



2180 Montreal Rd,
Ottawa, ON

FUNCTIONAL SERVICING REPORT

FOR THE PROPERTY LOCATED AT

2180 MONTREAL RD, OTTAWA, ON



Prepared By:

J+B Engineering Inc.
25 Centurian Drive, Suite 201
Markham, Ontario
L3R 5N8

September 23, 2026

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1. INTRODUCTION

1.1 Study Area

The study area is located at south-west corner of the intersection of Shefford Rd and Montreal Rd. The civic address for this property is 2180 Montreal Rd, Ottawa, Ontario and is shown in Figure 1. The study area comprises an existing commercial property (gas bar) and a residential property, which has been rezoned to be incorporated into the proposed development.

This study has been prepared on behalf of Suncor Energy Products to address the servicing requirements of the site which includes water, sanitary and storm development located in Ottawa, Ontario.



Figure 1: Study Area

2. BACKGROUND

2.1 Background Information

This study addresses the stormwater, sanitary, and water servicing requirements associated with the proposed redevelopment and outlines the measures to be implemented to ensure that the development will not have any adverse impacts on the existing servicing infrastructure.

2.2 Land Use

The existing study area consists of two properties which are to be combined for this new development. The larger of the two properties is currently a commercial site. It consists of gas pump station, convenience store and a car wash. The commercial property currently has a Sanitary, Water and a Stormwater conveyance pipe network and connection to the municipal infrastructure in place.

The smaller property was an existing residential site that was rezoned and consolidated to form one larger property. Based on underground locates and city records, existing water and sanitary was not found. However, it will be decommissioned in accordance with city standards during construction once located.

3. WATER SUPPLY AND APPURTENANCES

To calculate the water demand during existing and proposed conditions for the building and car wash, the following design criteria have been utilized:

- MOE – Design Guidelines for Drinking water systems
- Ottawa Design Guidelines – Water Distribution (July 2010)
- Technical Bulletin ISTB-2018-02 (21 Mar 2018)
- Assuming 35 GPM water demand for car wash based on historical data for similar type of car washes.

3.1 Water Supply Existing

The existing gas station is serviced by a 100 mm water service which feeds off a 300 mm dia watermain located along Montreal Road. There is an existing 100mm water meter assembly in the car wash with a 50mm water service feed to the existing C-store. The table below summarizes the calculations for the existing water demand at the site.

The existing water service line to the residential unit is to be located, removed/ abandoned and capped at the main.

Existing - Commercial Site	Area [ha]	Avg Demand* [L/Ha/Day]	Avg Demand [L/s]	Max Daily Demand Factor*	Max Daily Demand [L/s]	Max Hour Demand Factor*	Max Hour Demand [L/s]	Flow Rate [L/s]	Peak Flow (L/s)	Pipe Size [mm]
Car Wash**	-	-	2.208	1.5	3.312	1.8	3.975	2.208	2.208	100.00
Existing commercial building	0.514	28000.000	0.167	1.5	0.250	1.8	0.300	0.167	0.300	50.00
Ex. Commercial site Total								2.375	2.508	-
Existing - Residential Site	Persons	Avg Demand* [L/Ha/Day]	Avg Demand [L/s]	Max Daily Demand Factor*	Max Daily Demand [L/s]	Max Hour Demand Factor*	Max Hour Demand [L/s]	Flow Rate [L/s]	Peak Flow (L/s)	Pipe Size [mm]
Existing Residential Building	3.400	350.000	0.014	2.5	0.034	2.2	0.030	0.014	0.034	-
Ex. Residential site Total								0.014	0.034	-
Existing TOTAL								2.389	2.542	-

* Values obtained from Ottawa Design Guidelines - Water Distribution (Jul 2010)

** Values Assumed based on historical data

Based on the above parameters the water demand for the existing development is calculated as 2.54 L/s.

3.2 Water Supply Proposed

The proposed redevelopment will utilize the existing 100mm diameter water service and meter assembly. A new 50mm PE Water service connection to the proposed building to be feed from the existing water meter assembly.

The water calculations for the proposed development are summarized in the Table 3-1 below. (Refer to Appendix A for calculations.)

Proposed	Area [ha]	Avg Demand* [L/Ha/Day]	Avg Demand [L/s]	Max Daily Demand Factor*	Max Daily Demand [L/s]	Max Hour Demand Factor*	Max Hour Demand [L/s]	Flow Rate [L/s]	Peak Flow (L/s)	Pipe Size [mm]
Car Wash**	-	-	2.208	1.5	3.312	1.8	3.975	2.208	3.975	100.00
Proposed Building	0.606	28000.000	0.196	1.5	0.295	1.8	0.354	0.196	0.354	50.00
Proposed TOTAL					3.607		4.328	2.405	4.328	-

* Values obtained from Ottawa Design Guidelines - Water Distribution (Jul 2010)

** Values Assumed based on historical data

Table 3-1: Water Demand for Proposed Site

Based on the above parameters the average daily demand and maximum hourly demand for the proposed development is calculated as 2.405 L/s and 4.328 L/s respectively. Therefore, when comparing to the calculated existing water demand of 2.54 L/s, under the proposed conditions the existing 100mm water connection will be sufficient to service the proposed site.

As per the Water Boundary Conditions information provided by the City on July 14, 2026 (See Appendix C) the pressure of the existing water service was calculated using the formula below:

$$\text{Pressure (psi)} = (\text{HGL}-\text{Site Elevation}) \times 1.422$$

$$\text{HGL}=116.1\text{m}$$

$$\text{Site Elevation}=87.79\text{m}$$

$$\text{Pressure (psi)} = (116.1-87.78) \times 1.422 = \mathbf{40.26 \text{ psi}}$$

As per Ottawa Design Guidelines – Water Distribution Section 4.2.2.2, the maximum hourly demand conditions are to be no less than 276 kPa (40 psi). As the existing water service has a maximum pressure of 40.26 psi, the existing water service is adequate under peak hour and fire flow conditions.

3.3 Fire flow Calculation

The fire flow requirement for the proposed development is calculated to be 83.33L/s using FUS (Fire Underwriters Survey) method adopting following design parameters.

- Type of construction – Ordinary Construction
- Occupancy Hazard – Combustible
- Automatic Sprinkler – No

The subject property will be serviced by the existing fire hydrants located along Shefford Rd right of way (ROW) approximately 54.7m from the furthest corner of the proposed C-store. Additionally, there is another existing fire hydrant on the east right of way along Shefford Rd approximately 75.3m from the furthest corner of the C-store. No additional fire hydrants are required for the proposed development.

4. SANITARY SEWAGE SYSTEM

To calculate the sanitary flow rate for the existing and proposed conditions for the building and car wash, the following design criteria have been utilized:

- Sewer Design Guidelines – City of Ottawa – Second Edition, October 2012
- Assuming 35 GPM sanitary flow for car wash based on historical data for similar type of car washes.

4.1 Existing Sanitary Sewage System

The existing gas station is serviced by an existing sanitary network comprising within the commercial property and an existing 200mm sanitary lateral discharging into the 250 mm municipal sanitary sewer

located along Shefford Rd. Currently the existing car wash and c-store are being serviced through this connection.

The existing sanitary flow for the commercial property has been calculated to be 3.91L/s. Additionally the sanitary demand for the existing residential property was calculated to be 0.034 L/s. The calculations have been summarized in Appendix B for reference.

4.2 Proposed Sanitary Sewage System

The proposed development will utilize the existing 200 mm sanitary connection from the commercial property connecting to the 250mm sanitary sewer along Shefford Rd. CCTV report indicated two circumferential hairline cracks in the existing sanitary line. As per discussion with the city, it is acceptable to reline the existing sanitary lateral to ensure long-term sustainability and performance of the servicing connection.

The existing sanitary service connection to the residential unit is to be located, removed/abandoned and capped at the main. Refer to the site servicing drawing P-301 in Appendix B.

The sanitary flow from the proposed site has been calculated to be 4.33 L/s. Calculations are summarized in Appendix B.

The City of Ottawa was contacted to perform a downstream sanitary capacity analysis based on our calculated flow rates and it has been confirmed that there are no concern. The correspondence has been included in the Appendix D for reference.

Our findings and conclusions for the sanitary servicing are as follows:

- The anticipated sanitary peak flow for the entire development is 4.33 L/s. For calculation see Appendix B.
- The proposed development will utilize the existing 200mm sanitary connection to 250mm Sanitary sewer along Shefford Rd. However, the sanitary pipe network within the site will be altered to accommodate for the proposed site conditions. Refer to the site servicing drawing P-301 in Appendix B.

5. STORM DRAINAGE SYSTEM

A Stormwater Management Report for this development has been prepared under a separate cover. It identifies the stormwater quantity and quality controls under which this site will operate to comply with the City's Design Criteria.

5.1 Existing Condition

The existing site with a gas station is fully developed with stormwater structures and conveyance system throughout the site to capture the stormwater entering the site and direct it to the municipal storm sewer along Shefford Rd and appears to have no quantity control in place. A portion of the site freely flows uncontrolled into the municipal roads. The residential property does not contain any stormwater management structures in place. However, the site is generally flat with drainage directed towards

Shefford Road. There is a municipal catch basin located in front of the property on Shefford Rd, the drainage from the site is currently being captured by it.

5.2 Proposed Conditions

The existing storm network will be reconfigured to introduce quantity and quality control measures and will utilize existing 400mm lateral to discharge into the existing 550mm storm sewer along Shefford Rd. CCTV report indicates deficiencies were a minor sag and misalignment at the existing 400mm storm lateral. As per discussion with the city, it is acceptable to reline the existing sanitary lateral to ensure long-term sustainability and performance of the servicing connection. Emergency overland flow will sheet flow into municipal ROW along Shefford in accordance with City standards.

6. CONCLUSION

WATER DISTRIBUTION

The proposed development will be serviced via the existing 100 mm domestic water connection from the existing 300 mm watermain located along Montreal Road. A 4.328 L/sec peak water demand has been calculated for this project. Sizing and location of the proposed water services within the proposed buildings will be coordinated with the mechanical consultant at the detailed design stage. Additional fire hydrants are not required for this development.

SANITARY SEWAGE

The existing 200mm sanitary connection to the 250mm sanitary sewer will be utilized for the proposed development. The existing sanitary pipe network within the site is proposed to be altered to match proposed site conditions.

STORM DRAINAGE

The existing storm network will be reconfigured to introduce quantity and quality control measures and will utilize existing 250mm lateral to discharge into the storm sewer along Shefford Rd. Emergency overland flow will sheet flow into municipal ROW along Shefford in accordance with City standards.

Therefore, the existing municipal sewers will not be adversely affected. The major storm drainage will be directly away from the building and entrances and towards the public right of way. For more details regarding the storm water management strategy and design, refer to the storm water management report under s separate cover.



James Sam, P.Eng
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2180 Montreal Rd,
Ottawa, ON

Appendix A

WATER DEMAND CALCULATIONS



2180 Montreal Rd,
Ottawa, ON

Existing & Proposed Water Demand Calculations

Water demand calculations for Existing & Proposed Conditions @ 2180 Montreal Rd

Proposed	Area [ha]	Avg Demand* [L/Ha/Day]	Avg Demand [L/s]	Max Daily Demand Factor*	Max Daily Demand [L/s]	Max Hour Demand Factor*	Max Hour Demand [L/s]	Flow Rate [L/s]	Peak Flow (L/s)	Pipe Size [mm]
Car Wash**	-		2.208	1.5	3.312	1.8	3.975	2.208	3.975	100.00
Proposed Building	0.606	28000.000	0.196	1.5	0.295	1.8	0.354	0.196	0.354	50.00
Proposed TOTAL					3.607		4.328	2.405	4.328	-

* Values obtained from Ottawa Design Guidelines - Water Distribution (Jul 2010)

** Values Assumed based on historical data

Existing - Commercial Site	Area [ha]	Avg Demand* [L/Ha/Day]	Avg Demand [L/s]	Max Daily Demand Factor*	Max Daily Demand [L/s]	Max Hour Demand Factor*	Max Hour Demand [L/s]	Flow Rate [L/s]	Peak Flow (L/s)	Pipe Size [mm]
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Ex. Commercial site Total								2.375	2.508	-
Existing - Residential Site	Persons	Avg Demand* [L/Ha/Day]	Avg Demand [L/s]	Max Daily Demand Factor*	Max Daily Demand [L/s]	Max Hour Demand Factor*	Max Hour Demand [L/s]	Flow Rate [L/s]	Peak Flow (L/s)	Pipe Size [mm]
Existing Residential Building	3.400	350.000	0.014	2.5	0.034	2.2	0.030	0.014	0.034	-
Ex. Residential site Total								0.014	0.034	-
Existing TOTAL								2.389	2.542	-

* Values obtained from Ottawa Design Guidelines - Water Distribution (Jul 2010)

** Values Assumed based on historical data



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Appendix B

SANITARY FLOW CALCULATIONS



Existing & Proposed Sanitary Demand Calculations:

PROPOSED - COMMERCIAL	Commercial Avg Flow* (L/ha/d)	Area [Ha]	FLOW RATE (gal/min)	FLOW RATE (L/s)	Peak Factor*	Peak Flow (L/s)	Extraneous Flows *(L/s)	Total Flow [L/s]
CAR WASH**			35	2.21	1.50	3.308		3.308
C-STORE	50000	0.606	-	0.35	1.50	0.526		0.526
SITE		0.606				3.834	0.17	4.003
						3.834		4.003
PROPOSED TOTAL								4.003
EXISTING-COMMERCIAL	Commercial Avg Flow* (L/ha/d)	Area [Ha]	FLOW RATE (gal/min)	FLOW RATE (L/s)	Peak Factor*	Peak Flow (L/s)	Extraneous Flows* (L/s)	Total Flow [L/s]
CAR WASH**	-	-	35	2.21	1.50	3.308		3.308
C-STORE	50000	0.514	-	0.30	1.50	0.446		0.446
SITE		0.514				3.754	0.14	3.898
						3.754		3.898
EX. COMMERCIAL TOTAL								3.898
EXISTING-RESIDENTIAL	Residential Avg Flow* (L/c/d)	Area [Ha]	Person per unit	FLOW RATE (L/s)	Peak Factor*	Peak Flow (L/s)	Extraneous Flows* (L/s)	Total Flow [L/s]
RESIDENTIAL	350	0.092	3.4	0.0138	4.45	0.409	0.0258	0.435
EX. RESIDENTIAL TOTAL								0.435
EXISTING-TOTAL FLOW								4.333



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Appendix C

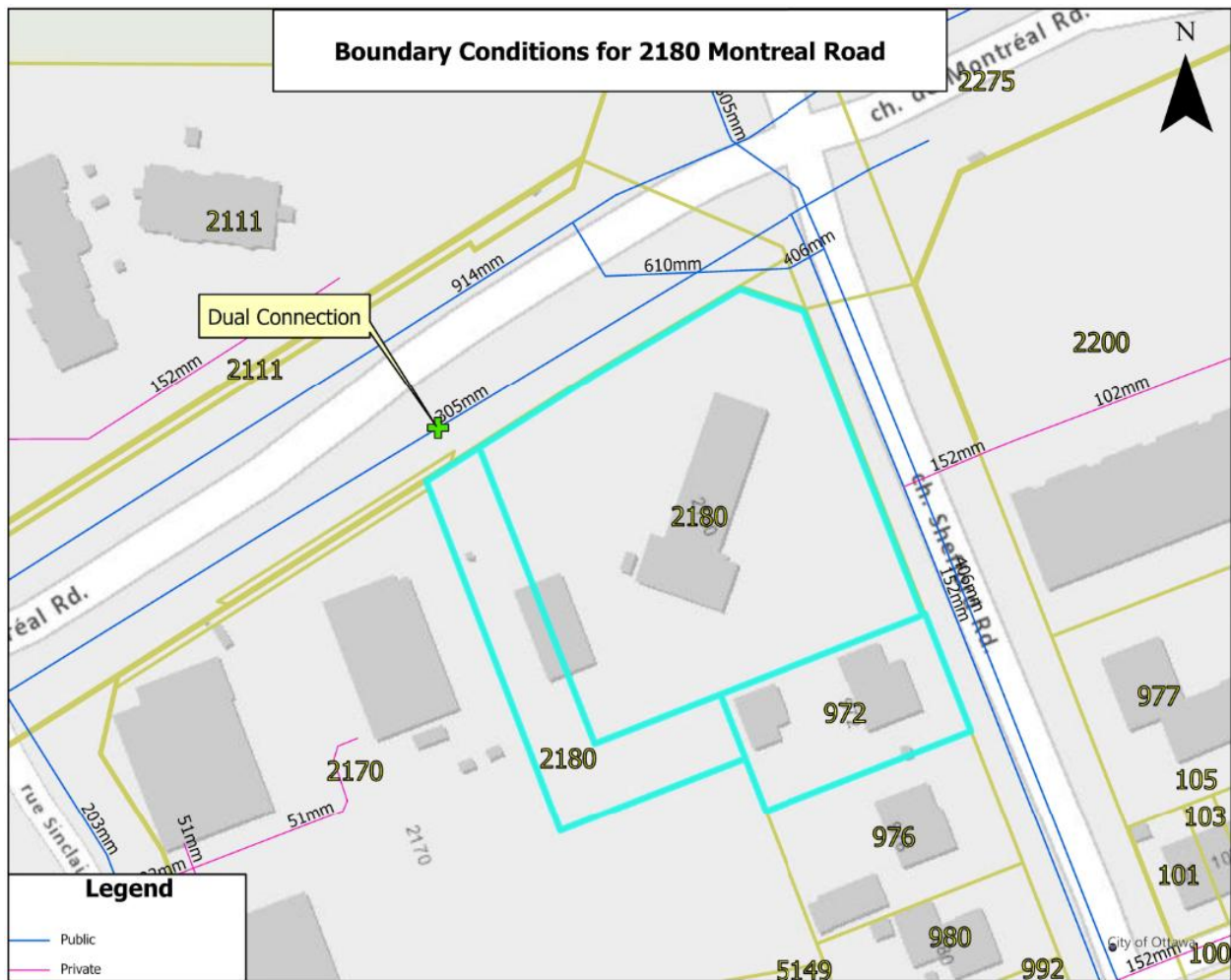
BOUNDARY CONDITION INFORMATION AND EMAIL CORRESPONDENCE

Boundary Conditions 2180 Montreal Rd – 2026

Provided Information

Scenario	Demand
	L/s
Average Daily Demand	2.4
Maximum Daily Demand	3.6
Peak Hour	4.3
Fire Flow Demand #1	83.3 (5,000.0 L/min)

Location



Results

Connection – Montreal Rd

Demand Scenario	Head (m)
Maximum HGL	116.1
Peak Hour	115.5
Max Day plus Fire Flow #1	111.6

Disclaimer

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



David Liu <d.liu@jandb-inc.com>

Fwd: 2180 Montreal Road - Submission Comment Inquiry (D07-12-26-0042)

Charie, Kelsey <kelsey.charie@ottawa.ca>

Tue, Jul 14, 2026 at 11:58 AM

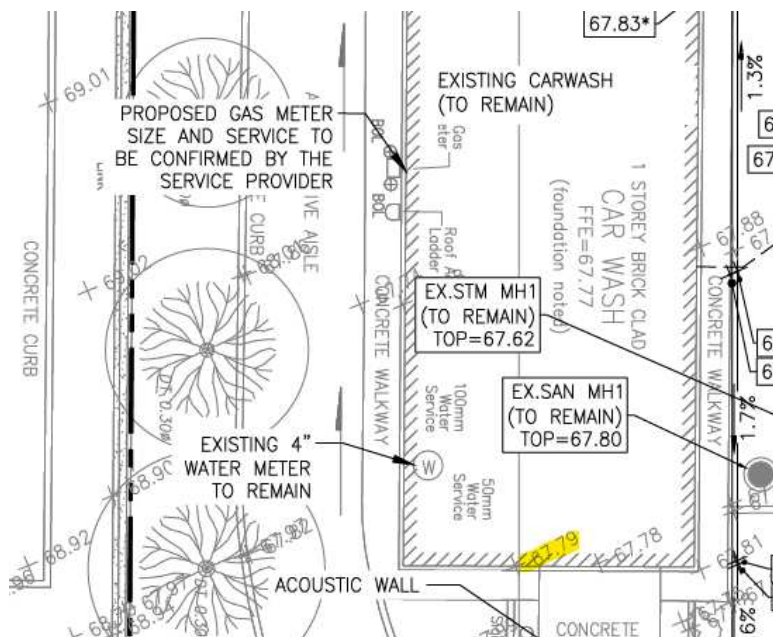
To: David Liu <d.liu@jandb-inc.com>

Cc: James Sam <j.sam@jandb-inc.com>, Ben Lo <b.lo@jandb-inc.com>, "dayna@q9planning.onmicrosoft.com" <dayna@q9planning.onmicrosoft.com>, Fadi Yazji <fyazji@suncor.com>

Hi David,

Please see attached from Water Resources. The psi calcs are still missing so I imagine that the site's ground elevation is missing from Water Resources database? You'll have to include the calculations in your report. You can use the ground elevation where the water service entry point is located.

Please check if there is an elevation point closer to the service entry, but this spot elevation should be sufficient for the calculations.



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From: David Liu <d.liu@jandb-inc.com>

Sent: July 10, 2026 2:22 PM

To: Charie, Kelsey <kelsey.charie@ottawa.ca>

Cc: James Sam <j.sam@jandb-inc.com>; Ben Lo <b.lo@jandb-inc.com>; dayna@q9planning.onmicrosoft.com;

Fadi Yazji <fyazji@suncor.com>

Subject: Re: 2180 Montreal Road - Submission Comment Inquiry (D07-12-26-0042)

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Hi Kelsey,

Thank you for getting back to us so quickly, regarding #1, we would appreciate a word document format to incorporate it into our report appendix accordingly.

Regards,

David Liu
Civil Designer
J+B Engineering Inc.
25 Centurian Drive, Suite 201
Markham, On, L3R 5N8

d.liu@jandb-inc.com
office: 416 – 229 2636 ext. 219

cell: 647-801-7358

On Fri, Jul 10, 2026 at 2:04 PM Charie, Kelsey <kelsey.charie@ottawa.ca> wrote:

Hi David,

Apologies for the delay, I've been away as well as in and out of the office the last few weeks.

1. I'm not sure why Water Resources used different methods of delivering the information. The information is the same in both cases except they seemed to omit the pressure calculations. You can calculate the pressure using the following equation:

Pressure (psi) = (HGL – Site Elevation) × 1.422

(where 1 m of head = 1.422 psi).

Using 6250 Hazeldean example:

Pressure = (159.5 m – 125.0 m) × 1.422 = 49.0 psi

If you would like the Word document format, I can certainly request it from Water Resources. The formatting is a bit cleaner and is easier to incorporate into reports.

2. Once you have calculated the pressures for each demand scenario, you can verify that they satisfy the minimum pressure requirements of the City of Ottawa Water Distribution Design Guidelines (Section 4.22). Provided the available pressures satisfy the applicable criteria, this can be used to demonstrate that the existing water service is hydraulically adequate. A hydrant flow test is generally not required if the City's hydraulic model has been used to establish the available pressures and fire flow.
3. Yes, that looks like a good option. When you update the report, please include a discussion on the selection of the OGS type and explain why the proposed unit is appropriate for a gas station application, including its maintenance considerations.

I hope that helps clarify everything, and please let me know if you can any questions.

Thank you,

Kelsey Charie

Project Manager | Gestionnaire de projet

Development Review - East Branch | Direction de l'examen des projets d'aménagement, Est

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

[110 Laurier Avenue West](#) | 110 avenue Laurier ouest

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From: David Liu <d.liu@jandb-inc.com>

Sent: July 08, 2026 11:59 AM

To: Charie, Kelsey <kelsey.charie@ottawa.ca>

Cc: James Sam <j.sam@jandb-inc.com>; Ben Lo <b.lo@jandb-inc.com>; dayna@q9planning.onmicrosoft.com; Fadi Yazji <fyazji@suncor.com>

Subject: Re: 2180 Montreal Road - Submission Comment Inquiry (D07-12-26-0042)

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Hi Kelsey,

I just wanted to follow up on our previous inquiry regarding the three items outlined in our previous email below sent on June 29, with a follow-up on July 2, to see if the City is able to provide clarification on those action items accordingly.

Regards,

David Liu
Civil Designer
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office: 416 – 229 2636 ext. 219

cell: 647-801-7358

On Thu, Jul 2, 2026 at 3:24 PM David Liu <d.liu@jandb-inc.com> wrote:

Hi Kelsey,

I just wanted to follow up on the email below from my colleague, Ben, regarding the following outstanding items:

1. Documentation listing both the HGLs and the corresponding water pressures, similar to the attached reference provided for another site in [Ottawa \(6250 Hazeldean\)](#).
2. Whether the City can provide the corresponding pressure data for this project and, if so, whether it can be used to demonstrate that the existing water service is adequate, or if a hydrant flow test will be required.
3. Confirmation as to whether the proposed OGS, as outlined in the attached specification, would satisfy the City's requirements as an acceptable alternative to the Jellyfish System.

We would appreciate any update you can provide on the above items.

Regards,

David Liu
Civil Designer
J+B Engineering Inc.
[25 Centurian Drive, Suite 201](#)
Markham, On, L3R 5N8

d.liu@jandb-inc.com
office: 416 – 229 2636 ext. 219

cell: 647-801-7358

On Mon, Jun 29, 2026 at 9:47 AM Ben Lo <b.lo@jandb-inc.com> wrote:

Hi Kelsey,

Hope you had a good weekend.

Please note that Shermila is no longer with J+B. David (cc'ed here) will be taking over this project moving forward.

Following up on your previous responses, I would appreciate some further clarification on the following items:

1. Thank you for providing the email correspondence including the minimum, maximum, and max day + fire flow HGLs. However, the corresponding water pressures were not found. For context, I am currently working on another site in Ottawa where the reviewer, Reed Adams, provided a document listing both HGLs and pressures (attached for your reference). Could you advise if similar documentation can be provided for this project?
2. If the City can provide this pressure data, can we use it to demonstrate that the existing service is adequate? Will a hydrant flow test be required to prove adequacy?
3. We understand that a filter-based system (like the Jellyfish) is not preferred by the City due to maintenance concerns. As an alternative, I have attached the Canadian ETV certification for Imbrium's EFO Oil-Grit Separator (OGS) system. Could you please review this and advise if an OGS unit satisfies the City's low-maintenance requirements and is applicable to our site?

Your assistance is very much appreciated. Please let us know if you have any questions or need further information from our end.

Kind regards,

Ben Lo | Civil Designer

J+B Engineering Inc.

25 Centurian Drive, Suite 201

Markham, ON L3R 5N8

O: 416.229.2636 x 236

F: 416.229.6965

E: b.lo@jandb-inc.com

On Thu, Jun 25, 2026 at 3:04 PM Charie, Kelsey <kelsey.charie@ottawa.ca> wrote:

Hi Ben,

Nice to meet you.

1. Please see the attached email where I previously provided the water boundary conditions.

2. Apologies, no further calculations are needed. The comment should read: "Demonstrate the existing water service is adequate under peak hour and fire flow conditions using City-provided boundary conditions."
3. For the OGS unit, please include the ETV certification in the report. If I missed it in the original submission, my apologies. My original comment was due to the nature of the proposed Jellyfish unit. Based on my review of the specification package, my understanding is that it functions as a filter-based OGS and that, in the event of a spill, immediate cleaning and maintenance of the filters is required. Given the proposed gas station use, I would expect there to be a higher potential for hydrocarbon spills over the life of the site. I am wondering whether an OGS unit with dedicated spill containment capacity may be more suitable for this application and potentially reduce maintenance requirements? Whichever option is proposed, could you please provide a brief discussion in the report regarding the suitability of the selected treatment unit for runoff from the fueling area, including anticipated maintenance requirements and spill response considerations?

I hope that help answer your questions, let me know if there's anything else I can help with.

Regards,

Kelsey Charie

Project Manager | Gestionnaire de projet

Development Review - East Branch | Direction de l'examen des projets d'aménagement, Est

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

110 Laurier Avenue West | 110 avenue Laurier ouest

City of Ottawa | Ville d'Ottawa

From: Ben Lo <b.lo@jandb-inc.com>

Sent: June 23, 2026 3:02 PM

To: Charie, Kelsey <kelsey.charie@ottawa.ca>

Cc: James Sam <j.sam@jandb-inc.com>

Subject: 2180 Montreal Road - Submission Comment Inquiry (D07-12-26-0042)

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Hi Kelsey,

My name is Ben Lo from J+B Engineering, and I am currently handling the civil design for this project.

We would appreciate some clarification on a few of the comments recently received. For your reference, I have included the specific comments below alongside our questions:

1. *Appendix C appears to be missing from the report which should be the City provided water boundary conditions*
Could you please send over the water boundary conditions so we can insert them into our FSR?
2. *Provide hydraulic calculations demonstrating the existing water service is adequate under peak hour and fire flow conditions using City-provided boundary conditions.*
My understanding is the City of Ottawa provides these water boundary conditions once they receive the water demand information from us. Could you please clarify what calculations the city is looking for at this stage?
3. *Please verify that the Jellyfish treatment system is acceptable for runoff from fueling areas.*
Could you please advise if providing a CA ETV certificate for the Jellyfish system will satisfy the City's requirements for this application?

Your assistance with this is greatly appreciated. Please let me know if you need anything from our end.

Kind regards,

Ben Lo | Civil Designer

J+B Engineering Inc.

25 Centurian Drive, Suite 201

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F: 416.229.6965

E: b.lo@jandb-inc.com

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2180 MontrealRd _Boundary Condition (March2026).docx
617K



2180 Montreal Rd,
Ottawa, ON

Appendix D

SANITARY DOWNSTREAM CAPACITY ANALYSIS

RE: Request for Design Parameters - 2180 Montreal Rd, Gloucester External Inbox

 Summarize this email**Charie, Kelsey**to me, Justin, James 

Hi again Shermila,

As expected there are no concerns with the sanitary downstream capacity.

I will hopefully hear back for the water next week, I will be in touch soon.

Regards,

Kelsey

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From: Shermila Raveendren <s.raveendren@jandb-inc.com>**Sent:** March 25, 2026 2:51 PM**To:** Charie, Kelsey <kelsey.charie@ottawa.ca>**Cc:** Armstrong, Justin <justin.armstrong@ottawa.ca>; James Sam <j.sam@jandb-inc.com>**Subject:** Re: Request for Design Parameters - 2180 Montreal Rd, Gloucester**CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.****ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.**

Thank you Kelsey,

Regards,

Shermila Raveendren Civil Designer

J+B Engineering Inc.

25 Centurian Drive, Suite 201

Markham, ON L3R 5N8

O: 416.229.2636 x 216

E: s.raveendren@jandb-inc.comOn Wed, Mar 25, 2026 at 2:40 PM Charie, Kelsey <kelsey.charie@ottawa.ca> wrote:

Awesome thank you Shermila,

I'll take a look through everything and then get it sent off to our Asset Management group so they can assess capacity for water and sanitary (unlikely to be a back to you with the results.

Regards,

Kelsey Charie

Project Manager | Gestionnaire de projet

Development Review - East Branch | Direction de l'examen des projets d'aménagement, Est

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

110 Laurier Avenue West | 110 avenue Laurier ouest

City of Ottawa | Ville d'Ottawa

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

From: Shermila Raveendren <s.raveendren@jandb-inc.com>**Sent:** March 25, 2026 2:21 PM**To:** Charie, Kelsey <kelsey.charie@ottawa.ca>**Cc:** Armstrong, Justin <justin.armstrong@ottawa.ca>; James Sam <j.sam@jandb-inc.com>**Subject:** Re: Request for Design Parameters - 2180 Montreal Rd, Gloucester**CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.**

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Hi Kelsey, Justin,

Please ignore the information filled in blue for the Water Boundary condition request in the previous email and the attached "250344-Water demand Calculations" document. I have relevant revised documents and also included the Sanitary Flow Calculations with the Peak flows. Apologies for any inconvenience this may cause.

- i. The location of the service and the expected water demand of the proposed development shown on a plan, figure, or map; **Included in attachment "250344-P-300-WATER DI**
- ii. Type of development; **Commercial**
- iii. Average daily demand: **~~0.010 I/s~~ 2.405 L/s**
- iv. Maximum daily demand: **~~0.0149 I/s~~ 3.607 L/s**
- v. Maximum hourly daily demand: **~~0.0179 I/s~~ 4.328 L/s**
- vi. Required fire flow: **83.33 I/s**
- vii. Supporting calculations for all demands listed above **Included in attachment "250344-Water demand Calculations" "Revised - 250344-Water demand Calculations"**

Regards,

Shermila Raveendren Civil Designer

J+B Engineering Inc.

25 Centurian Drive, Suite 201

Markham, ON L3R 5N8

O: 416.229.2636 x 216

E: s.raveendren@jandb-inc.com

On Wed, Mar 25, 2026 at 11:44 AM Shermila Raveendren <s.raveendren@jandb-inc.com> wrote:

Hi Kelsey,

Thank you for the information. There has actually been a decrease in sanitary demand since the proposed redevelopment incorporates the adjacent residential property. There has decreased, resulting in an overall decrease in sanitary demand. We calculated the existing and proposed sanitary demand to be the following:

Existing Sanitary Demand = 4.33 L/s

(Ex. San Demand from Commercial site = 3.89 L/s)

(Ex. San Demand from Residential site = 0.435 L/s)

Proposed Sanitary Demand = 4.003 L/s

Could you please assess the downstream capacity based on these values?

I have also filled the information required in **blue** for the water boundary conditions below.

- i. The location of the service and the expected water demand of the proposed development shown on a plan, figure, or map; **Included in attachment "250344-P-300-WATER**
- ii. Type of development; **Commercial**
- iii. Average daily demand: **0.010 I/s**
- iv. Maximum daily demand: **0.0149 I/s**
- v. Maximum hourly daily demand: **0.0179 I/s**
- vi. Required fire flow: **83.33 I/s**
- vii. Supporting calculations for all demands listed above **Included in attachment "250344-Water demand Calculations"**

Please let me know if you need any additional information. Your help is much appreciated.

Regards,

Shermila Raveendren Civil Designer

J+B Engineering Inc.

25 Centurian Drive, Suite 201

Markham, ON L3R 5N8

O: 416.229.2636 x 216

E: s.raveendren@jandb-inc.com

On Fri, Mar 13, 2026 at 7:40 AM Charie, Kelsey <kelsey.charie@ottawa.ca> wrote:

Good morning everyone,

Yes that is correct. The site layout has a few different design options but in terms of servicing there has been no changes that I am aware of.

In addition to the info Justin highlighted for the water boundary conditions, do you have an anticipated sanitary flow for the site and an approximate calcu increase is pretty minor but I can take it to our Asset Management Branch for assessing downstream capacity.

Thank you,

Kelsey Charie

Project Manager | Gestionnaire de projet

Development Review - East Branch | Direction de l'examen des projets d'aménagement, Est

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

110 Laurier Avenue West | 110 avenue Laurier ouest

City of Ottawa | Ville d'Ottawa

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From: Armstrong, Justin <justin.armstrong@ottawa.ca>
Sent: March 12, 2026 3:53 PM
To: Shermila Raveendren <s.raveendren@jandb-inc.com>
Cc: James Sam <j.sam@jandb-inc.com>; Charie, Kelsey <kelsey.charie@ottawa.ca>
Subject: Re: Request for Design Parameters - 2180 Montreal Rd, Gloucester

Hi Shermila,

I'm including Kelsey Charie who was the City of Ottawa IPM assigned to this application for the pre-consultation meeting (PC2024-0187).

I am also passing along the attached e-mail which was provided by the file lead, Lucy Ramirez, to the applicant following the pre-consultation meeting.

Within the attached e-mail you will find the Feedback Letter, which has pertinent engineering information in Section 3. Bullet point #26 speaks to what needs to be submitted need to provide that information to Kelsey so that he can initiate the boundary condition request. The City of Ottawa's Water Distribution Guidelines should be followed in yo

I believe there have been multiple design options/layouts discussed for this site since the pre-consultation meeting, however I don't believe those impacted the engineering

Thank you,
Justin

Justin Armstrong, P.Eng

Senior Engineer - Infrastructure Applications

City of Ottawa

Development Review - East Branch

Planning, Development and Building Services Department (PDBS)

Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)

110 Laurier Ave West, 4th Floor East;

Ottawa ON K1P 1J1

Tel: 613-580-2424 x 21746

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From: Shermila Raveendren <s.raveendren@jandb-inc.com>
Sent: Thursday, March 12, 2026 2:01 PM
To: Armstrong, Justin <justin.armstrong@ottawa.ca>
Cc: James Sam <j.sam@jandb-inc.com>
Subject: Request for Design Parameters - 2180 Montreal Rd, Gloucester

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Hi Justin,

I am writing on behalf of J + B Engineering Inc. regarding a redevelopment project at 2180 Montreal Road that we are currently working on. We would like to request the boi demands that should be used for this site for our design purposes. Your help would be greatly appreciated.

Regards,

Shermila Raveendren Civil Designer
J+B Engineering Inc.
25 Centurian Drive, Suite 201
Markham, ON L3R 5N8
O: 416.229.2636 x 216
E: s.raveendren@jandb-inc.com

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2180 Montreal Rd,
Ottawa, ON

Appendix E

FUS CALCULATION



25 Centurian Drive, Suite 201
Markham, Ontario
L3R 5N8

Telephone: (416) 229-2636
Fax: (416) 229-6965
E-mail: staff@jandb-inc.com

Project: 250344

Date: 12-Mar-26

Fire Flow Calculation - FUS method

Coefficient	Ordinary construction (Brick and other Masonry walls)	C=	1	
Total Floor Area	Commercial addition to an existing commercial/ industrial development	A=	313.31	sqm
Fire flow		F=	220 C √A	l/m
		=	3894.09	l/m
		≈	4000.00	l/m
Occupancy Hazard	Combustible	Surcharge	0.00	%
		F=	4000.00	l/m
Automatic Sprinkler System	No	Reduction	0.00	%
		F=	4000.00	l/m
Separation with adjacent buildings	3.1 to 10m	Surcharge	20.00	%
		F=	4800.00	l/m
Fire Flow			≈	
			5,000.00	l/m
			83.33	l/s