2705460 ONTARIO INC.

RESIDENTIAL DEVELOPMENTS
50 BAYSWATER AVENUE AND
1088 SOMERSET STREET W

SITE SERVICING REPORT

AUGUST 07, 2024
1ST SUBMISSION

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2705460 ONTARIO INC.

SITE PLAN APPLICATION
1ST SUBMISSION

PROJECT NO.: CA0003875.9802
DATE: AUGUST 07, 2024

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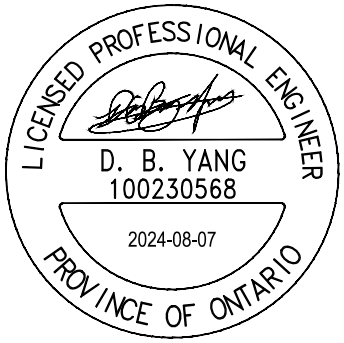

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1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

WSP was retained by 2705460 Ontario Inc. C/O Anand Aggarwal to provide servicing, grading, and stormwater management design services in support of the site plan application for the proposed residential developments located at 50 Bayswater Avenue and 1088 Somerset Street W. The proposed development at 50 Bayswater will consist of one 16-storey residential tower (Building B). Building B will be built adjacent to and share 2 levels of underground parking with the existing 17 Storey Residential tower (Building C). 1088 Somerset will consist of one 6 storey residential tower (Building A) complete with one underground level for mechanical/electrical/storage.

This report will provide sufficient detail to demonstrate that the proposed developments can be supported by the existing municipal infrastructure services such as watermain, sanitary, and storm sewers. Design conformance with all applicable standards and guidelines will be further detailed. The report will also include measures to be taken during the construction to minimize erosion and sedimentation. A separate report (50 Bayswater and 1088 Somerset Street W – Stormwater Management Report) will be provided detailing the stormwater management approach, addressing the quantity control and quality measures in accordance with the applicable guidelines.

The 50 Bayswater lot is located at the south-west corner of the Bayswater and Somerset intersection. The site consists of Building C and a 1-storey commercial building. The laneway along the western property line provides access to Building C's rear parking deck and the asphalt surface parking for the 1-storey building. The 1-storey building and existing parking lot are to be demolished with Building B constructed in their place. Building C and its rear parking deck is to remain, with minor modifications made to the parking deck to ensure access and egress. The 50 Bayswater site in total is 0.30ha, with an area of proposed redevelopment of 0.061ha.

The 1088 Somerset lot is located just west of the previously described laneway and is currently developed with a 2 ½ storey commercial dwelling, garage, and asphalt surface parking. The existing features on the lot are proposed to be demolished and the total 0.06ha lot redeveloped with Building A, a rear amenity area, and 2 short term parking spaces.

Based on the topographic survey plan both lots are generally sloping north towards Somerset Street. The drainage and sewage from the sites are currently directed to the existing municipal sewers on Somerset Street and Bayswater Avenue. Domestic water is also provided to the sites from the existing municipal watermains off their respective streets.

The City of Ottawa requires that the design of drainage and stormwater management systems for this development be prepared in accordance with the following documents:

- → Sewer Design Guidelines, City of Ottawa, October 2012
- → Stormwater Management Planning and Design Manual, Ministry of the Environment, March 2003
- → Stormwater Management Facility Design Guidelines, City of Ottawa, April 2012

This report was prepared utilizing servicing design criteria obtained from the City of Ottawa and outlines the design for water, sanitary wastewater, and stormwater facilities.

The format of this report matches that of the servicing study checklist found in Section 4 of the City of Ottawa's Servicing Study Guidelines for Development Applications, November 2009.

The following municipal services are available within the right-of-way's adjacent to the developments, as recorded from the UCC drawings received from the City:

Bayswater Avenue

- → 200mm ductile iron watermain
- → 300mm concrete sanitary sewer
- → 375mm concrete storm sewer

Somerset Street W

- → 200mm PVC watermain
- → 300mm concrete sanitary sewer
- → 300mm concrete storm sewer (west of laneway)
- → 375mm PVC storm sewer (east of laneway)

Underground stormwater cisterns will be provided to attenuate flow rates leaving the proposed buildings. Refer to the stormwater management report for additional details. Existing drainage patterns for the subject sites are to be maintained post-development. Existing municipal services for Building C are also to be maintained.

1.2 LOCATION MAP AND PLAN

The 6-storey Building A is located at 1088 Somerset Street W and the 16-storey Building B is proposed to be located at 50 Bayswater Avenue, in the City of Ottawa at the approximate locations shown in **Figure 1-1** below.

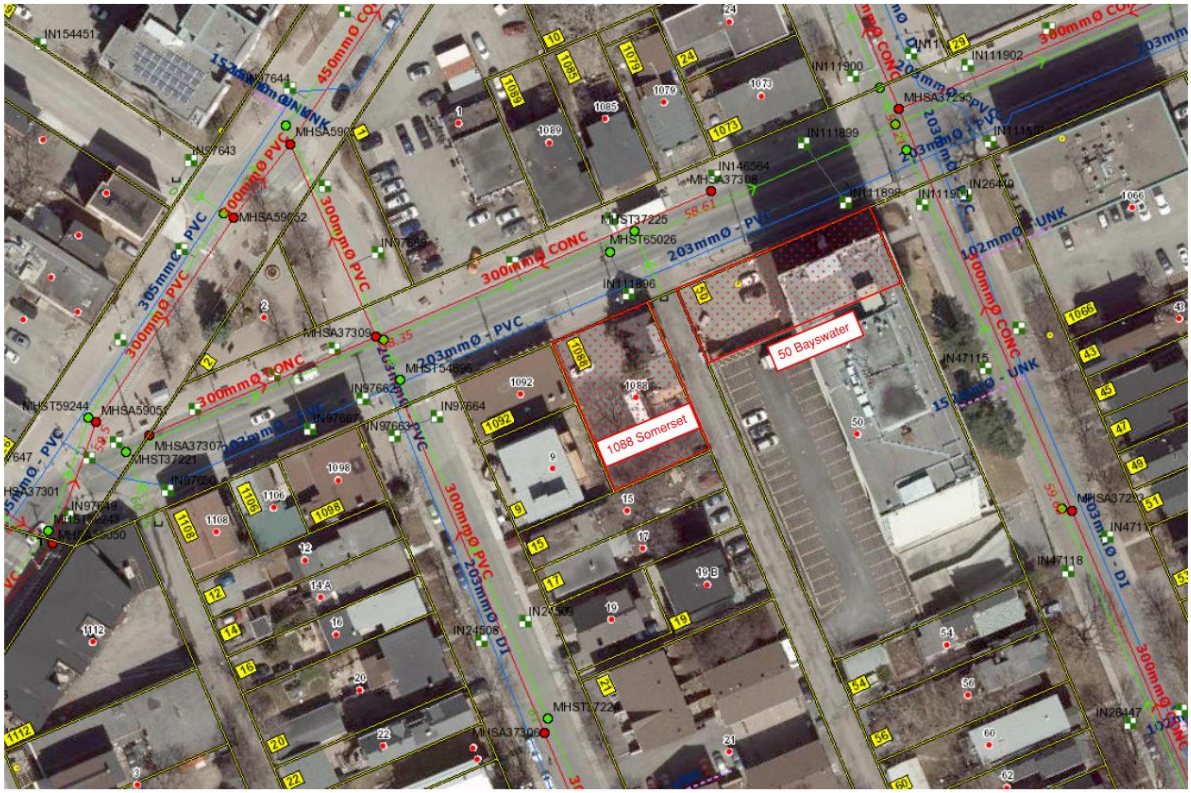


Figure 1-1 Site Location

1.3 HIGHER LEVEL STUDIES

The review for servicing has been undertaken in conformance with, and utilizing information from, the following documents:

- → Sewer Design Guidelines, City of Ottawa, October 2012
- → Design Guidelines for Sewage Works, Ministry of the Environment, 2008
- → Ottawa Design Guidelines - Water Distribution, July 2010, including all amendments issued as part of Technical Bulletins
- → Design Guidelines for Drinking Water Systems, Ministry of the Environment, 2008
- → Fire Underwriters Survey, Water Supply for Public Fire Protection (FUS), 2020
- → Stormwater Management Facility Design Guidelines, City of Ottawa, April 2012
- → Stormwater Management Planning and Design Manual, Ministry of the Environment, March 2003

1.4 AVAILABLE EXISTING AND PROPOSED INFRASTRUCTURE

As described above, all municipal mains (sanitary, storm, and watermain) are available in both the Somerset Street W and Bayswater Avenue rights-of-way. The proposed service connections are as follows:

Building A (1088 Somerset)

- → Proposed 200mm PVC sanitary service connection to existing 300mm concrete sanitary main within Somerset Street W
- → Proposed 200mm PVC storm service connection to existing 300mm concrete storm main within Somerset Street W
- → Proposed 200mm PVC water service connection to existing 200mm watermain within Somerset Street W

Building B (50 Bayswater)

- → Proposed 200mm PVC sanitary service connection to existing 300mm concrete sanitary main within Bayswater Avenue
- → Proposed 200mm PVC storm service connection to existing 375mm concrete storm main within Bayswater Avenue
- → Proposed 200mm PVC water service connection to existing 200mm watermain within Bayswater Avenue

Quantity control is required to restrict the discharge leaving the development area; thus on-site storm runoff will be captured and directed to underground storage cisterns. The runoff from the roofs will be captured by roof drains, and the rear amenity area of Building A will be captured by a landscape drain. Both will be directed to their respective underground storage cisterns. Hard and soft surfaces outside the building footprints will directly runoff and sheet flow towards the Somerset Street W and Bayswater Avenue rights-of-way where they will be captured by existing storm infrastructure.

1.5 GEOTECHNICAL STUDY

Paterson Group completed a Geotechnical Investigation report of the subject properties, the summaries of which are provided below:

Building A (1088 Somerset)

- → Borehole refusal at approximate depths ranging from 5.3m to 6.7m below existing ground surface
- → Groundwater depths ranging from 4.49m to 5.14m below ground surface

Building B (50 Bayswater)

- → Bedrock encountered at approximate depths ranging from 3.2m to 3.5m below the floor slab of the underground parking structure
- → Groundwater depths ranging from 1.17 to 1.53 below the floor slab of the underground parking structure

With this proximity of rock from the surface, the location and depth of services may not require any removal of bedrock. This bedrock depth has been taken into account in developing the engineering specifications.

1.6 CONCEPT LEVEL MASTER GRADING PLAN

A detailed grading plan for the site has been developed, matching the existing overland flow pattern of directing overflow drainage north towards Somerset Street W. The site topographic survey, included in **Appendix A**, provides evidence of direction of overland flow of the sites from south to north.

Restorations of the sidewalks along Bayswater and Somerset are expected within the areas impacted by the proposed development. As such, minor grading changes are expected along the property lines; however, restored areas are to match the top of existing curb elevations with no impacts to existing drainage or overland flow routes.

2 WATER DISTRIBUTION

2.1 CONSISTENCY WITH MASTER SERVICING STUDY AND AVAILABILITY OF PUBLIC INFRASTRUCTURE

The subject properties lies within the City of Ottawa's 1W pressure zone. Both Building A and B are to connect to the existing 203mm diameter PVC municipal watermain along Somerset Street W. The water entry room for both buildings shall be located on the north (Somerset) side of the underground levels.

Both buildings will be protected with a supervised automatic fire protection sprinkler system. The fire department connections shall be located at the north side of the buildings fronting Somerset Street W. The fire department connections for Buildings A and B are proposed to be 24m and 4m respectively, from the existing fire hydrant along Somerset Street W. No changes are required to the existing City water distribution system to allow servicing of these developments.

2.2 SYSTEM CONSTRAINTS AND BOUNDARY CONDITIONS

A boundary condition service request was submitted to the City of Ottawa and boundary conditions have been received and summarized below. A revised fire flow of 4000 L/min (67 L/s) was estimated for the proposed Building A and 4000 L/min (67 L/s) for Building B.

Table 2-1 Boundary Conditions (City of Ottawa)

Scenario	@ Building A (1088 Somerset St W)		@ Building B (50 Bayswater Ave)	
	Head (m)	Head (psi)	Head (m)	Head (psi)
Average Day (MAX HGL)	115.1	163.7	115.1	163.7
Peak Hour (MIN HGL)	107.7	153.1	107.8	153.3
Max Day + Fire Flow	109.4	155.6	109.3	155.4

2.3 CONFIRMATION OF ADEQUATE DOMESTIC SUPPLY AND PRESSURE

Water demands are based on Table 4.2 of the Ottawa Design Guidelines – Water Distribution. The developments are primarily residential building's containing bachelor, 1-bedroom, and 2-bedroom apartments with some commercial space on the ground floors. A water demand calculation sheet has been included in **Appendix B**, and the total water demands are summarized as follows:

Table 2-2 Water Demands

Scenario	Building A (1088 Somerset St W)	Building B (50 Bayswater Ave)
Average Daily	0.11 L/s	0.43 L/s
Maximum Daily	0.28 L/s	1.07 L/s
Peak Hour	0.62 L/s	2.36 L/s

The Ottawa Design Guidelines – Water Distribution (2010) state that the preferred practice for the design of a new distribution system is to have normal operating pressures range between 345 kPa (50psi) and 552 (80 psi) under a condition of maximum daily flow. Other Pressure criteria identified in the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi)
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	Maximum pressure at any point in the distribution system shall not exceed 689 kPa (100 psi)

Water pressure at municipal connections check (peak hour):

(Min. HGL Connection A) – (Pavement Elevation) = 107.70m – 61.00m = 46.70m = 457.85 kPa

(Min. HGL Connection B) – (Pavement Elevation) = 107.80m – 61.30m = 46.50m = 455.89 kPa

Water pressure at building connections check (peak hour):

(Min. HGL Connection A) – (Finished Floor Elevation Building A) = 107.70m – 61.45m = 46.25m = 453.44 kPa

(Min. HGL Connection B) – (Finished Floor Elevation Building B) = 107.80m – 61.30m = 46.50m = 455.89 kPa

Water pressure at building connections check (average day):

(Max. HGL Connection A) – (Finished Floor Elevation Building A) = 115.10m – 61.45m = 53.65m = 525.99 kPa

(Max. HGL Connection B) – (Finished Floor Elevation Building B) = 115.10m – 61.30m = 53.80m = 527.46 kPa

Water pressure at building connections check (max day + fire flow):

(Max Day+FF Connection A) – (Finished Floor Elevation Building A) = 109.40m – 61.45m = 47.95m = 470.11 kPa

(Max Day+FF Connection B) – (Finished Floor Elevation Building B) = 109.30m – 61.30m = 48.00m = 470.60 kPa

The minimum water pressure inside the buildings at the connections is determined with the minimum HGL condition, resulting in a pressure of 453.44 - 455.89 kPa which is in exceedance of the minimum require of 276 kPa per the guidelines.

Table 2-3 Summary of Water Pressure Under Min HGL Scenario

Min HGL (Peak Hour)	
ID	Hydraulic Pressure (kPa)
At Building A FFE = 61.45m	453.44
At Building B FFE = 61.30m	455.89

2.4 CONFIRMATION OF ADEQUATE FIRE FLOW PROTECTION

The fire flow rate has been calculated using the Fire Underwriters Survey (FUS) method. This method takes into account the type of building construction, the building occupancy, the use of sprinklers, and the exposure distances to adjacent structures. Assuming non-combustible construction with a fully sprinklered system, the fire flow demand is 67 L/s for Building A and 67 L/s for Building B. The detailed FUS calculations have been included in **Appendix B** for reference.

There is a public fire hydrant located on Somerset Street W immediately in front of the proposed Building B Fire Department Connection (FDC). This hydrant is within 24m of Building A's FDC and 4m of Building B's FDC, and can provide up to 95 L/s.

The proposed buildings will be serviced by 203mm lateral water services off the existing 203mm public watermains within the Somerset Street W and Bayswater Avenue rights-of-way. Two water service stubs will be provided for the building connections. The proposed buildings will be sprinklered and fire suppression will be provided with the fire department Siamese connection within 45m of the existing municipal fire hydrant.

The boundary condition for Maximum Day and Fire Flow results in a pressure of 470.11 – 470.60 kPa at the ground floor level. In the guidelines, a minimum residual pressure of 140 kPa must be maintained in the distribution system for a fire flow and maximum day event. As a pressure of 461.28 – 467.66 kPa is achieved, the fire flow requirements is exceeded.

Table 2-4 Summary of the Residual Pressure Under Max Day + Fire Flow Scenario

Max day + Fire Flow	
ID	Hydraulic Pressure (kPa)
At Building A FFE = 61.45m	470.11
At Building B FFE = 61.30m	470.60

2.5 CHECK OF HIGH PRESSURE

The maximum water pressure inside the buildings at the connections is determined with the maximum HGL condition, resulting in a pressure of 525.99 – 527.46 kPa which is less than the max 552 kPa threshold per the guidelines. Based on this result there is no concern of high pressure, and pressure control is not required for the buildings.

Table 2-5 Summary of Water Pressure Under Max HGL Scenario

Max HGL (Average Day)	
ID	Hydraulic Pressure (kPa)
At Building A FFE = 61.45m	525.99
At Building B FFE = 61.30m	527.46

2.6 PHASING CONSTRAINTS

No development phasing constraints have been detailed for the site.

2.7 RELIABILITY REQUIREMENTS

A shut off valve is provided at the property line of the 203mm water services for both Building A and B. There is an existing valve chamber west of Building A, and one shut off valve shall be provided for the 203mm watermain immediately east of the Building A connection along Somerset Street W for future maintenance or emergency shutoff purpose. Similarly, there is an existing valve chamber north of the Building B connection on Bayswater, with an additional valve proposed just south of the connection. As such water can be supplied to the buildings from both ends and can be isolated for future emergency circumstances.

2.8 NEED FOR PRESSURE ZONE BOUNDARY MODIFICATION

There is no need for a pressure zone boundary modification.

2.9 CAPABILITY OF INFRASTRUCTURE TO SUPPLY SUFFICIENT WATER

The capability of the public infrastructure to supply sufficient water is confirmed.

2.10 DESCRIPTION OF PROPOSED WATER DISTRIBUTION NETWORK

One new 203mm service is proposed to service Building A from the 203mm main from Somerset Street W. Building B shall be serviced by one new proposed 203mm service connecting to the 203mm watermain on Bayswater Avenue.

2.11 OFF-SITE REQUIREMENTS

No off-site improvements to watermains, feedermains, pumping stations, or other water infrastructure are required to maintain existing conditions and service the adjacent developments.

2.12 CALCULATION OF WATER DEMANDS

Water demands were calculated as described in sections 2.3 and 2.4 above.

2.13 MODEL SCHEMATIC

The water works consist of two building services; as such a model schematic is not required for this development.

3 WASTEWATER DISPOSAL

3.1 DESIGN CRITERIA

In accordance with the City of Ottawa's Sewer Design Guidelines, the following design criteria have been utilized in order to predict wastewater flows generated by the subject site and complete the sanitary sewer design:

- Minimum Velocity 0.6 m/s
- Maximum Velocity 3.0 m/s
- Manning Roughness Coefficient 0.013
- Average Sanitary Flow for Residential use 280 L/c/d
- Infiltration Allowance (Total) 0.33 L/ha/s
- Minimum Sewer Slopes – 200mm diameter 0.32%

An area of 0.060ha represents the lot area of 1088 Somerset Street W, and 0.061ha represents the development area for Building B at 50 Bayswater. These are the respective sanitary collection areas that are being considered to contribute to the proposed 200mm sanitary service connections to the municipal sanitary sewers.

3.2 CONSISTENCY WITH MASTER SERVICING STUDY

The outlet for the two 200mm sanitary service connections are the existing 300mm concrete municipal sanitary sewers located within the Somerset Street W and Bayswater Ave right-of-way.

The Ottawa Sewer Design Guidelines provide estimates of sewage flows based on residential and commercial developments. The total anticipated average daily flow based on anticipated populations and proposed commercial areas is 0.11 L/s for Building A and 0.42 L/s for Building B. Applying peaking factors and accounting for extraneous flows, the estimated ultimate peak flows are 0.42 L/s for Building A and 1.54 L/s for Building B.

Sanitary demand calculations can be found in **Appendix C** and layout of the proposed sanitary services may be found on the site servicing plan.

3.3 REVIEW OF SOIL CONDITIONS

There are no specific local subsurface conditions that suggest the need for a higher extraneous flow allowance. Soil conditions have been reviewed by Paterson Group. Bedding and backfill will be provided, conventional sewer materials will be utilized, and dewatering will be undertaken as necessary in accordance with the geotechnical recommendations and conditions encountered. The geotechnical report indicates that the groundwater table was observed between 57.19-57.26m for Building A and between 57.20-57.57m for Building B. Groundwater level is subject to seasonal fluctuations; however, the geotechnical report notes that the long-term groundwater table is expected at an approximate elevation of 57-58m. As the proposed inverts of the sanitary services are 59.00m and 59.15m, there is expected to be minimal groundwater impact on the sanitary services.

3.4 DESCRIPTION OF EXISTING SANITARY SEWER

It is assumed that the sanitary service for the existing development at 1088 Somerset outlets to the 300mm concrete sanitary sewer in Somerset Street W, and the existing development at Building B outlets to the 300mm concrete sanitary sewer in Bayswater Ave.

3.5 CALCULATIONS FOR NEW SANITARY SEWER

The new sanitary services for the proposed buildings will be a 200mm diameter PVC sewer at a slope of 1.0%. This size and slope of sewer provides a capacity of 32.80 L/s.

The 0.060ha site at 1088 Somerset Street W is anticipated to have a total peak flow of 0.42 L/s, and the 0.061ha site at 50 Bayswater Ave is expected to have a total peak flow of 1.54 L/s. As such, the proposed 200mm sanitary services will have adequate capacity to convey these anticipated flows. A sanitary sewer design sheet for the proposed developments is provided in **Appendix C** for reference.

3.6 VERIFICATION OF AVAILABLE CAPACITY IN DOWNSTREAM SEWER

The capacity of the 300mm sanitary sewer in Somerset Street W at 0.38% slope is 59.61 L/s. The proposed development at 1088 Somerset is anticipated to generate a peak flow of 0.42 L/s. This existing 300m sewer has already serviced the current site and the adjacent properties and is expected to continue to have sufficient capacity to convey the peak flow from this proposed development.

The 300mm sanitary sewer along Bayswater Ave runs at 3.00% slope and is expected to have a capacity of 167.49 L/s. A peak sanitary flow of 1.54 L/s is expected to be generated from the proposed development area at 50 Bayswater Ave. As such, there are no expected capacity concerns with the existing sanitary infrastructure along Bayswater Ave. In addition, correspondence with City of Ottawa staff did not identify any capacity concerns with the existing municipal sewers along Somerset Street W or Bayswater Ave.

3.7 DESCRIPTION OF PROPOSED SEWER NETWORK

Each development will be serviced by their own 200mm PVC sanitary service complete with a 1200mm maintenance hole for monitoring.

3.8 ENVIRONMENTAL CONSTRAINTS

There are not previously identified environmental constrains that impact the sanitary servicing design to preserve the physical conditions of watercourses, vegetation, soil cover, or to manage water quantity or quality.

3.9 PUMPING REQUIREMENTS

The proposed developments will have no impact on existing pumping stations and will not require new pumping facilities.

3.10 FORCE-MAINS

There are no sanitary forcemains for the proposed developments.

3.11 EMERGENCY OVERFLOWS FROM SANITARY PUMPING STATIONS

No sanitary pumping stations are proposed as part of these developments.

3.12 SPECIAL CONSIDERATIONS

There are no known special considerations related to the existing or proposed sanitary infrastructure design.

4 SITE STORM SERVICING

4.1 EXISTING CONDITION

Building A is located at 1088 Somerset Street W, a 0.060ha site currently developed with a 2 ½ storey commercial dwelling, garage, and asphalt surface parking. The existing site is not known to have storm servicing infrastructure. As such, runoff from the site sheet flows north toward the Somerset Street W right-of-way and is ultimately directed to the 300mm diameter storm sewer along Somerset Street W.

Building B is located at 50 Bayswater Avenue: a 0.30ha site developed with a 1-storey commercial building complete with rear surface parking and the 17-storey Building C complete with rear parking deck. The 0.061ha portion of the site containing the 1-storey building and rear parking is proposed to be redeveloped with Building B. Building C and rear parking deck shall remain throughout and post-construction. It is unclear if the existing 1-storey building is equipped with storm servicing. The rear surface parking contains two catch basins, which are assumed to outlet to the 300mm storm sewer along Somerset Street W. In excess of minor system capacity, the storm runoff flows overland to the Somerset Street W right of way.

4.2 VERIFICATION OF AVAILABLE CAPACITY IN DOWNSTREAM SEWER

The capacity of the existing 300mm concrete storm sewer in Somerset Street W at 0.78% slope is 85.49 L/s. The proposed development at 1088 Somerset is anticipated to generate a controlled flow of 4.9 L/s. This existing 300m sewer has already serviced the current site and the adjacent properties and is expected to continue to have sufficient capacity to convey the controlled flow from this proposed development.

The existing 375mm concrete storm sewer along Bayswater Ave runs at 3.90% slope and is expected to have a capacity of 346.60 L/s. The proposed development is to be controlled to a flow of 4.9 L/s; as such, there are no expected capacity concerns with the existing storm infrastructure along Bayswater Ave. In addition, correspondence with City of Ottawa staff did not identify any capacity concerns with the existing municipal sewers along Somerset Street W or Bayswater Ave.

4.3 DRAINAGE DRAWING

Drawing C004 shows the site servicing layout including the proposed and receiving storm sewer infrastructure. Drawing C003 outlines the proposed grading and drainage. Drawing C005 provides both pre and post-construction drainage sub-area plans. All referenced drawings and site sub-area information is provided in **Appendix D** for reference.

4.4 WATER QUANTITY CONTROL OBJECTIVE

Refer to the Stormwater Management Report for water quantity control objectives.

4.5 WATER QUALITY CONTROL OBJECTIVE

Refer to the Stormwater Management Report for water quality control objectives.

4.6 DESIGN CRITERIA

The stormwater management system was designed following the principles of dual drainage, making accommodation for both major and minor flow. Refer to the Stormwater Management Report for further details.

4.7 PROPOSED MINOR SYSTEM

The proposed developments will each be serviced by a 200mm storm service connection complete with 1200mm diameter monitoring manhole. Building A will connect to the 300mm storm sewer in the Somerset Street W right-of-way, and Building B will connect to the 375mm storm sewer in the Bayswater Ave right-of-way.

As described in the stormwater management report, runoff within the building footprints will be collected by roof drains that will direct the stormwater to an underground storage cistern. The rear amenity area at the 1088 Somerset site will additionally have an area drain connect directly to the building's internal mechanical system and eventual storage cistern. Each building's cistern outlet will be equipped with an outlet orifice to control flows to a release rate of 1.90 L/s for Building A and 1.70 L/s for Building B.

Perimeter foundation drainage from the proposed buildings will discharge into a sump pit within the respective buildings, and eventually outlet to their private 200mm storm sewers via a forcemain designed and provided by the mechanical engineer.

4.8 STORMWATER MANAGEMENT

Refer to Stormwater Management Report for details.

5 SEDIMENT AND EROSION CONTROL

5.1 GENERAL

Prior to topsoil stripping, earthworks or underground construction, erosion and sediment controls will be implemented and will be maintained throughout construction. Silt fences will be installed around the perimeter of the site and will be cleaned and maintained throughout construction. Silt fences will remain in place until the working areas have been stabilized or re-vegetated. Catch basins and manholes will have filter fabric installed under the grate during construction to protect from silt entering the storm sewer system. A mud mat will be installed at the construction access in order to prevent mud from tracking onto adjacent roads.

Erosion and sediment controls must be in place during construction. Recommendations to the contractor will be included in the erosion and sediment control plan C05 and are summarized below.

During all construction activities, erosion and sedimentation shall be controlled by the following techniques:

Prior to Construction

- Install silt fence along the perimeter of the property line.
- Install filter fabric or silt sack filters in all catchbasins and manholes that exist within the vicinity of the site.

During Construction

- Minimize the extent disturbed areas and the duration of exposure and impacts to existing grading.
- Perimeter vegetation to remain in place until permanent storm water management is in place; otherwise, immediately install silt fence when the existing site is disturbed at the perimeter.
- Protect disturbed areas from overland flow by providing temporary swales to the satisfaction of the field engineer. Tie-in temporary swale to existing catchbasins as required.
- Provide temporary cover such as seeding or mulching if disturbed area will not be rehabilitated within 30 days.
- Inspect silt fences, fabric filters, and catchbasin sumps weekly and within 24 hours after a storm event. Clean and repair when necessary.
- Drawing to be reviewed and revised as required during construction.
- Erosion control fencing to be installed around the base of all stockpiles.
- Do not locate topsoil piles and excavation material closer than 2.5m from any paved surface, or one which is to be paved before the pile is removed. All topsoil piles are to be seeded if they are to remain on site long enough for seeds to grow (longer than 30 days).
- Control wind blown off-site dust by seeding topsoil piles and other areas temporarily (provide watering as required and to the satisfaction of the engineer).
- No alternate methods of erosion protection shall be permitted unless approved by the field engineer.
- City roadway and sidewalk to be cleaned of all sediment from vehicular traffic as required.
- Provide gravel entrance (mud mat) wherever equipment leaves the site to prevent mud tracking onto paved surfaces.
- During wet conditions, tires of all vehicles/equipment leaving the site are to be scraped.
- Any mud/material tracked onto the road shall be removed immediately by hand or rubber tire loader.

- → Take all necessary steps to prevent building material, construction debris, or waste being spilled or tracked onto adjacent properties or public streets during construction and proceed immediately to clean up any areas which are affected.
- → All erosion control structures to remain in place until all disturbed ground surfaces have been stabilized either by paving or restoration of vegetative ground cover.
- → During the course of construction, if the engineer believes that additional prevention methods are required to control erosion and sedimentation, the contractor will install additional silt fences or other methods as required to the satisfaction of the engineer.
- → The contractor shall implement best management practices during construction activities to provide protection to all drainage systems and potential receiving watercourse. The contractor acknowledges that failure to implement appropriate erosion and sediment control measures may be subject to penalties imposed by any applicable regulatory agency.

Refer to the Erosion and Sediment Control Plan C006 provided in **Appendix D** for reference.

6 APPROVAL AND PERMIT REQUIREMENTS

6.1 GENERAL

The proposed development is subject to site plan approval and building permit approval.

No approvals related to municipal drains are required.

No permits or approvals are anticipated to be required from the Ontario Ministry of Transportation, National Capital Commission, Parks Canada, Public Works and Government Services Canada, or any other provincial or Federal Regulatory Agency.

7 CONCLUSION CHECKLIST

7.1 CONCLUSIONS AND RECOMMENDATIONS

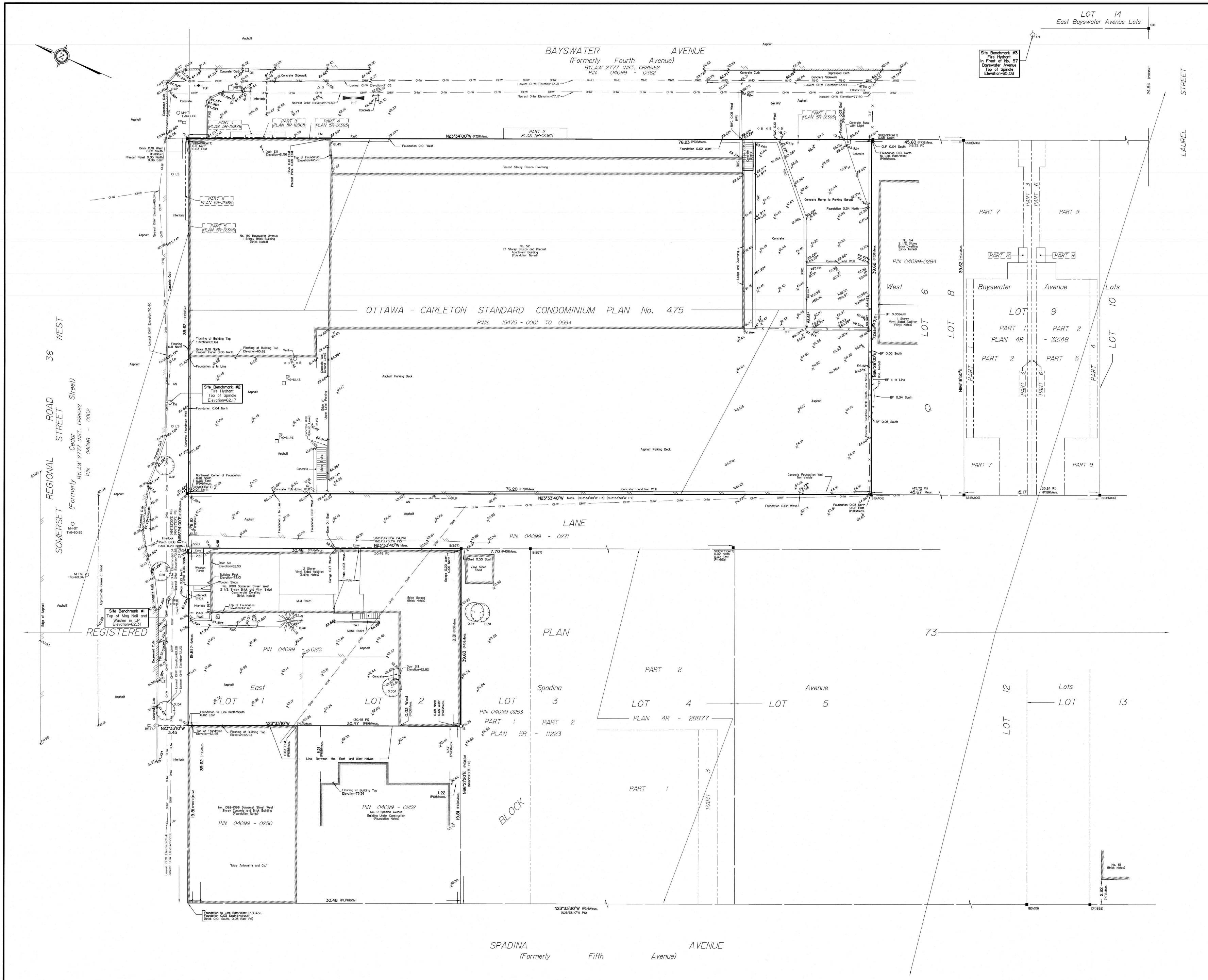
It is concluded that the proposed development can meet all provided servicing constraints and associated requirements. It is recommended that this report be submitted to the City of Ottawa in support of the application for Site Plan approval.

7.2 COMMENTS RECEIVED FROM REVIEW AGENCIES

As this is the first submission, no comments have been received from any review agencies.

APPENDIX

A BACKGROUND INFO



TOPOGRAPHIC PLAN OF SURVEY OF

OTTAWA-CARLETON STANDARD CONDOMINIUM PLAN No. 475 and PART OF LOTS 1 AND 2 IN BLOCK Q East Spadina Avenue REGISTERED PLAN 73 CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 150

6 4.5 3.0 1.5 0 3 6 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 10th day of August, 2021.

Aug. 13, 2021 — Date

E. H. Herweyer
Ontario Land Surveyor

Notes & Legend

	Denotes	
	"	Survey Monument Planted
	"	Survey Monument Found
SSIB	"	Short Standard Iron Bar
SIB	"	Standard Iron Bar
IB	"	Iron Bar
CC	"	Cut Cross
(WIT)	"	Witness
Meas.	"	Measured
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	"	Registered Plan 73
(P2)	"	(AOG) Plan dated December 5, 2018
(P3)	"	Ottawa-Carleton Standard Condominium Plan No. 475
(P4)	"	Plan 5R-11223
(P5)	"	Plan 4R-32148
(P6)	"	(1692) Plan dated June 1, 2020
(P7)	"	(1287) Plan dated May 4, 2004
(P8)	"	(AOG) Plan dated March 4, 2003
(P9)	"	Plan 4R-6367
	"	Deciduous Tree
	"	Coniferous Tree
FH	"	Fire Hydrant
WV	"	Water Valve
SP	"	Water Stand Post
MH-ST	"	Maintenance Hole (Storm Sewer)
MH-T	"	Maintenance Hole (Traffic)
OHW	"	Overhead Wires
CB	"	Catch Basin
CBI	"	Catch Basin Inlet
T\G	"	Top of Grate
GM	"	Gas Meter
HH	"	Handhole
TSP	"	Traffic Signal Post
B	"	Bollard
S	"	Sign
CLF	"	Chain Link Fence
RWC	"	Concrete Retaining Wall
RWI	"	Interlock Retaining Wall
RWS	"	Stone Retaining Wall
RWT	"	Timber Retaining Wall
UP	"	Utility Pole
HTB	"	Hydro Transformer Bolt
AN	"	Anchor
LS	"	Light Standard
MB	"	Mail Box
AC	"	Air Conditioner
H-T	"	Hydro Transformer pad
Ø	"	Diameter
+ 65.00	"	Location of Elevations
+ 65.00*	"	Top of Concrete Curb and Retaining Wall Elevation
C/L	"	Centreline

Parts 1 to 4 Plan 5R-12365 are subject to an encroachment agreement per Instruments LT612883 and LT636268; Part 5 Plan 5R-12365 is subject to an encroachment agreement per Instrument LT613850.

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations, and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

For comparison purposes, a rotation of 0°33'40" counter clockwise was applied to bearings on P3, and a rotation of 0°51'30" counter clockwise was applied to bearings on P4.

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum per City of Ottawa Benchmark 3606 having an elevation of 67.236.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities within the sidewalk were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-13672

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3).

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 21791-21 ManorPark Lts1-5 WBaysw PtLts1-2 ESpad RP73 | T F

File No.: PC2023-0208

David Renfroe
2-371 Richmond Road
Ottawa, ON
K2L 1Y3

Via email: davidrenfroe@outlook.com

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Official Plan Amendment, Zoning By-law Amendment and Site Plan Control Applications – 50 Bayswater Avenue and 1088 Somerset Street W.

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on August 24, 2023.

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

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 2 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.
2. In your subsequent pre-consultation 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.
3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

Supporting Information and Material Requirements

4. 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

5. 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 (Jean-Charles Renaud / John Bernier / Adrian van Wyk)

Application requirements:

6. It is anticipated that the current proposal will require Official Plan Amendment, Zoning By-law Amendment and Site Plan Control applications.
7. These are two properties with two different types of development. The buildings should be looked at as separate entities but can be combined for a **single ZBA application** (assuming both are under the same ownership). Separate Planning Rationales should be provided for each of the properties, or the Planning Rationale divided into two sections.
8. A boundary adjustment to the Wellington Street West Secondary Plan to capture 1088 Somerset Street West within its area will not be required.
9. Staff's preliminary assessment of the proposal indicates that the Official Plan Amendment application should only seek to amend the Secondary Plan (not the parent Official Plan). Staff still encourage the Planning consultant to confirm this assessment.

General:

10. The properties are currently zoned TM11 and R4UB (part of 1088 Somerset Street W.).

11. Per Schedule A of the Official Plan, the subject properties are located in the Inner Urban Transect. They are designated Minor Corridor per Schedule B. Building heights within this area are intended to be low-rise and mid-rise, with a minimum height of two storeys and a maximum height of six storeys per Table 7.

12. The properties are located in the Wellington Street West Secondary Plan area and are designated Mainstreet under that plan. They are located in the Somerset Square Park Policy Area. The Secondary Plan contemplates a maximum building height of six storeys or 20m, except where identified in a site-specific policy developed in accordance with Subsection 11.6, Policy 15 of the OP, for buildings within the Mainstreet designation.

13. 6-storey mixed-use building - policies within the Secondary Plan that support mid-rise buildings that have appropriate transition in height and includes retail/commercial at grade.

14. 15-storey rental building - which is not supported by the Secondary Plan.

    a. Instead, it will need to hinge on being an appendage of the existing 16-storey building and a background building in relation to the lands meant as the gateway.

    b. At-grade commercial is not required but is encouraged.

15. Attention should be paid to Subsection 2.1, Policy 5 of the Secondary Plan with respect to sidewalks and plazas. Upgrades to the public realm along Wellington Street West should be provided as part of this proposal. ROW streetscape needs to be further developed. Presently there is a lot of hardscape being proposed/existing.

16. **Angular Plane**: Please elaborate on how this is being addressed or, if not, why not. The angular plane will be a more significant topic of conversation considering that the transition to the R4 zone would be occurring within a zone currently zoned R4 (to be rezoned to TM11).

17. **Public Lane Access**: Please describe how this will function, as the Streetview imagery seems to indicate that turning and vertical clearance within the area may be difficult.

18. **More bike parking**: As is typical for urban developments, it will be expected that bike parking be provided at a rate of *at least* 1:1, and this increased rate will make part of the site-specific zoning exception provisions. Current project stats show an abundance of vehicular parking, which could be reduced to accommodate additional bicycle parking.

19. **Existing height at 50 Bayswater**: The existing tower benefits from legal non-complying rights, and that this may have an impact on the zoning relief being sought.

20. **Underground parking garage**: Portions of the drive-aisle appear to be less than 3.6m. With pillars throughout and a tight area, this space appears to be less than functional.

21. **Heritage assets:** Please take note that there are several listed heritage properties abutting/opposite the properties, and these should be considered in your analysis.

Building A:

22. Consider a controlled pedestrian access from the laneway to protect the at-grade amenity area.

Building B:

23. This is generally viewed as an improvement, as it will cap the existing building and remove a large blank wall from view of Somerset Street.

24. Traditional main street elements in terms of scale and detail/village character are not being communicated in the present design, specifically architectural articulation, treatment and details to form a two- to three-storey base. Some refinement is encouraged to help relate the new buildings better to their context.

25. Scope of plans needs to be expanded to include the Bayswater ROW and existing building and for further examination as to how this will affect the adjacent high-rise.

26. Please clarify the proposed parking arrangement, as it is not clear from existing floor plans.

Urban Design (Randolph Wang)

Submission requirements:

27. Urban design supports including the designs of the two separate sites in one package. Therefore, the required urban design materials and studies, such as the site plan, landscape plan, the shadow and wind studies can be combined. For readability purpose, floor plans and elevation drawings for each building may be presented separately.

28. Urban Design Brief. Please see attached customized Terms of Reference to guide the preparation. Here are a few highlights:

    a. The Urban Design Brief should be structured by generally following the headings highlighted under Section 3 – Contents of these Terms of Reference.

    b. It is extremely important to study and demonstrate built form transition between the proposed development, particularly the high-rise element, and the adjacent low-rise neighbourhood.

c. Given the complex situation with parking design, it is important to include sufficient materials, including detailed section drawings, to illustrate how the structure functions.

d. Please note that Urban Design Brief will also serve as the submission to the Urban Design Review Panel (see notes below).

29. Please refer to relevant Terms of Reference available on the City's website (Planning application submission information and materials | City of Ottawa) to prepare additional drawings and studies required.

UDRP review and report:

30. The sites are in a Design Priority Area. The proposed developments will be subject to UDRP review. The UDRP review will occur in the preconsultation stage. Please contact udrp@ottawa.ca for scheduling details.

31. The submission of a UDRP report is a requirement for deeming an application complete. The Terms of Reference of the UDRP report can be find in this link.

Comments on the Preliminary Design:

32. Attention to the need for a more generous pedestrian realm along Somerset and the provision of building setback is appreciated.

33. The approach to dealing with the site constraints, including the topography, the lot configurations, and the existence on site infrastructure such as parking ramps, etc., are appreciated.

34. With respect to building height, massing, and transition,

a. It is extremely important to ensure appropriate transition between the high-rise building, and the adjacent low-rise areas. Please review Urban Design Guidelines for High-Rise Buildings and use angular planes and appropriate separations to guide decision-making.

b. Equally important is to study shadow and wind impacts on public realm and private amenity spaces and to use these studies to guide built form design.

c. In the absence of the above-mentioned evidence and analysis, it is hard to tell if the proposed building massing and height are appropriate.

d. It is appreciated, however, the proposed development can improve the existing conditions on the sites.

35. With respect to built form design,

a. Expression of a one-storey base is appropriate in this context. It is also in keeping with policies of the Community Design Plan and the Secondary Plan.

b. However, the one-storey base should be achieved through building setback instead of change of material on the same plane.

c. Please study the three-dimensional effects of the datum line and building setback on the tower in both the existing and planned context. The current concept, which locates the datum line and sets the building back on the 14th floor, might make sense by looking at the elevation drawing without context. However, it might be appropriate to locate the datum line and have the setback on approximately the 10th floor (ceiling of 9th floor) within the context of the Community Design Plan and the Secondary Plan and the recent approved project at 961-969 Wellington Street (see Image 1).

36. With respect to public realm and ground floor,

a. More generous building setback at the Somerset-Bayswater corner behind the column may be required. Please explore landscaping design options. The small space behind the column shown on the preliminary concept does not feel comfortable (see Image2, item a).

b. Consider recessing the commercial entrance to ensure the positive effects of the building setbacks will not be canceled by the out-swing doors (see Image 2, item b).

c. Similarly, consider recessing the residential entrance of the 6-storey building (see Image 2, item c).

d. Please study the impacts of the two columns at the entrance of the public lane on vehicular movements (see Image 2, item d).

37. With respect to building design, please be mindful of the context. The architecture of the buildings should be reflective of the characteristics and scale of a traditional neighbourhood Mainstreet rather than conditions of downtown or a TOD node in a new developing community.

38. With respect to the design of the high-rise building,

a. Please be mindful of the relationship between the existing tower and the proposed tower. Because building floors of the two towers do not line up. Efforts should be made to avoid awkward conditions between balconies (see Image 3, item a).

b. Considerations should be given to extending the 1-storey base so that can wrap the corner instead of stopping at the corner (see Image 3, item b).

39. With respect to the design of the mid-rise building,

a. Please carefully study the relationship with and impacts on the new low-rise apartment building at 9 Spadina. Please be mindful that part of the proposed building overlaps with the rear yard of the low-rise apartment (see Image 4, item a).

b. Please carefully study the relationship with the commercial building at 1092 Somerset to ensure the new development won't overwhelm the existing building (see Image 4, item b).

c. Considerations should be given to introducing a datum line and building setback on the 5th floor (see Image 1).

40. Consider different façade treatment for the mid-rise building. The tower and the middle rise building does not have to be treated the same resulting in the perception of an overwhelming sale of the same architecture. Different treatments will contribute to maintaining the eclectic character of the Mainstreet.

Engineering (Mohammed Fawzi / Amy Whelan)

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

Water Quantity Control: In the absence of area specific SWM criteria please control post-development runoff from the subject site, up to and including the **100-year storm event**, to **a pre-development level of 2-year.** The pre-development runoff coefficient will need to be determined **as per existing conditions** but in no case more than 0.5. [**If 0.5 applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5**]. The time of concentration (T_c) used to determine the pre-development condition should be calculated.

Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; T_c of 10 minutes shall be used for all post-development calculations].

Any storm events greater than the established 2**-year allowable** release rate, up to and including the **100-year storm event**, shall be detained on-site. The SWM measures required to avoid impact on downstream sewer system will be subject to review.

Water Quality Control: Not required if there will be no surface drainage capture/control infrastructure such as a catch basin, catch basin with ICD.

Please see below for additional sewer and stormwater requirements:

a. 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. 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.

b. 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.

c. 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.

d. 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.

e. 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.

f. **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.

g. 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.**

h. If 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.

i. 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 2- and 100-year event storage requirements.

j. 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.

k. 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.

l. If rooftop control and storage is proposed as part of the SWM solutions sufficient details (Cl. 8.3.8.4) shall be discussed and document 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.

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

42. 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:

a. Location of service

b. Type of development and the amount of fire flow required (as per FUS).

c. Average daily demand: ___ l/s.

d. Maximum daily demand: ___l/s.

e. Maximum hourly daily demand: ___ l/s.

43. **Water**

A 203 mm dia. PVC watermain (2011) is available within Sommerset Street**.**

A 203 mm dia. DI watermain (1990) is available within Bayswater Avenue**.**

a. Water Supply Redundancy: Residential buildings with a basic day demand greater than 50m3/day (0.57 L/s) are required to be connected to a minimum of two water services separated by an isolation valve to avoid a vulnerable service area as per the Ottawa Design Guidelines - Water Distribution, WDG001, July 2010 Clause 4.3.1 Configuration. The basic day demand for this site not expected to exceed 50m3/day.

b. 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. Two or more public hydrants are anticipated to be required to handle fire flow.

c. Existing residential service to be blanked at the main.

44. **Sewer (sanitary and storm)**

A 300 mm dia. CONC Storm sewer (1991) is available within Sommerset Street**.**

A 300 mm dia. CONC Sanitary sewer (1991) is available within Sommerset Street**.**

A 375 mm dia. CONC Storm sewer (1990) is available within Bayswater Avenue**.**

A 300 mm dia. CONC Sanitary sewer (1990) is available within Bayswater Avenue**.**

a. **Capacity – Please provide proposed sanitary demands to verify for any capacity constraints.**

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.

c. 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.

d. Sewer connections to be made above the springline of the sewermain as per:

   i. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.

   ii. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain,

   iii. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain,

   iv. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

   v. No submerged outlet connections.

45. **Grading**

Post-development site grading shall match existing property line grades 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.

46. **Corner Site Triangle**

A corner site triangle is required at the intersection of Somerset Street West and Bayswater Avenue. Please note that no infrastructure is permissible within the

limits of the site triangle, this includes the foundation of the underground parking garage.

47. **Geotechnical (including sensitive marine clay, where appropriate)**

Geotechnical Study shall be consistent with the Geotechnical Investigation and Reporting Guidelines for Development Applications.
https://documents.ottawa.ca/sites/default/files/documents/cap137602.pdf

48. **Snow Storage**

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).

49. **Road Reinstatement**

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).

50. **Gas pressure regulating station**

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.

51. **Phase One Environmental Site Assessment**

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 10.1.6

d. Record of Site Condition (RSC) will be required based on the information provided in the Phase I ESA.

52. **Exterior Site Lighting**

Any proposed light fixtures (both pole-mounted and wall mounted) must be part of the approved Site Plan. All external light fixtures must meet the criteria for Full Cut-off Classification as recognized by the Illuminating Engineering Society of North America (IESNA or IES), and must result in minimal light spillage onto adjacent properties (as a guideline, 0.5 fc is normally the maximum allowable spillage). In order to satisfy these criteria, the please provide the City with a **Certification (Statement) Letter** from an acceptable professional engineer stating that the design is compliant.

53. **General**

a. 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**.

b. 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.

c. 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.

d. **Construction approach** – Please contact the Right-of-Ways Permit Office TMconstruction@ottawa.ca early in the Site Plan process to determine the ability to construct site and copy File Lead on this request.

54. **Noise**

a. A **Transportation Noise Assessment** is required as the subject development fronts an arterial road and a collector road.

b. A **Stationary Noise Assessment** is required to assess the noise impact of the proposed sources of stationary noise (mechanical HVAC system/equipment) of the development onto the surrounding residential area to ensure the noise levels do not exceed allowable limits specified in the City Environmental Noise Control Guidelines.

c. **Detailed Noise Study** in Support of Class 1 Designation that verifies applicable sound level limits will be met at the new noise sensitive land use with the appropriate mitigation measures for all noise sources to achieve a Class 1 designation to include in Appendix A of Part 1 of the ENCG, pursuant to the ENCG and NPC-300.

Feel free to contact Mohammed Fawzi, Infrastructure Project Manager, for follow-up questions.

Transportation (Wally Dubyk)

55. Please review the revised TIA Guidelines, and revised Screening, and resubmit the Screening Form.

56. *The following documents the process conducted for the Traffic Impact Assessment (TIA) Guidelines review and the recommended changes to the guidelines to maximize the likelihood of meeting the review timelines associated with Bill 109.*

    Revisions to Traffic Impact Assessment Guidelines (ottawa.ca).

    City of Ottawa TIA Guidelines Certification and Screening Form.

57. The consultant is to address how they plan to enable and encourage travel by sustainable modes (i.e. to make walking, cycling, transit, carpooling and telework more convenient, accessible, safe and comfortable). Please complete the City of Ottawa's *TDM Measures Checklist*.

58. Bayswater Avenue is designated as a Collector Road. There are no additional protected ROW limits within this area identified in the OP.

59. Somerset Street W is designated as an Arterial Road. There are no additional protected ROW limits within this area identified in the OP.

60. The City of Ottawa Zoning By-Law Corner Sight Triangles (Sec. 57) states that no obstruction to the vision of motor vehicle operators higher than 0.75 metres above grade. Please ensure that the existing flowering bush at the corner of Somerset Street W and Bayswater Avenue is not higher than 0.75 metres. The consultant should review the sight distance at the corner and any obstructions that may hinder the view of the driver.

61. 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.

62. 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.

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

64. The Owner is responsible for identifying the type and location of existing signage that will be removed from within the Right-of-Way to accommodate the development site. The Owner is responsible for providing the General Manager with a detailed drawing identifying the type and position of the existing signs and roadway pavement markings along the site frontage.

65. 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.

Proposed Revisions to TIA Guidelines

These changes are minor and administrative in nature and the update is recommended to be completed by staff under By-law No. 2016-369.

Revisions to Step 1 – Screening

The screening step acts as the initial assessment to determine whether a TIA is required for the proposed development. In order to reduce the number of developments that would require a TIA, we recommend the following simplified process:

- If the development meets any one of the criteria below, a TIA is initiated:
  - If the development generates 60 person-trips or more;
  - If the development is located in a Location Trigger; or
  - If the development has a Safety Trigger.
- Update to Table 2: Trip Generation Trigger

Land Use Type	Minimum Development Size (60 trips)
Single-Detached[1]	60 units
Multi-Use Family (Low-Rise)	90 units
Multi-Use Family (High-Rise)	150 units
Office[2]	1,400 m^2
Industrial[2]	7,000 m2
Fast-food restaurant or coffee shop[2]	110 m2
Destination retail[2]	1800 m2
Gas station or convenience market[2]	90 m2

[1]Table 2, Table 3 & Table 4 TRANS Trip Generation Manual

[2]ITE Trip Generation Manual 11.1 Ed.

- Update to Module 1.3 Location Triggers
  - Adding Hubs to the list of locations is recommended to be considered for Module 1.3 Location Trigger given their function to accommodate a diversity of functions, higher density development, and greater degree of mixed-uses and public transportation service. Hubs are identified as Protected Major Transit Station Areas (PMTSAs) and identified in Schedule C1-Protected Major Transit Station Areas (PMTSA). Refer to Schedules C7-A, C7-B, and C1.

- Replacing Spine Bicycle Networks with Cross Town Bikeways is recommended to be consistent with the 2024 Transportation Master Plan.

Revisions to Step 2 - Scoping

- Reorganized to include 3.1 Development-generated Travel Demand as scope of the TIA will be determined by mode share.
- Remove all exemptions.

Recommended reorganization:

Step 2 – Scoping - Modules and Triggers		
Site Design and TDM Modules		
4.1	Development Design	
4.1.1	Design for Sustainable Modes	All
4.1.2	Circulation and Access	All
4.1.3	New Street Networks	All subdivisions
4.2	Parking	
4.2.1	Parking Supply Include language that asks for justification of change to Zoning By-law parking requirements	All
4.3	Boundary Street Design	All
4.5	TDM	
4.5.1	Context for TDM	All
4.5.2	Need and Opportunity	All
4.5.3	TDM Program	All
Network Impact Modules		
Note - only require Network Demand Forecasting Modules (3.2 + 3.3) if one or more of these modules are triggered		

Step 2 – Scoping - Modules and Triggers		
4.6	~~Neighbourhood Traffic Management~~ Rename: Neighbourhood Traffic Calming* *Note: the NTC module will be reviewed in detail in the next comprehensive update of the TIA Guidelines*	If the development meets all of the following criteria: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: ○ School (within 250m walking distance); ○ Park; ○ Retirement / Older Adult Facility (i.e. long-term care and retirement homes); ○ Licenced Child Care Centre; ○ Community Centre; or ○ 50%, or greater, of adjacent property is occupied by residential lands and a minimum of 10 occupied residential units are present on subject street segment. 3. Application is not Site Plan; 4. 75 site auto trips; 5. Site Trip Infiltration is expected.
4.7		Transit
4.7.1	Transit Route Capacity	> 75 site transit trips
4.7.2	Transit Priority Requirements	> 75 site auto trips
4.8	Network Concept	Site trips > by 200 persons
4.9		Intersection Design
4.9.1	Intersection Controls (including site accesses)	> 75 site auto trips
4.9.2	Intersection Design	> 75 site auto trips
Deleted and Combined Modules		
4.2.2	Spillover Parking	Deleted due to low impact on the development and surrounding network.
4.4.1	Access Location and Design	Location reviewed in Scoping Design reviewed in 4.9
4.4.2	Access Control	Reviewed in 4.9.1
4.4.3	Access Design	Reviewed in 4.9.2

Note that the City of Ottawa reserves the right to determine the scope of any TIA study based on its professional judgement despite these guidelines, meaning that staff can change the scope based on their understanding of the development context.

Feel free to contact Wally Dubyk, Transportation Project Manager, for follow-up questions.

Environment and Forestry (Mark Elliott / Mark Richardson)

66. **The following Tree Conservation Report (TCR) requirements have been adapted from the Schedule E of the Urban Tree Protection Guidelines**

a. A Tree Conservation Report (TCR) must be supplied for Site Plan Control review along with the suite of other plans/reports required by the City

i. an approved TCR is a requirement of Site Plan approval.

ii. The Planning Forester suggests that one is provided with any rezoning application

b. Any removal of privately-owned trees 10cm or larger in diameter, or 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.

c. The TCR must contain 2 separate plans:

i. Plan/Map 1 - show existing conditions with tree cover information

ii. Plan/Map 2 - show proposed development with tree cover information

iii. Please ensure retained trees are shown on the landscape plan

d. the TCR must list all trees on site, as well as off-site trees if the CRZ extends into the developed area, by species, diameter and health condition

i. for ease of review, the Planning Forester suggests that all trees be numbered and referenced in an inventory table

e. Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)

i. Compensation may be required for the removal of city owned trees.

f. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained

g. 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

h. The location of tree protection fencing must be shown on the plan

i. Show the critical root zone of the retained trees

j. 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.

k. For more information on the process or help with tree retention options, contact Mark Richardson mark.richardson@ottawa.ca or at City of Ottawa

67. **Planning Forester Landscape Plan tree planting requirements:**

a. Please ensure any retained trees are shown on the LP

b. Minimum Setbacks

i. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.

ii. Maintain 2.5m from curb

iii. Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.

c. 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. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

d. Tree specifications

i. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.

ii. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage

e. 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.

f. No root barriers, dead-man anchor systems, or planters are permitted.

g. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

h. Hard surface planting

i. If there are hard surface plantings, a planting detail must be provided

ii. Curb style planter is highly recommended

iii. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.

iv. Trees are to be planted at grade

i. 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 following:

Tree Type/Size	Single Tree Soil Volume (m3)	Multiple Tree Soil Volume (m3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

j. It is suggested that the proposed species list include a column listing the available soil volume.

k. Sensitive Marine Clay

   i. Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines

l. The City requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.

m. 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

68. **Significant environmental features**

None present

69. **Species at risk**

None present

70. **Environmental impact statements**

No triggers on or nearby site, no EIS required.

71. **Bird-Safe Design Guidelines**

As the proposed design is above the 4-storey trigger, the buildings will have to incorporate mitigation measures from the Bird Safe Design Guidelines. In particular, large expanses of glazing should be avoided and 90% all glass panels and glazing 16m or below will have to incorporate bird safe standards for reflectivity and/or transparency. The glass panels on the patios are also a major design trap that should be avoided. The all-glass corners are also an issue and should be altered to reduce the risk of flythrough.

72. In order to help meet the city's urban canopy, urban heat island, and climate resilience goals (per sections 4.8.2 and 10.3 of the OP), additional plantings are encouraged wherever possible.

Feel free to contact Mark Elliott, Environmental Planner, or Mark Richardson, Forester, for follow-up questions.

Parkland (Kim Baldwin)

Parkland Dedication:

73. Upon review of the site context and surroundings, PFP will be requesting cash-in-lieu of parkland for parkland dedication.

74. The conveyance requirement is to be calculated as per the Parkland Dedication By-law No.2022-280, as amended. Per the By-law (as amended), this proposal would be subject to the following conveyance requirement per use:

    a. For residential uses (res density > 18 units per net hectare): 1 hectare per 1000 dwelling units, not exceeding 10% of the gross land area for sites under 5 hectares.

    b. For commercial uses: 2% of gross land area

    c. Where land is developed for a mix of uses within a building, the required conveyance shall be the cumulative sum for each use, as calculated using the applicable rate prorated proportionally to the gross floor area allocated to each use.

75. PFP will request the following information to confirm and calculate the parkland conveyance requirement:

    a. Gross land area, in square meters

    b. Number of residential units existing/proposed

    c. The proportion of existing commercial/residential development on site.

    d. Gross floor area of proposed residential development

    e. Gross floor area of proposed commercial development

    f. The proportion of proposed commercial/residential development on site.

Somerset Square Park and Community Benefits Charges:

76. We understand that this development will be subject to Community Benefits Charges.

77. The Wellington Street West road segment adjacent to Somerset Square, will be converted into a public realm/ plaza space. This initiative will be partially funded using Section 37 benefits from a nearby development.

78. Similarly, if supported by the City Councillor, City staff could explore potentially converting the Spadina Avenue road segment adjacent to Somerset Square into a public realm/ plaza space. If such closure is were possible, CBC funds collected from this project could go toward funding this initiative.

79. Such public realm/urban plaza enhancements north of and potentially east of Somerset Square could expand cultural and recreation programming opportunities in/around the Park.

Feel free to contact Kimberley Baldwin, Parks Planner, for follow-up questions.

Waste Collection Services (André Laplante)

80. Both garbage room should have a roll up door or service door opening of a minimum 2.2M. The commercial units will need their own garbage room and service. Any pathway leading to the collection point must be 2.2 M wide.

Community Association

81. Has concerns about the transition to the R4 zone – Q: how much of the R4 zone is 6 storey?
    a. A: the front portion is TM zone and rear end is R4 zone.
82. Stepping down and creating terraces – this may help with the transition.
83. This building is on the heritage register – will pass along on the notes.
84. Want loads of bicycle parking spaces – very transit-oriented neighborhood.
85. Biggest issue: transition of the 1088 property.
86. Much better proposal than the previous – have you considered building with strong wood.
    a. 6 storey buildings are allowed to be built in wood.

Other

87. 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. The HPDS was passed by Council on April 13, 2022.

a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.

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

Submission Requirements and Fees

88. Additional information regarding fees related to planning applications can be found here.

89. 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.

90. 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.

Yours Truly,

Jean-Charles Renaud

cc. John Bernier, Adrian van Wyk, Randolph Wang, Mohammed Fawzi, Amy Whelan, Abdul Mottalib, Wally Dubyk, Mark Elliott, Mark Richardson, Kim Baldwin, André Laplante, Sami Rehman (City of Ottawa)

Linda Hoad (Hintonburg Community Association)

APPENDIX

B WATER

Manoryk, Spencer

From: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Sent: July 25, 2024 1:05 PM
To: Manoryk, Spencer
Cc: Yang, Winston; Whelan, Amy
Subject: RE: Boundary Conditions Request - 50 Bayswater Avenue and 1088 Somerset Street W.
Attachments: 1088 Somerset Street W REVISED July 2024.pdf; 50 Bayswater Avenue REVISED July 2024.pdf

Hi Spencer,

The following are boundary conditions, HGL, for hydraulic analysis at 1088 Somerset Street (zone 1W) assumed to be connected to the 203 mm watermain on Somerset Street (see attached PDF for location).

Minimum HGL: 107.7 m

Maximum HGL: 115.1 m

Max Day + Fire Flow (67L/s): 109.4 m

The following are boundary conditions, HGL, for hydraulic analysis at 50 Bayswater Avenue (zone 1W) assumed to be a dual connection connected to the 203 mm watermain on Bayswater Avenue (see attached PDF for location).

Minimum HGL: 107.8 m

Maximum HGL: 115.1 m

Max Day + Fire Flow (67L/s): 109.3 m

Please refer to Guidelines and Technical bulletin ISDTB-2021-01 concerning residential areas serving 50 or more dwellings.

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.

Best Regards,

Mohammed Fawzi, P.Eng.
Senior Project Manager (A), Infrastructure Approvals

Water Demand Calculation Sheet

Project:	**50 Bayswater Avenue and 1088 Somerset Street**	**Date:**	**August, 2024**
Location:	**City of Ottawa**	**Design:**	**SM**
WSP Project No.	**CA0003875.9802**	**Page:**	**1 of 1**

Floor	Residential				Non-Residential			Average Daily			Maximum Daily			Maximum Hourly			Fire
	Units			Pop.	Industrial	Institutional	Commercial	Demand (l/s)			Demand (l/s)			Demand (l/s)			Demand
	Bachelor	1-Bed	2-Bed		(ha)	(ha)	(ha)	Res.	Non-Res.	Total	Res.	Non-Res.	Total	Res.	Non-Res.	Total	(l/s)
1088 Somerset Street	0	15	6	34	0.00	0.00	0.01	0.11	0.00	0.11	0.27	0.00	0.28	0.61	0.01	0.62	67
50 Bayswater	1	53	26	130	0.00	0.00	0.02	0.42	0.01	0.43	1.05	0.01	1.07	2.34	0.02	2.36	67
Total	1	68	32	164	0.00	0.00	0.03			0.54			1.34			2.98	

Population Densities			Average Daily Demand			Maximum Daily Demand			Maximum Hourly Demand		
Single Family	3.4	person/unit	Res.	280	l/cap/day	Res.	2.5	x avg. day	Res.	2.2	x max. day
Semi-Detached	2.7	person/unit	Ind.	35000	l/ha/day	Ind.	1.5	x avg. day	Ind.	1.8	x max. day
Duplex	2.3	person/unit	Inst.	28000	l/ha/day	Inst.	1.5	x avg. day	Inst.	1.8	x max. day
Townhome (Row)	2.7	person/unit	Comm.	28000	l/ha/day	Comm.	1.5	x avg. day	Comm.	1.8	x max. day
Bachelor Apartment	1.4	person/unit									
1 Bedroom Apartment	1.4	person/unit									
2 Bedroom Apartment	2.1	person/unit									
3 Bedroom Apartment	3.1	person/unit									
4 Bedroom Apartment	4.1	person/unit									
Avg. Apartment	1.8	person/unit									

Fire Flow Design Sheet (FUS)
1088 Somerset Street W
Ottawa, Ontario
WSP Project No. CA0003875.9802

Date: 2024-08-07
Input By: SM
Reviewed By: WY

1088 Somerset Street W
Fire Flow Requirements Based on Fire Underwriters Survey (FUS) 2020

To estimate the amount of water required to confine and control a fire, FUS uses the following base formula:

$$F = 220 \times C \times \sqrt{A}$$

F = Required Fire Flow in litres per minute
C = Construction Coefficient related to the type of construction of the building
A = Total Effective Floor Area in square meters of the building

	1. Construction Material		Input	Coefficient	Value Used
	Type V	Wood Frame Construction		1.5	
	Type IV-A	Mass Timber Construction		0.8	
	Type IV-B	Mass Timber Construction		0.9	
C	**Type IV-C**	Mass Timber Construction		1.0	0.8
	Type IV-D	Mass Timber Construction		1.5	
	Type III	Ordinary Construction		1.0	
	Type II	Non-combustible Construction	Yes	0.8	
	Type I	Fire Resistive Construction		0.6	

	2. Floor Area	Input	Value Used
	Building Footprint (m²)	375	
	Number of Floors	6	
A	Protected Openings (1-hr)	Yes	469
	Total Effective Floor Area (m²) *	469	

* Single largest floor area + 25% of each of the two immediately adjoining floors

3. Base fire flow without adjustments

F

F = 220 x C x √A = 4,000 **L/min**

	4. Occupancy and Contents Adjustment Factor	FUS Table 3	Adjustment	Value Used
	Non-combustible		-25%	
	Limited combustible	Yes	-15%	
(1)	Combustible		+0%	-15%
	Free Burning		+15%	
	Rapid Burning		+25%	

Adjustment of F due to Occupancy and Contents = 3,400 **L/min**

	5. Automatic Sprinkler Protection	FUS Table 4	Adjustment	Value Used
	% of Sprinkler Coverage	100%		
	Adequately Designed System (NFPA 13)	Yes	-30%	
(2)	Standard Water Supply	Yes	-10%	-50%
	Fully Supervised System	Yes	-10%	

Credit for Automatic Sprinkler Protection = -1,700 **L/min**

	6. Exposure Surcharge	Separation	FUS Table 5	Value Used
	North Exposure (m)	23	+10%	
	East Exposure (m)	8	+20%	
(3)	South Exposure (m)	11	+15%	+70%
	West Exposure (m)	1	+25%	

Surcharge for Exposure = +2,380 **L/min**

7. Total Required Fire Flow

F

F = (1) + (2) + (3) = 4,000 **L/min**
or 67 **L/sec**
or 1,057 **GPM (US)**

Based on method described in:
"Water Supply for Public Fire Protection - A Guide to Recommended Practice", 2020
by Fire Underwriters Survey

Fire Flow Design Sheet (FUS)
50 Bayswater Avenue
Ottawa, Ontario
WSP Project No. CA0003875.9802

Date: 2024-08-07
Input By: SM
Reviewed By: WY

50 Bayswater Avenue
Fire Flow Requirements Based on Fire Underwriters Survey (FUS) 2020

To estimate the amount of water required to confine and control a fire, FUS uses the following base formula:

F = 220 x C x √A

F = Required Fire Flow in litres per minute
C = Construction Coefficient related to the type of construction of the building
A = Total Effective Floor Area in square meters of the building

	1. Construction Material		Input	Coefficient	Value Used
	Type V	Wood Frame Construction		1.5	
	Type IV-A	Mass Timber Construction		0.8	
	Type IV-B	Mass Timber Construction		0.9	
C	**Type IV-C**	Mass Timber Construction		1.0	0.8
	Type IV-D	Mass Timber Construction		1.5	
	Type III	Ordinary Construction		1.0	
	Type II	Non-combustible Construction	Yes	0.8	
	Type I	Fire Resistive Construction		0.6	

	2. Floor Area	Input	Value Used
	Building Footprint (m²)	420	
	Number of Floors	17	
A	Protected Openings (1-hr)	Yes	525
	Total Effective Floor Area (m²) *	525	

* Single largest floor area + 25% of each of the two immediately adjoining floors

F — **3. Base fire flow without adjustments**

F = 220 x C x √A = 4,000 **L/min**

	4. Occupancy and Contents Adjustment Factor	FUS Table 3	Adjustment	Value Used
	Non-combustible		-25%	
	Limited combustible	Yes	-15%	
(1)	Combustible		+0%	-15%
	Free Burning		+15%	
	Rapid Burning		+25%	

Adjustment of F due to Occupancy and Contents = 3,400 **L/min**

	5. Automatic Sprinkler Protection	FUS Table 4	Adjustment	Value Used
	% of Sprinkler Coverage	100%		
	Adequately Designed System (NFPA 13)	Yes	-30%	
(2)	Standard Water Supply	Yes	-10%	-50%
	Fully Supervised System	Yes	-10%	

Credit for Automatic Sprinkler Protection = -1,700 **L/min**

	6. Exposure Surcharge	Separation	FUS Table 5	Value Used
	North Exposure (m)	25	+10%	
	East Exposure (m)	27	+10%	
(3)	South Exposure (m)	1	+25%	+65%
	West Exposure (m)	8	+20%	

Surcharge for Exposure = +2,210 **L/min**

F — **7. Total Required Fire Flow**

F = (1) + (2) + (3) = 4,000 **L/min**
or 67 **L/sec**
or 1,057 **GPM (US)**

Based on method described in:
"Water Supply for Public Fire Protection - A Guide to Recommended Practice", 2020
by Fire Underwriters Survey

Manoryk, Spencer

From: Robert Verch <rverch@rlaarchitecture.ca>
Sent: July 4, 2024 1:37 PM
To: Manoryk, Spencer
Cc: Yang, Winston
Subject: RE: Boundary Conditions Request - 50 Bayswater Avenue and 1088 Somerset Street W.

Both building will be Type 2 non-combustible construction. Protected openings, sprinkler with standpipe, fully supervised system.

Rob

From: Manoryk, Spencer <Spencer.Manoryk@wsp.com>
Sent: July-04-24 11:32 AM
To: Robert Verch <rverch@rlaarchitecture.ca>
Cc: Yang, Winston <Winston.Yang@wsp.com>
Subject: RE: Boundary Conditions Request - 50 Bayswater Avenue and 1088 Somerset Street W.

Hi Rob,

Could you please comment on the below? I want to make sure we make the correct assumptions when submitting the boundary conditions request to the city.

Thanks,

Spencer Manoryk
Designer EIT
Land Development & Municipal Engineering, Ontario

T+ 1 613-690-7463

WSP Canada Inc.
2611 Queensview Drive, Suite 300
Ottawa, Ontario
K2B 8K2 Canada

wsp.com

From: Manoryk, Spencer
Sent: Wednesday, July 3, 2024 1:18 PM
To: Robert Verch <rverch@rlaarchitecture.ca>
Cc: Yang, Winston <Winston.Yang@wsp.com>
Subject: FW: Boundary Conditions Request - 50 Bayswater Avenue and 1088 Somerset Street W.

Hi Rob,

Per below correspondence, we will be requiring confirmation on the building parameters for both the proposed 1088 Somerset Building and 50 Bayswater Building.

Could you please review and confirm the following parameters:

Type of Construction:

The following Construction Types and Coefficients are used in the required fire flow formula:

C = 1.5 for **Type V** Wood Frame Construction
= 0.8 for **Type IV-A** Mass Timber Construction
= 0.9 for **Type IV-B** Mass Timber Construction
= 1.0 for **Type IV-C** Mass Timber Construction
= 1.5 for **Type IV-D** Mass Timber Construction
= 1.0 for **Type III** Ordinary Construction
= 0.8 for **Type II** Noncombustible Construction
= 0.6 for **Type I** Fire Resistive Construction

Protected or Unprotected Opening:

Protection requirements:

The protection requirements for vertical openings are only applicable in buildings with a Construction Coefficient below 1.0. The type of protection for vertical openings shall be based on the construction of the enclosure walls and the type of opening or other device used for the protection of openings in the enclosure. See also NBC Division B, Section 3.5. Vertical Transportation.

Protected openings:

i. Enclosures shall have walls of masonry or other limited or noncombustible construction with a fire resistance rating of not less than one hour.
ii. Openings including doors shall be provided with automatic closing devices
iii. Elevator doors shall be of metal or metal-covered construction, so arranged that the doors must normally be closed for operation of the elevator.

Unprotected openings:

i. Any opening through horizontal separations that are unprotected or otherwise have closures that do not meet the minimum requirements for protected openings, above.

Sprinkler Protection:

Table 4 Sprinkler Credits

Automatic Sprinkler System Design	Credit	
	With complete building coverage	With partial building coverage of X%
Automatic sprinkler protection designed and installed in accordance with NFPA 13	30%	30% × Percentage of Total Floor Area Serviced by Sprinkler System
Water supply is standard for both the system and Fire Department hose lines	10%	10% × Percentage of Total Floor Area Serviced by Sprinkler System
Fully supervised system	10%	10% × Percentage of Total Floor Area Serviced by Sprinkler System

Thanks,

Spencer Manoryk
Designer EIT
Land Development & Municipal Engineering, Ontario

T+ 1 613-690-7463

WSP Canada Inc.
2611 Queensview Drive, Suite 300
Ottawa, Ontario
K2B 8K2 Canada

wsp.com

From: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Sent: Monday, January 15, 2024 9:21 AM
To: Manoryk, Spencer <Spencer.Manoryk@wsp.com>
Cc: Yang, Winston <Winston.Yang@wsp.com>; Whelan, Amy <amy.whelan@ottawa.ca>
Subject: RE: Boundary Conditions Request - 50 Bayswater Avenue and 1088 Somerset Street W.

Hi Spencer,

Thank you. This is to confirm the request has been submitted and results will be forwarded when received.

As a friendly reminder, please ensure that the servicing report contains an email correspondence or memo from the Architect confirming that the parameters used in the FUS calculation are indeed applicable. The architect should confirm the coefficient of type construction, that the buildings are indeed sprinklered and etc.

Best Regards,

Mohammed Fawzi, P.Eng.
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - Central Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 20120, Mohammed.Fawzi@ottawa.ca

Please note that due to the current situation, I am working remotely. Email is currently the best way to contact me

From: Manoryk, Spencer <Spencer.Manoryk@wsp.com>
Sent: January 11, 2024 10:49 AM
To: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Cc: Yang, Winston <winston.yang@wsp.com>; Whelan, Amy <amy.whelan@ottawa.ca>
Subject: RE: Boundary Conditions Request - 50 Bayswater Avenue and 1088 Somerset Street W.

APPENDIX

C SANITARY

Sanitary Sewer Design Sheet
Project: 50 Bayswater Avenue and 1088 Somerset Street W
Location: City of Ottawa
WSP Project No. CA0003875.9802
Date: August 2024

LOCATION				RESIDENTIAL AREA AND POPULATION											INDUSTRIAL				COMMERCIAL		INSTITUTIONAL		I+C+I	INFILTRATION			TOTAL	PIPE					
LOCATION	FROM M.H.	TO M.H.	SANITARY DRAINAGE AREA ID	INDV AREA (ha)	ACCU AREA (ha)	NUMBER OF UNITS						POPULATION		PEAK FACT.	PEAK FLOW (l/s)	GROSS AREA (ha)	DEVEL. AREA (ha)	ACCU. AREA (ha)	PEAK FACTOR	INDIV AREA (ha)	ACCU. AREA (ha)	INDIV AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	INDIV AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	**TOTAL FLOW (l/s)**	LENGTH (m)	DIA. (mm)	SLOPE (%)	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)	AVAIL. CAP. (%)
						SINGLES	SEMIS	AVG TOWNS	STACKED TOWNS	1-BED APT.	2-BED APT.	INDIV POP.	ACCU POP.																				
TO SOMERSET ST																																
1088 Somerset	SANMH1	SANMH2	SA-100	0.060	0.060					15	6	34	34	3.68	0.40					0.01	0.01			0.00	0.060	0.06	0.02	**0.42**	13.40	200	2.00	46.38	1.48	**99.09%**
TO BAYSWATER AVE																																
50 Bayswater	SANMH3	SANMH4	SA-200	0.061	0.061					54	26	130	130	3.57	1.51					0.02	0.02			0.01	0.061	0.06	0.02	**1.53**	12.08	200	1.00	32.80	1.04	**95.33%**

DESIGN PARAMETERS

RESIDENTIAL AVG. DAILY FLOW =	280	l/cap/day
COMMERCIAL AVG. DAILY FLOW =	28,000	l/ha/day
	0.324	l/ha/s
INSTITUTIONAL AVG. DAILY FLOW =	28,000	l/ha/day
	0.324	l/ha/s
LIGHT INDUSTRIAL FLOW =	35,000	l/ha/day
	0.405	l/ha/s
HEAVY INDUSTRIAL FLOW =	55,000	l/ha/day
	0.637	l/ha/s

COMMERCIAL PEAK FACTOR =	1.5	(WHEN AREA > 20%)
	1.0	(WHEN AREA < 20%)
INSTITUTIONAL PEAK FACTOR =	1.5	(WHEN AREA > 20%)
	1.0	(WHEN AREA < 20%)
RESIDENTIAL CORRECTION FACTOR, K =	0.80	
MANNING N =	0.013	
PEAK EXTRANEOUS FLOW, I (l/s/ha) =	0.33	

PEAK POPULATION FLOW, (l/s) =	P*q*M/86400
PEAK EXTRANEOUS FLOW, (l/s) =	I*Ac
RESIDENTIAL PEAKING FACTOR, M =	1+(14/(4+P^0.5))*K
Ac = CUMULATIVE AREA (ha)	
P = POPULATION (THOUSANDS)	
SEWER CAPACITY, Qcap (l/s) =	1/N S^(1/2) R^(2/3) Ac
(MANNING'S EQUATION)	

UNIT TYPE	PERSONS/UNIT
SINGLES	3.4
SEMI-DETACHED	2.7
TOWNHOMES	2.7
WALK UP TOWNS	1.8
1-BED APT. UNIT	1.4
2-BED APT. UNIT	2.1
3-BED APT. UNIT	3.1

DESIGNED:	S.M.
CHECKED:	D.B.Y
PROJECT:	50 Bayswater and 1088 Somerset Residential Development
LOCATION:	Ottawa, Ontario
PAGE NO:	1 of 1

NO.	REVISION	DATE
1.	City Submission No.1	2024-08-07

FILE & DWG. REFERENCE: CA0003875.9802, C004

SANITARY SEWAGE - PROPOSED SANITARY FLOWS (1088 Somerset Street)

Project: 50 Bayswater Avenue and 1088 Somerset Street
Location: City of Ottawa
WSP Project No. CA0003875.9802
Date: August, 2024
Design: SM
Page: 1 of 1

Average Wastewater Flows:		
Residential	280	L/c/d
Commercial	28,000	L/gross ha/d
Institutional	28,000	L/gross ha/d
Light Industrial	35,000	L/gross ha/d
Heavy Industrial	55,000	L/gross ha/d

Peaking Factors:	
Residential	Harmon Equation
Commercial (>20% Area)	1.5
Commercial (<20% Area)	1.0
Institutional (>20% Area)	1.5
Institutional (<20% Area)	1.0
Industrial	Per Figure in Appendix 4-B

$$P.F. = 1 + \left(\frac{14}{4 + \left(\frac{P}{1000} \right)^{\frac{1}{2}}} \right) * K$$

where P = population
K = correction factor = 0.8

Peak Extraneous Flows:	
Infiltration Allowance	0.33
Less than 10 ha:	
Foundation Drain Allowance	5.0
10 ha - 100 ha:	
Foundation Drain Allowance	3.0
Greater than 100 ha:	
Foundation Drain Allowance	2.0

Unit Type	**Person Per Unit**	**Unit Count**
Single Family	3.4	
Semi-detached	2.7	
Duplex	2.3	
Townhouse (row)	2.7	
Apartments:		
Bachelor	1.4	0
1 Bedroom	1.4	15
2 Bedroom	2.1	6
3 Bedroom	3.1	
Average Apt.	1.8	
Total Population		**34**

	1088 Somerset Street - Building A		
Demand Type=	**Residential**		
Average Day Demand=	280		L/c/d
Population	**34**		
Site Area (ha)	**0.060**		
	280	x	34
	9,408		L/day
Average Daily Flow=	**0.11**		**L/s**
Peaking Factor Type	Residential		
Peaking Factor	3.7		*Max=4
	3.7	x	average day
	3.7	x	9,408
	34,596		L/day
Peak Daily Flow=	**0.40**		**L/s**
Infiltration Allowance	0.33		
	0.33	x	lot area
	0.33	x	0.060
Peak Extraneous Flow=	**0.02**		**L/s**
	peak daily flow	+	extraneous flow
	0.40	+	0.02
Design Flow=	**0.42**		**L/s**

	1088 Somerset Street - Building A		
Demand Type=	**Commercial**		
Average Day Demand=	28,000		L/gross ha/d
Population	**34**		
Area (ha)	**0.010**		
	28,000	x	0
	267		L/day
Average Daily Flow=	**0.00**		**L/s**
Peaking Factor Type	Commercial		
Peaking Factor	1.5		*Max=4
	1.5	x	average day
	1.5	x	267
	401		L/day
Peak Daily Flow=	**0.00**		**L/s**
Infiltration Allowance	-		
	-	x	lot area
	-	x	0.010
Peak Extraneous Flow=	**-**		**L/s**
	peak daily flow	+	extraneous flow
	0.00	+	0.00
Design Flow=	**0.00**		**L/s**

Total Peak Sanitary Flow **0.42** **L/s**

SANITARY SEWAGE - PROPOSED SANITARY FLOWS (50 Bayswater Ave)

Project: 50 Bayswater Avenue and 1088 Somerset Street
Location: City of Ottawa
WSP Project No. CA0003875.9802
Date: August, 2024
Design: SM
Page: 1 of 1

Average Wastewater Flows:		
Residential	280	L/c/d
Commercial	28,000	L/gross ha/d
Institutional	28,000	L/gross ha/d
Light Industrial	35,000	L/gross ha/d
Heavy Industrial	55,000	L/gross ha/d

Peaking Factors:	
Residential	Harmon Equation
Commercial (>20% Area)	1.5
Commercial (<20% Area)	1.0
Institutional (>20% Area)	1.5
Institutional (<20% Area)	1.0
Industrial	Per Figure in Appendix 4-B

$$P.F. = 1 + \left(\frac{14}{4 + \left(\frac{P}{1000}^{\frac{1}{2}} \right)} \right) * K$$

where P = population
K = correction factor = 0.8

Peak Extraneous Flows:	
Infiltration Allowance	0.33
Less than 10 ha:	
Foundation Drain Allowance	5.0
10 ha - 100 ha:	
Foundation Drain Allowance	3.0
Greater than 100 ha:	
Foundation Drain Allowance	2.0

Unit Type	**Person Per Unit**	**Unit Count**
Single Family	3.4	
Semi-detached	2.7	
Duplex	2.3	
Townhouse (row)	2.7	
Apartments:		
Bachelor	1.4	1
1 Bedroom	1.4	53
2 Bedroom	2.1	26
3 Bedroom	3.1	
Average Apt.	1.8	
Total Population		**130**

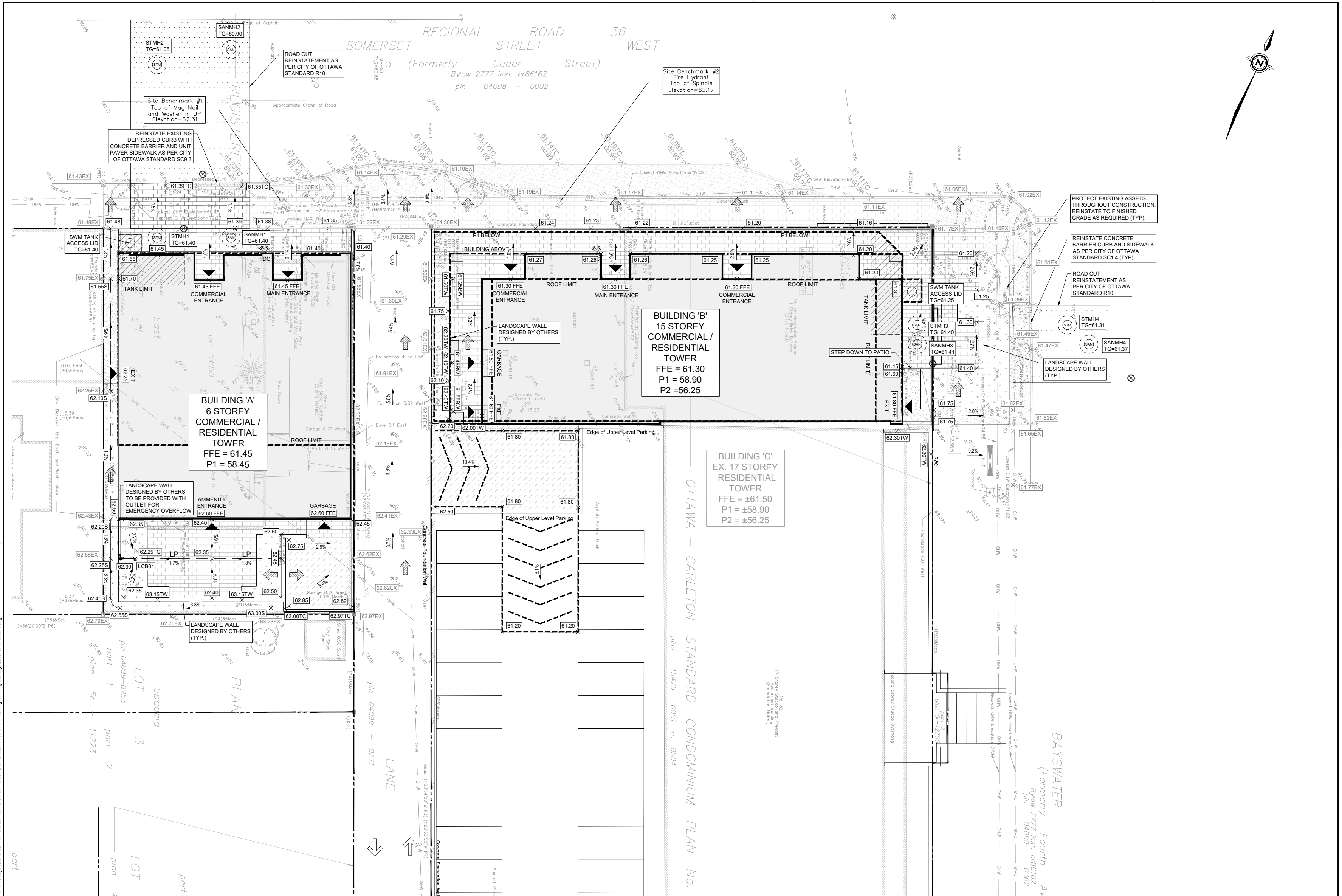
	50 Bayswater Avenue - Building B		
Demand Type=	**Residential**		
Average Day Demand=	280		L/c/d
Population	**130**		
Site Area (ha)	**0.061**		
	280	x	130
	36,456		L/day
Average Daily Flow=	**0.42**		**L/s**
Peaking Factor Type	Residential		
Peaking Factor	3.6		*Max=4
	3.6	x	average day
	3.6	x	36,456
	130,087		L/day
Peak Daily Flow=	**1.51**		**L/s**
Infiltration Allowance	0.33		
	0.33	x	lot area
	0.33	x	0.061
Peak Extraneous Flow=	**0.02**		**L/s**
	peak daily flow	+	extraneous flow
	1.51	+	0.02
Design Flow=	**1.53**		**L/s**

	50 Bayswater Avenue - Building B		
Demand Type=	**Commercial**		
Average Day Demand=	28,000		L/gross ha/d
Population	**130**		
Area (ha)	**0.022**		
	28,000	x	0
	602		L/day
Average Daily Flow=	**0.01**		**L/s**
Peaking Factor Type	Commercial		
Peaking Factor	1.5		*Max=4
	1.5	x	average day
	1.5	x	602
	903		L/day
Peak Daily Flow=	**0.01**		**L/s**
Infiltration Allowance	-		
	-	x	lot area
	-	x	0.022
Peak Extraneous Flow=	**-**		**L/s**
	peak daily flow	+	extraneous flow
	0.01	+	0.00
Design Flow=	**0.01**		**L/s**

Total Peak Sanitary Flow **1.54** **L/s**

APPENDIX

D DRAWINGS



1 GRADING PLAN
C003 SCALE / ÉCHELLE = 1:150

0 5m 10m
SCALE: 1:150

rla/architecture

RENFROE LAND MANAGEMENT

REVISION:

REV	DATE	DESCRIPTION	BY
1	2024-08-07	ISSUED FOR SITE PLAN APPLICATION	SM

SEAL:

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-08-07
PROVINCE OF ONTARIO

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WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA ONTARIO K2B 8K2 CANADA
WSP.COM

PROJECT NUMBER: CA0003875.9802

CLIENT:
RENFROE LAND MANAGEMENT

CLIENT REF.#:

PROJECT:
50 BAYSWATER AVENUE &
1088 SOMERSET STREET W

TITLE:
GRADING PLAN

DRAWING NUMBER: C003
REV. 1

CTB: wsp_ctbawu.ctb
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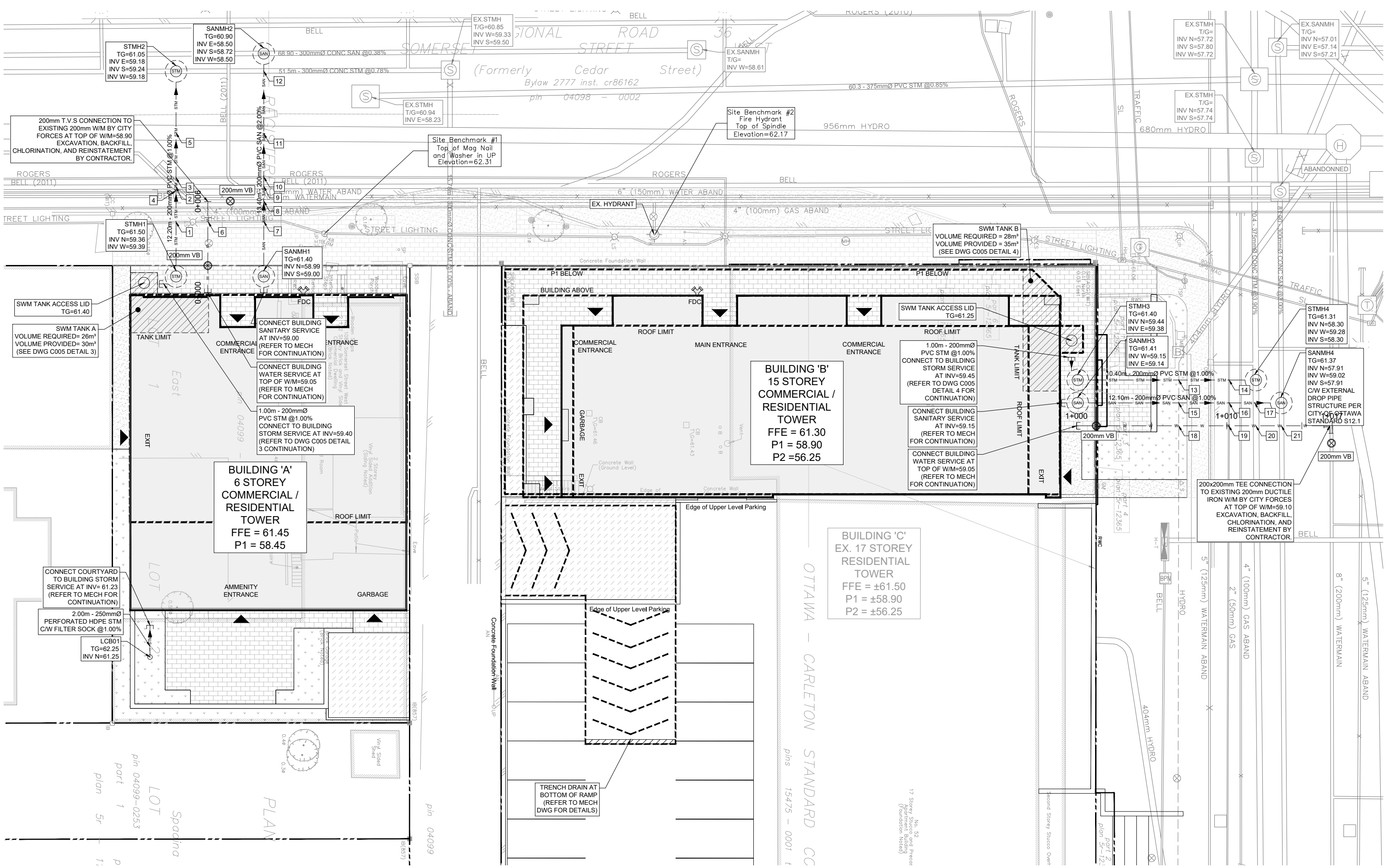

1 C004 SERVICING PLAN

SCALE / ÉCHELLE = 1:150

SCALE: 1:150

PIPE CROSSINGS						
Note: All crossings are calculated OD to OD (Top of Pipe to Bottom of Pipe)						
Crossing	T/G	Top Pipe	(m)	Bottom Pipe	(m)	Clearance (m)
1		Lighting BOT.	60.58	Storm TOP	59.54	1.04
2		Bell BOT.	60.25	Storm TOP	59.52	0.73
3		Rogers BOT.	60.25	Storm TOP	59.51	0.74
4		Storm BOT.	59.29	Water TOP	58.85	0.44
5		Storm BOT.	59.27	Hydro TOP	N/A	N/A
6		Lighting BOT.	60.55	Water TOP	58.90	1.65
7		Lighting BOT.	60.50	Sanitary TOP	59.14	1.36
8		Sanitary BOT.	58.90	Water TOP	58.80	0.10
9		Bell BOT.	60.15	Sanitary TOP	59.09	1.06
10		Rogers BOT.	60.15	Sanitary TOP	59.08	1.07
11		Hydro BOT.	N/A	Sanitary TOP	59.02	N/A
12		Storm BOT.	59.16	Sanitary TOP	58.94	0.22
13		Hydro BOT.	60.27	Storm TOP	59.53	0.74
14		Gas BOT.	60.43	Storm TOP	59.49	0.94
15		Hydro BOT.	60.27	Sanitary TOP	59.29	0.98
16		Gas BOT.	60.43	Sanitary TOP	59.25	1.18
17		Sanitary BOT.	59.02	Storm TOP	58.82	0.21
18		Hydro BOT.	60.32	Water TOP	59.10	1.22
19		Gas BOT.	60.48	Water TOP	59.10	1.38
20		Water BOT.	59.14	Storm TOP	58.87	0.26
21		Water BOT.	58.89	Sanitary TOP	58.33	0.55

STORM STRUCTURE TABLE														
STRUCTURE ID	AREA ID	TOP OF GRATE ELEVATION	STRUCTURE INFO							OUTLET PIPE INFO		ICD INFO		
			INLET	INLET	INLET	OUTLET	SIZE	OPSD	COVER	DIAMETER	TYPE	HEAD (m)	FLOW (l/s)	ICD TYPE
SWM Tank A		61.40				59.400	-	-	S28.1	200	PVC SDR-35	1.61	1.90	HYDROVEX 40SVHV-1
STMH1		61.40			59.390	59.360	1200mm DIA.	OPSD 701.010	S24.1	200	PVC SDR-35			
STMH2		61.05			59.240	59.180	1200mm DIA.	OPSD 701.010	S24.1	300	CONC			
SWM Tank B		61.25				59.450	-	-	S28.1	200	PVC SDR-35	1.31	1.70	HYDROVEX 40SVHV-1
STMH3		61.40			59.440	59.380	1200mm DIA.	OPSD 701.010	S24.1	200	PVC SDR-35			
STMH4		61.31			59.040	58.300	1200mm DIA.	OPSD 701.010	S24.1	375	CONC			
LCB01		62.25				61.250	375mm DIA.	S31	S31	250	HDPE			

WATERMAIN SCHEDULE				
STATION	DESCRIPTION	FINISHED GRADE	TOP OF WATERMAIN	COVER
200mm W/M Service 1088 Somerset Street W				
0+000	W/M STUB	61.45	59.050	2.40
0+001.80	200mm VB	61.43	59.030	2.40
0+004.80	Crossing with 75mm Street Lighting	61.40	59.000	2.40
0+06.00	Connect to Ex. 200mm W/M T.V.S connection by City forces	61.24	58.900	2.34

200mm W/M Service 50 Bayswater Avenue				
1+000	W/M STUB	61.45	59.050	2.40
1+001.30	200mm VB	61.43	59.030	2.40
1+006.80	Crossing with 400mm Hydro	61.40	59.000	2.40
1+010.10	Crossing with 50mm Gas	61.30	58.900	2.40
1+012.00	Crossing with 375mm Storm	61.30	59.350	1.95
1+013.60	Crossing with 300mm Sanitary	61.30	59.100	2.20
1+017.00	Connect to Ex. 200mm W/M with 200X200 Tee	61.30	59.100	2.20

SAN STRUCTURE TABLE								
STRUCTURE ID	TOP OF GRATE ELEVATION	INVERT				DESCRIPTION		
		INLET	INLET	INLET	OUTLET	SIZE	OPSD	COVER
SANMH1	61.40			59.000	58.990	1200mm DIA.	OPSD-701.010	S24
SANMH2	60.90			58.720	58.500	1200mm DIA.	OPSD-701.010	S24
SANMH3	61.41			59.150	59.140	1200mm DIA.	OPSD-701.010	S24
SANMH4	61.37			59.020	57.910	1200mm DIA.	OPSD-701.010	S24

rla/architecture

RENFROE LAND MANAGEMENT

REVISION:

REV	DATE	DESCRIPTION	BY
1	2024-08-07	ISSUED FOR SITE PLAN APPLICATION	SM

SEAL:

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-08-07
PROVINCE OF ONTARIO

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DATE: 2024-08-07
DESIGNED BY: SM
DRAWN BY: SM
APPROVED BY: WY
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WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA ONTARIO K2B 8K2 CANADA
WSP.COM

PROJECT NUMBER: CA0003875.9802

CLIENT:

RENFROE LAND MANAGEMENT

CLIENT REF.#:

PROJECT:

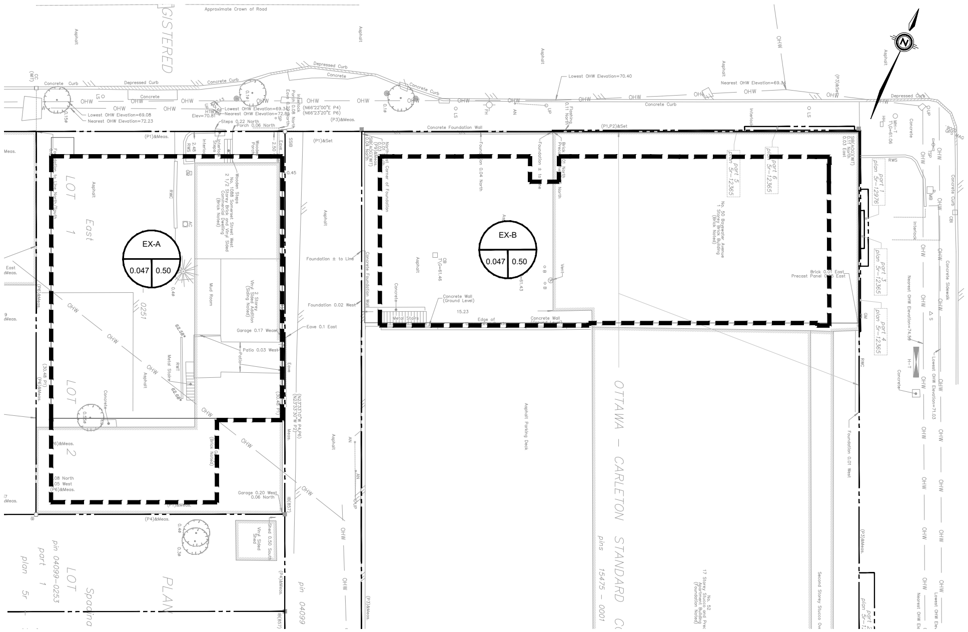
50 BAYSWATER AVENUE & 1088 SOMERSET STREET W

TITLE:

SERVICING PLAN

DRAWING NUMBER: C004

REV. 1



1 C005 EXISTING STORM DRAINAGE AREA PLAN
SCALE / ÉCHELLE = 1:200

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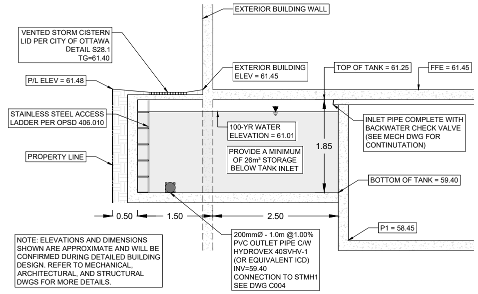

3 C005 BUILDING A - SWM TANK DETAIL
SCALE / ÉCHELLE = 1:50

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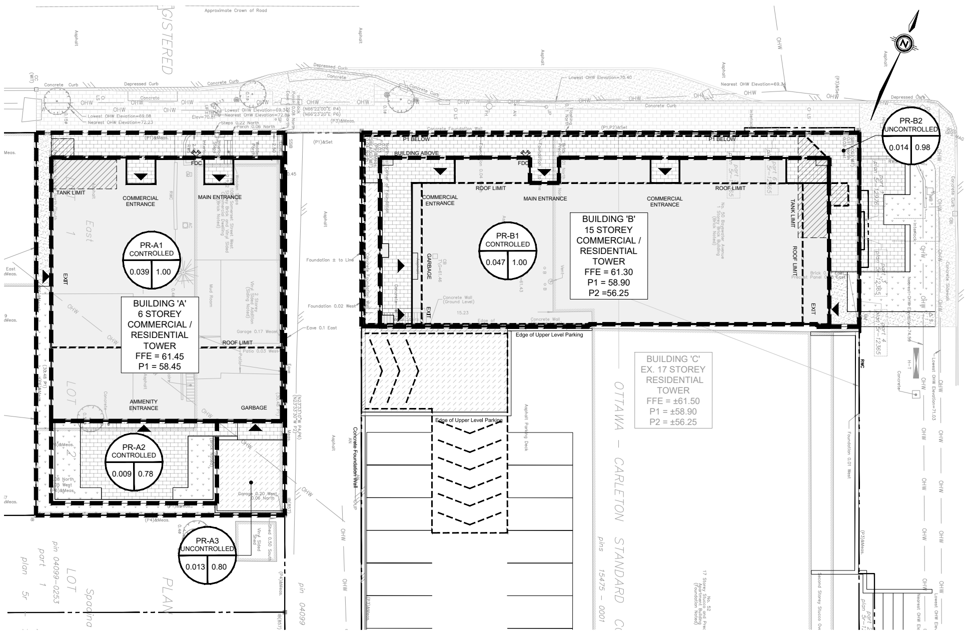

2 C005 PROPOSED STORM DRAINAGE AREA PLAN
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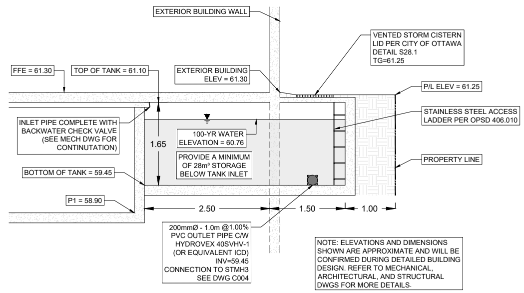

4 C005 BUILDING B - SWM TANK DETAIL
SCALE / ÉCHELLE = 1:50

0 1m 5m
SCALE: 1:50

rla/architecture

RENFROE LAND MANAGEMENT

REVISION:

REV	DATE	DESCRIPTION	BY
1	2024-08-07	ISSUED FOR SITE PLAN APPLICATION	SM

SEAL:

LICENSED PROFESSIONAL ENGINEER D. B. YANG 100230568 2024-08-07 PROVINCE OF ONTARIO

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WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA ONTARIO K2B 8K2 CANADA
WSP.COM

PROJECT NUMBER: CA0003875.9802

CLIENT: RENFROE LAND MANAGEMENT

CLIENT REF.#:

PROJECT: 50 BAYSWATER AVENUE & 1088 SOMERSET STREET W

TITLE: STORMWATER MANAGEMENT PLAN AND DETAILS

DRAWING NUMBER: C005
REV.: 1

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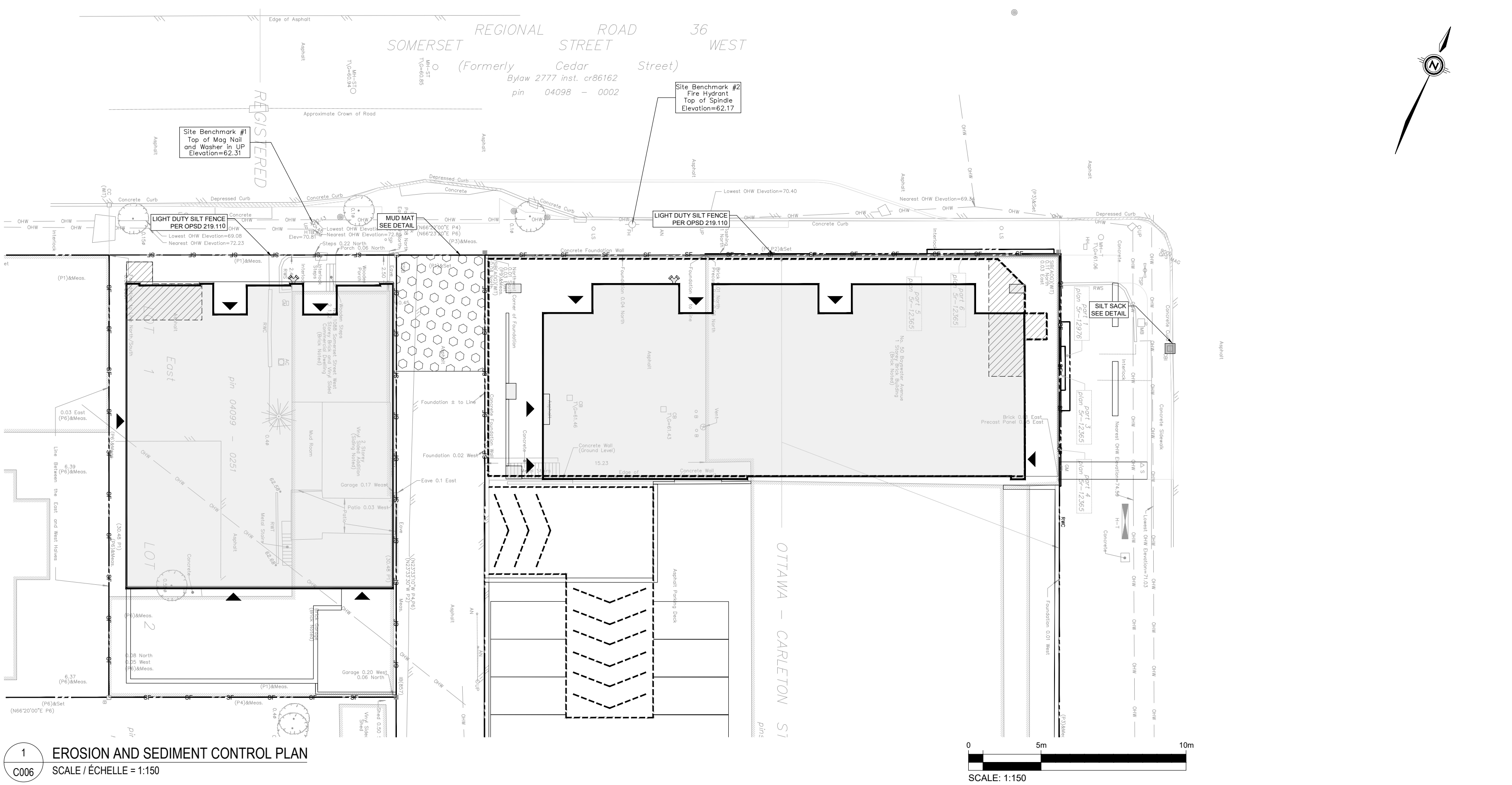

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C006
EROSION AND SEDIMENT CONTROL PLAN
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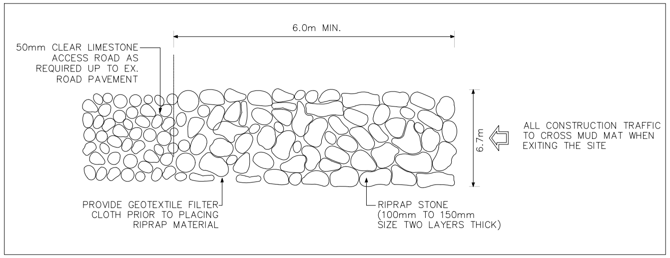
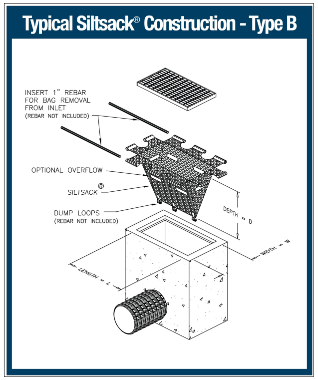


2
C006
MUD MAT DETAIL - PLAN VIEW
SCALE / ÉCHELLE = NTS



3
C006
SILT SACK DETAIL
SCALE / ÉCHELLE = NTS

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RENFROE LAND MANAGEMENT

REVISION:

REV	DATE	DESCRIPTION	BY
1	2024-08-07	ISSUED FOR SITE PLAN APPLICATION	SM

SEAL:
LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-08-07
PROVINCE OF ONTARIO

ORIGINAL SCALE: VARIES
DATE: 2024-08-07
DESIGNED BY: SM
DRAWN BY: SM
APPROVED BY: WY
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm
DISCIPLINE: CIVIL

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WSP.COM

PROJECT NUMBER: CA0003875.9802

CLIENT:
RENFROE LAND MANAGEMENT
CLIENT REF.#:

PROJECT:
50 BAYSWATER AVENUE & 1088 SOMERSET STREET W

TITLE:
EROSION AND SEDIMENT CONTROL PLAN

DRAWING NUMBER: C006
REV. 1

FILE: v:\10-13 me 2023 projects\ca0003875.9802-ca-50 bayswater street and 1088 somerset avenue\14.0 tech_prof services\14.60_civil\43. drawings\working drawings\ca0003875.9802_c.dwg
CTB: wsp_ottawa.ctb
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APPENDIX

E STORM

STORM SEWER DESIGN SHEET
Renfroe Land Management
50 Bayswater Avenue and 1088 Somerset Street
Ottawa, ON
Project: CA0003875.9802
Date: August 2024

LOCATION				AREA (Ha)						RATIONAL DESIGN FLOW												PROPSOED SEWER DATA							
LOCATION	AREA ID	FROM	TO	C= 0.20	C= 0.35	C= 0.50	C= 0.60	C= 0.90	C= 1.00	IND 2.78AC	CUM 2.78 AC	INLET (min)	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (100) (mm/hr)	BLDG FLOW (L/s)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	ICD FIXED FLOW (L/s)	DESIGN FLOW (L/s)	MODIFIED DESIGN FLOW (L/s)	MATERIAL PIPE	SIZE (mm)	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME IN PIPE	AVAIL CAP (L/s)	AVAIL CAP (%)
Proposed Site																															
1088 Somerset	PR-A1, PR-A2	SWM Tank A	STMH1	0.000	0.000	0.000	0.000	0.000	0.047	0.131	0.131	10.00	10.02	76.74	104.11	178.41		10.07	13.66	23.41	1.90	1.90	1.90	PVC	200.0	1.00	1.00	32.83	1.04	0.02	30.93	94.21%
1089 Somerset	PR-A1, PR-A2	STMH1	STMH2	0.000	0.000	0.000	0.000	0.000	0.047	0.131	0.131	11.00	11.19	72.50	98.28	168.33		9.51	12.90	22.09	1.90	1.90	1.90	PVC	200.0	1.00	12.20	32.83	1.04	0.19		
50 Bayswater	PR-B1	SWM Tank B	STMH3	0.000	0.000	0.000	0.000	0.000	0.047	0.131	0.131	10.00	10.02	76.74	104.11	178.41		10.07	13.66	23.41	1.70	1.70	1.70	PVC	200.0	1.00	1.00	32.83	1.04	0.02	31.13	94.82%
51 Bayswater	PR-B1	STMH3	STMH4	0.000	0.000	0.000	0.000	0.000	0.047	0.131	0.131	11.00	11.16	72.61	98.42	168.57		9.53	12.91	22.12	1.70	1.70	1.70	PVC	200.0	1.00	10.30	32.83	1.04	0.16	31.13	94.82%

Definition:
Q=2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (Ha)
i = Rainfall Intensity in millimeters per hour (mm/hr)
i = 732.951/(TC+6.199)^0.810 — 2 Year
i = 1174.184/(TC+6.014)^0.816 — 5 Year
i = 1735.688/(TC+6.014)^0.820 — 100 Year

Notes:
1. Mannings coefficient (n) = 0.013

Designed: SM
Checked: DY
Dwg. Reference: C004 & C005

No.	Revision	Date
1.	City Submission No.1	2024-08-07

File Reference: CA0003875.9802
Date: August, 2024
Sheet No: 1 of 1

APPENDIX

F 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