5	0.11	0.2339	0.2339	0.08	0.43		150	150	1.00	0.86	15.23	3%
Existing 250 mm Forestglade Crescent Municipal Sanitary Sewer:																								250	250	0.73	1.04	50.81	

ONTARIO BUILDING CODE DATA MATRIX

PART 3 - FIRE PROTECTION, OCCUPANT SAFETY, AND ACCESSIBILITY

NAME OF PRACTICE: STANDARD BOLD	LGA ARCHITECTURAL PARTNERS
CERTIFICATE OF PRACTICE NUMBER:	0000
ADDRESS:	100B-310 SPADINA AVENUE, TORONTO, ON. M5T 2E8
CONTACT:	CONTACT NAME HERE
NAME OF PROJECT:	PROJECT NAME
PROJECT LOCATION:	123 MAIN STREET, CITY, PROVINCE, A1B 2C3
DATE:	00 MONTH 0000

3.00	**BUILDING CODE VERSION**	O.REG. 332 / 12			LAST AMENDMENT: O.REG. 861 / 21			**OBC REFERENCE**
3.01	**PROJECT TYPE**	NEW CONSTRUCTION BUILDING TYPE						**[A] 1.1.2.**
3.02	**MAJOR OCCUPANCY CLASSIFICATION**	**GROUP / DIVISION:**	**DESCRIPTION:**		**USE:**			**3.1.2.1.(1).**
		XXXXX	XXXXXXXXXXXXX		XXXXXXXXXXXXXXX			
		XXXXX	XXXXXXXXXXXXX		XXXXXXXXXXXXXXX			
3.03	**SUPERIMPOSED MAJOR OCCUPANCIES**	YES/NO						**3.2.2.7.**
3.04	**BUIDING AREA (m²)**	**DESCRIPTION:**			**EXISTING (m²):**	**NEW (m²):**	**TOTAL (m²):**	**[A] 1.4.1.2.**
		EXISTING BUILDING AND NEW ADDITION			N/A	690.0 (SEE NOTE 2)	690.0	
3.05	**GROSS AREA (m²)**	**FLOOR LEVEL:**	**DESCRIPTION:**		**EXISTING (m²):**	**NEW (m²):**	**TOTAL (m²):**	**[A] 1.4.1.2.**
		GROUND FLOOR	NEW BUILDING		N/A	673.2 (SEE NOTE 2)	673.2	
		SECOND FLOOR	NEW BUILDING		N/A	687.7	687.7	
		THIRD FLOOR	NEW BUILDING		N/A	258.7	258.7	
		TOTAL (m²):			N/A	1,619.6	1,619.6	
3.06	**MEZZANINE AREA (m²)**	**DESCRIPTION**:			**EXISTING (m²):**	**NEW (m²):**	**TOTAL (m²):**	**3.2.1.1.**
		N/A			000.00	000.00	000.00	
		TOTAL (m²):						
3.07	**BUILDING HEIGHT**	03	STOREYS ABOVE GRADE		11.80 ABOVE ESTABLISHED GRADE			**[A] 1.4.1.2. AND 3.2.1.1.**
		00	STOREYS BELOW GRADE					
3.08	**HIGH BUILDING**	YES/NO						**3.2.6.**
3.09	**NUMBER OF STREETS**	02 STREET						**3.2.2.10 AND 3.2.5.**
3.10	**BUILDING CLASSIFICATION**	3.2.2.43A	GROUP -, UP TO # STOREYS, SPRINKLERED, COMBUSTIBLE CONSTRUCTION					**3.2.2.20-83**
3.11	**SPRINKLER SYSTEM**	REQUIRED/NO	AREA PROVIDED					**3.2.1.5. AND 3.2.2.17**
3.12	**STANDPIPE SYSTEM**	REQUIRED/NO						**3.2.9.**
3.13	**FIRE ALARM SYSTEM**	YES/NO	TYPE PROVIDED:					**3.2.4.**
3.14	**WATER SUPPLY IS ADEQUATE**	YES/NO						
3.15	**CONSTRUCTION TYPE**	**PERMITTED:**	COMBUSTIBLE/NON-COMBUSTIBLE		**CONSTRUCTION: DESCRIPTION**			**3.2.2.20-83 AND 3.2.1.4.**
		PROPOSED:	COMBUSTIBLE AND NON-COMBUSTIBLE		YES/NO			
3.16	**IMPORTANCE CATEGORY**	NORMAL						**4.1.2.1.(3) / T.4.1.2.1B**
3.17	**SEISMIC HAZARD INDEX**	0.00						**4.1.8.18.(1)**
3.18	**OCCUPANT LOAD**	**FLOOR LEVEL:**	**AREA:**	**OCCUPANCY TYPE:**	**BASED ON:**	**OCCUPANT LOAD (PERSONS):**		**3.1.17.**
		GROUND FLOOR	SUITE 101 AND 102	RESIDENTIAL	3.1.17.1.(1)(b)	2 + 2 = 4		
		SECOND FLOOR	UNITS 201 -	RESIDENTIAL	3.1.17.1.(1)(b)	2 x 10 = 20		
		THIRD FLOOR	STORAGE ONLY	RESIDENTIAL	3.1.17.1.(1)(b)	0		

FORMLINE ARCHITECTURE

204-267 Esplanade West
North Vancouver, BC, Canada V7M 1A5
604 912 0203
formline.ca

LGA architectural partners

310 Spadina Ave, Suite 100B
Toronto, Ontario, Canada M5T 2E8
416 203 7600
lga-ap.com

APPENDIX D

STORMWATER MANAGEMENT

SUMMARY TABLES

100-YEAR EVENT

Drainage Area	Maximum Allowable Release Rate (L/s)	Maximum Release Rate (L/s)	Maximum Volume Required (cu.m)	Maximum Volume Stored (cu.m)
AREA I (Uncontrolled Flow Off Site)	-	1.94	-	-
AREA II	-	21.41	37.25	37.25
TOTAL	23.35	23.35	37.25	37.25

5-YEAR EVENT

Drainage Area	Maximum Allowable Release Rate (L/s)	Maximum Release Rate (L/s)	Maximum Volume Required (cu.m)	Maximum Volume Stored (cu.m)
AREA I (Uncontrolled Flow Off Site)	-	1.02	-	-
AREA II	-	20.97	12.02	12.02
TOTAL	23.35	21.99	12.02	12.02

April 4, 2025

250 Forestglade Avenue

Ottawa, Ontario

STORMWATER MANAGEMENT CALCULATIONS
Modified Rational Method

MAXIMUM ALLOWABLE RELEASE RATE

Impervious Area (A):	1,612	sq.m
Time of Concentration:	10	min
Rainfall Intensity (i):	104	mm/hr (5-Year Event)
Runoff Coeficient (C):	0.5	
Maximum Allowable Release Rate (2.78AiC):	23.35	L/s

100-YEAR EVENT

DRAINAGE AREA I (Impervious Uncontrolled Flow Off Site)

(100-YEAR EVENT)

			C
Roof Area:	0	sq.m	1.00
Hard Area:	39	sq.m	1.00
Soft Area:	16	sq.m	0.25
Total Catchment Area:	39	sq.m	1.00
Area (A):	39	sq.m	
Time of Concentration:	10	min	
Rainfall Intensity (i):	179	mm/hr	(100-Year Event)
Runoff Coeficient (C):	1.00		
Flow Rate (2.78AiC):	1.94	L/s	

DRAINAGE AREA II

(100-YEAR EVENT)

			C
Roof Area:	674	sq.m	1.00
Hard Area:	899	sq.m	1.00
Soft Area:	724	sq.m	0.25
Total Catchment Area:	1,573	sq.m	1.00

Water Elevation:	83.21	m
Head:	2.38	m
Centroid of ICD Orifice:	80.83	m
Invert of Outlet Pipe of CB/MH-7:	80.79	m
Orifice Diameter:	81	mm
Orifice Area:	5,133	sq.mm
Discharge Coefficient:	0.61	
Maximum Release Rate:	21.41	L/s

CB/MH	Top Area	Depth	Volume	
CB/MH-1	35	0.24	4.28	cu.m
CB/MH-2	42	0.27	5.75	cu.m
CB/MH-3	98	0.33	16.38	cu.m
CB/MH-5	26	0.05	0.46	cu.m
CB/MH-6	10	0.03	0.11	cu.m
CB/MH-7	63	0.32	10.27	cu.m
		Maximum Volume Stored:	37.25	cu.m
		Maximum Volume Required:	37.25	cu.m

DRAINAGE AREA II (Continued)

(100-YEAR EVENT)

Time (min)	i (mm/hr)	2.78AiC (L/s)	ICD Release Rate (L/s)	Stored Rate (L/s)	Required Storage Volume (cu.m)
10	179	78.08	21.41	56.67	34.00
15	143	62.49	21.41	41.08	36.97
20	120	52.45	21.41	31.04	37.25
25	104	45.41	21.41	24.00	36.00
30	92	40.17	21.41	18.76	33.78
35	83	36.11	21.41	14.70	30.87
40	75	32.86	21.41	11.45	27.48
45	69	30.20	21.41	8.79	23.72
50	64	27.97	21.41	6.56	19.67
55	60	26.07	21.41	4.66	15.39
60	56	24.44	21.41	3.03	10.92
65	53	23.02	21.41	1.61	6.29
70	50	21.77	21.41	0.36	1.53
75	47	20.66	20.66	0.00	0.00
80	45	19.67	19.67	0.00	0.00
85	43	18.78	18.78	0.00	0.00
90	41	17.98	17.98	0.00	0.00

5-YEAR EVENT

DRAINAGE AREA I (Impervious Uncontrolled Flow Off Site)

(5-YEAR EVENT)

			C
Roof Area:	0	sq.m	0.90
Hard Area:	39	sq.m	0.90
Soft Area:	16	sq.m	0.20
Total Catchment Area:	39	sq.m	0.90
Area (A):	39	sq.m	
Time of Concentration:	10	min	
Rainfall Intensity (i):	104	mm/hr	(5-Year Event)
Runoff Coeficient (C):	0.90		
Flow Rate (2.78AiC):	1.02	L/s	

DRAINAGE AREA II

(5-YEAR EVENT)

			C
Roof Area:	674	sq.m	0.90
Hard Area:	899	sq.m	0.90
Soft Area:	724	sq.m	0.20
Total Catchment Area:	1,573	sq.m	0.90

Water Elevation:	83.12	m
Head:	2.29	m
Centroid of ICD Orifice:	80.83	m
Invert of Outlet Pipe of CB/MH-7:	80.79	m
Orifice Diameter:	81	mm
Orifice Area:	5,133	sq.mm
Discharge Coefficient:	0.61	
Maximum Release Rate:	20.97	L/s

CB/MH	Top Area	Depth	Volume	
CB/MH-1	13	0.15	0.95	cu.m
CB/MH-2	18	0.18	1.57	cu.m
CB/MH-3	50	0.24	5.92	cu.m
CB/MH-5	0	-0.04	0.00	cu.m
CB/MH-6	0	-0.06	0.00	cu.m
CB/MH-7	31	0.23	3.58	cu.m
		Maximum Volume Stored:	12.02	cu.m
		Maximum Volume Required:	12.02	cu.m

DRAINAGE AREA II (Continued)

(5-YEAR EVENT)

Time (min)	i (mm/hr)	2.78AiC (L/s)	ICD Release Rate (L/s)	Stored Rate (L/s)	Required Storage Volume (cu.m)
10	104	41.01	20.97	20.03	12.02
15	84	32.89	20.97	11.91	10.72
20	70	27.65	20.97	6.67	8.01
25	61	23.97	20.97	2.99	4.49
30	54	21.22	20.97	0.25	0.45
35	49	19.09	19.09	0.00	0.00
40	44	17.39	17.39	0.00	0.00
45	41	15.99	15.99	0.00	0.00
50	38	14.82	14.82	0.00	0.00
55	35	13.82	13.82	0.00	0.00
60	33	12.97	12.97	0.00	0.00
65	31	12.22	12.22	0.00	0.00
70	29	11.56	11.56	0.00	0.00
75	28	10.98	10.98	0.00	0.00
80	27	10.45	10.45	0.00	0.00
85	25	9.98	9.98	0.00	0.00
90	24	9.56	9.56	0.00	0.00

100-YEAR + 20% STRESS TEST

DRAINAGE AREA I (Impervious Uncontrolled Flow Off Site)

(100-YEAR+ 20% STRESS TEST)

			C
Roof Area:	0	sq.m	0.90
Hard Area:	39	sq.m	0.90
Soft Area:	16	sq.m	0.20
Total Catchment Area:	39	sq.m	0.90
Area (A):	39	sq.m	
Time of Concentration:	10	min	
Rainfall Intensity (i):	214	mm/hr	(100-Year + 20% Stress Test)
Runoff Coeficient (C):	0.90		
Flow Rate (2.78AiC):	2.09	L/s	

DRAINAGE AREA II

(100-YEAR+ 20% STRESS TEST)

			C
Roof Area:	674	sq.m	0.90
Hard Area:	899	sq.m	0.90
Soft Area:	724	sq.m	0.20
Total Catchment Area:	1,573	sq.m	0.90

Water Elevation:	83.23	m
Head:	2.40	m
Centroid of ICD Orifice:	80.83	m
Invert of Outlet Pipe of CB/MH-7:	80.79	m
Orifice Diameter:	81	mm
Orifice Area:	5,133	sq.mm
Discharge Coefficient:	0.61	
Maximum Release Rate:	21.46	L/s

CB/MH	Top Area	Depth	Volume	
CB/MH-1	39	0.26	4.94	cu.m
CB/MH-2	46	0.29	6.53	cu.m
CB/MH-3	105	0.35	18.20	cu.m
CB/MH-5	38	0.07	0.83	cu.m
CB/MH-6	18	0.05	0.28	cu.m
CB/MH-7	68	0.34	11.45	cu.m
		Maximum Volume Stored:	42.22	cu.m
		Maximum Volume Required:	42.22	cu.m

DRAINAGE AREA II (Continued)

(100-YEAR+ 20% STRESS TEST)

Time (min)	i (mm/hr)	2.78AiC (L/s)	ICD Release Rate (L/s)	Stored Rate (L/s)	Required Storage Volume (cu.m)
10	214	84.33	21.46	62.87	37.72
15	171	67.49	21.46	46.02	41.42
20	144	56.65	21.46	35.19	42.22
25	125	49.04	21.46	27.58	41.37
30	110	43.39	21.46	21.92	39.46
35	99	39.00	21.46	17.54	36.83
40	90	35.49	21.46	14.03	33.66
45	83	32.61	21.46	11.15	30.10
50	77	30.20	21.46	8.74	26.22
55	72	28.16	21.46	6.70	22.10
60	67	26.40	21.46	4.94	17.77
65	63	24.86	21.46	3.40	13.26
70	60	23.51	21.46	2.05	8.62
75	57	22.32	21.46	0.86	3.85
80	54	21.25	21.25	0.00	0.00
85	52	20.29	20.29	0.00	0.00
90	49	19.42	19.42	0.00	0.00

D.B. Gray Engineering Inc.

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

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STORM SEWER CALCULATIONS

Rational Method — 5-YEAR EVENT

250 Forestglade Crescent
OAC Women Shelter
Ottawa, Ontario

May 7, 2025

Manning's Roughness Coefficient: 0.013

Location		Individual					Cumulative				Sewer Data							
From	To	Roof C = 0.90 (ha)	Hard C = 0.90 (ha)	Gravel C = 0.70 (ha)	Soft C = 0.20 (ha)	2.78AC	2.78AC	Time (min)	Rainfall Intensity (mm/hr)	Q Flow Rate (L/s)	Length (m)	Nominal Diameter (mm)	Actual Diameter (mm)	Slope (%)	Velocity (m/s)	Q_{Full} Capacity (L/s)	Time (min)	Q / Q_{Full}
CB/MH-1	CB/MH-2		0.0150		0.0135	0.0450	0.0450	10.00	104	4.69	28.3	250	250	0.46	0.82	40.33	0.57	12%
CB/MH-2	CB/MH-3	0.0186	0.0043		0.0109	0.0634	0.1084	10.57	101	10.98	13.2	250	250	0.45	0.81	39.89	0.27	28%
CB/MH-3	CB/MH-6	0.0200	0.0072		0.0156	0.0767	0.1851	10.84	100	18.50	29.1	250	250	0.45	0.81	39.89	0.60	46%
CB-4	CB/MH-5		0.0091		0.0056	0.0259	0.0259	10.00	104	2.70	20.6	250	250	0.44	0.80	39.45	0.43	7%
CB/MH-5	CB/MH-6	0.0082	0.0350		0.0100	0.1136	0.1395	10.43	102	14.23	11.7	250	250	0.52	0.87	42.88	0.22	33%
CB/MH-6	CB/MH-7		0.0120		0.0057	0.0332	0.1727	10.65	101	17.42	26.8	250	250	0.45	0.81	39.89	0.55	44%
CB/MH-7	750 ST	0.0206	0.0072		0.0112	0.0758	0.4336	11.44	97	42.13	6.1	300	300	0.47	0.94	66.29	0.11	64%
						Flow through inlet control device:				20.94	6.1	300	300	0.47	0.94	66.29	0.11	32%
						Existing 750 mm Forestglade Crescent Municipal Storm Sewer:						750	762	0.51	1.82	829.41		

APPENDIX E

DEVELOPMENT SERVICING STUDY CHECKLIST

Servicing study guidelines for development applications

4. Development Servicing Study Checklist

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

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

4.1 General Content

- ☐ Executive Summary (for larger reports only).
- ☒ Date and revision number of the report.
- ☒ Location map and plan showing municipal address, boundary, and layout of proposed development.
- ☒ Plan showing the site and location of all existing services.
- ☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.
- ☒ Summary of Pre-consultation Meetings with City and other approval agencies.
- ☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.
- ☒ Statement of objectives and servicing criteria.
- ☒ Identification of existing and proposed infrastructure available in the immediate area.
- ☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).
- ☒ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.
- ☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.
- ☐ Proposed phasing of the development, if applicable.

☒ Reference to geotechnical studies and recommendations concerning servicing.

☒ All preliminary and formal site plan submissions should have the following information:
- Metric scale
- North arrow (including construction North)
- Key plan
- Name and contact information of applicant and property owner
- Property limits including bearings and dimensions
- Existing and proposed structures and parking areas
- Easements, road widening and rights-of-way
- Adjacent street names

4.2 Development Servicing Report: Water

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

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

4.3 Development Servicing Report: Wastewater

- ☒ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).
- ☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.
- ☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.
- ☒ Description of existing sanitary sewer available for discharge of wastewater from proposed development.
- ☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)
- ☒ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix ‘C’) format.
- ☒ Description of proposed sewer network including sewers, pumping stations, and forcemains.
- ☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).
- ☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.
- ☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.
- ☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.
- ☐ Special considerations such as contamination, corrosive environment etc.

4.4 Development Servicing Report: Stormwater Checklist

- ☒ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)
- ☐ Analysis of available capacity in existing public infrastructure.
- ☒ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.
- ☒ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.
- ☒ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.
- ☒ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.
- ☐ Set-back from private sewage disposal systems.
- ☐ Watercourse and hazard lands setbacks.
- ☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.
- ☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.
- ☒ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).
- ☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.
- ☒ Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.
- ☐ Any proposed diversion of drainage catchment areas from one outlet to another.
- ☒ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.
- ☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100 year return period storm event.
- ☐ Identification of potential impacts to receiving watercourses
- ☐ Identification of municipal drains and related approval requirements.
- ☒ Descriptions of how the conveyance and storage capacity will be achieved for the development.
- ☒ 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

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

4.5 Approval and Permit Requirements: Checklist

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

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

4.6 Conclusion Checklist

- ☒ Clearly stated conclusions and recommendations
- ☒ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.
- ☒ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario