

# **FUNCTIONAL SERVICING STUDY REPORT**

For  
2409 Carlsen Avenue, Ottawa

**Prepared by:**

*W.Elias & Associates  
204 Borealis Cres . Ottawa, ON K1J 4V1  
Mobile | 613.762.7800  
EMAIL: [wissamelias@gmail.com](mailto:wissamelias@gmail.com)*



Revision 1  
March 2025

## 1. Project Description:

### 1.1. Introduction:

Property at 2409 Carlsen Avenue is located close to intersection of Carlsen Avenue and Heron Road, Ottawa, Ontario. The property is about 0.11 Hectare severed from an existing lot which contain an existing two story building.

Property at 2409 Carlsen Avenue is currently under R3A Zoning. Due to market demand for residential, the idea initiated to use the lot to build 3 three-story dwelling that contains 8 units each. This report will address the servicing (water, sanitary) requirements associated with the proposed development located at 2409 Carlsen Avenue within the City of Ottawa, Ontario. This report is prepared in response to the request from City of Ottawa Planning department.

### 1.2. Existing Conditions:

The existing site located at 2409 Carlsen Avenue. The property measure a total area of approximately 0.11 Hectare. The site is fronting 305mm diameter UCI water main on Heron Road, 152mm diameter CI water main on Carlsen Avenue and 152mm diameter CI water main on Chasseur Ave. Also the site is fronting 300mm diameter Concrete sanitary main on Heron Road, 225mm diameter Concrete sanitary main on Carlsen Avenue and 300mm diameter Concrete sanitary main on Chasseur Avenue. In this report the development water and sanitary connection will be to mains on Carlsen Avenue and Chasseur Avenue.



### 1.3. Guidelines, Previous Studies, And Reports

The following studies were utilized in the preparation of this report:

- Ottawa Sewer Design Guidelines,  
City of Ottawa, SDG002, October 2012.  
(City Standards)
  - Technical Bulletin ISTB-2018-01  
City of Ottawa, March 21, 2018.  
(ISTB-2018-01)
  - Technical Bulletin ISTB-2018-04  
City of Ottawa, June 27, 2018.  
(ISTB-2018-04)
- Ottawa Design Guidelines Water Distribution  
City of Ottawa, July 2010.  
(Water Supply Guidelines)
  - Technical Bulletin ISD-2010-2  
City of Ottawa, December 15, 2010.  
(ISD-2010-2)
  - Technical Bulletin ISDTB-2014-02  
City of Ottawa, May 27, 2014.  
(ISDTB-2014-02)
  - Technical Bulletin ISTB-2018-02  
City of Ottawa, March 21, 2018.  
(ISTB-2018-02)
- Design Guidelines for Sewage Works,  
Ministry of the Environment, 2008.  
(MOE Design Guidelines)
- Stormwater Planning and Design Manual,  
Ministry of the Environment, March 2003.  
(SWMP Design Manual)
- Ontario Building Code Compendium  
Ministry of Municipal Affairs and Housing Building Development Branch,  
January 1, 2012 Update. (OBC)
- Geotechnical Investigation Report

## 2. Water Supply

### Residential Water Demand:

The water demand is calculated based on the City of Ottawa Design Guidelines – Water Distribution as follows:

Design Parameter	Value
Residential 1 Bedroom Apartment	1.4 P/unit
Residential 2 Bedroom Apartment	2.1 P/unit
Residential Average Daily Demand	280 L/d/P
Residential Maximum Daily Demand	2.5 x Average Daily *
Residential Maximum Hourly	2.2 x Average Daily *
Commercial Retail	2.5 L/m <sup>2</sup> /d
Commercial Maximum Daily Demand	1.5 x avg. day
Commercial Maximum Hour Demand	1.8 x max. day
Minimum Watermain Size	150mm diameter
Minimum Depth of Cover	2.4m from top of watermain to finished grade
During normal operating conditions desired operating pressure is within	350kPa and 480kPa
During normal operating conditions pressure must not drop below	275kPa
During normal operating conditions pressure must not exceed	552kPa
During fire flow operating pressure must not drop below	140kPa

■ Residential occupancy = 1.4 persons per one bedroom apartment and 2.1 persons per 2 bedroom apartment and 3.1 persons per 3 bedroom apartment

- 7 x 2 bedroom units x 2.1 (average) pers./unit = 14.7 persons
- 1 x 1 bedroom units x 1.4 (average) pers./unit = 1.4 persons

Total occupancy taken as = 16.1 persons taken as 17 persons

Residential Average Daily Demand = 280 L/c/d.

- Average daily demand of 280 L/c/day x 17 persons = 4760 Liters/day or 0.06 L/s
- Maximum daily demand (factor of 2.5) is 0.06 L/s x 2.5 = 0.15 L/s
- Peak hourly demand (factor of 2.2) = 0.15 L/s x 2.2 = 0.33 L/s

## Fire Fighting Requirement

### Based on Fire Underwriter Survey Method

Fire flow protection requirements were calculated as per the Fire Underwriter's Survey (FUS). The estimated fire flow for the proposed buildings was calculated in accordance with ISTB-2018-02. The following parameters were provided by the Architect:

- Type of construction – Ordinary Construction
- Occupancy type – Limited Combustibility
- Sprinkler Protection – Standard Fully Supervised Sprinkler System

The fire flow demand was estimated to be 5,000 L/min,

#### Fire Flow Calculations as per Fire Underwriter's Survey Guidelines

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

where

F= Required fire flow in L/min

C= Coefficient related to the type of construction

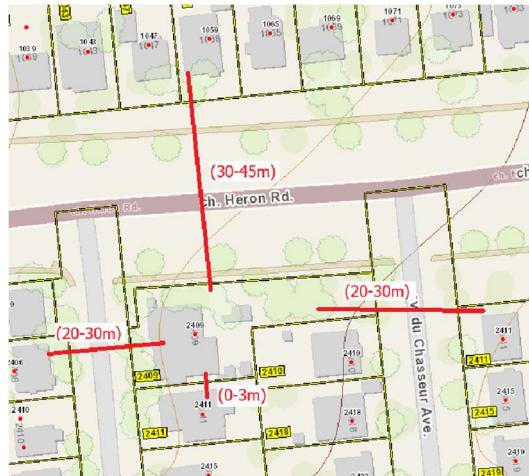
A= Total floor area in m<sup>2</sup>

Address:

File No.:

<b>C</b>	<b>Coefficient Related to Type of Construction</b>			<b>C-Value</b>
	• Wood Frame Construction	<input type="checkbox"/>		1.5
	• Ordinary Construction	<input checked="" type="checkbox"/>		1.0
	• Non-Combustible Construction	<input type="checkbox"/>		0.8
	• Fire-Resistive Construction	<input type="checkbox"/>		0.6
				<b>C = 1.0</b>
<b>A</b>	<b>Total Floor Area (m<sup>2</sup>)</b>			
	4845 ft <sup>2</sup>		450.12 m <sup>2</sup>	
<b>F</b>	<b>Required Fire Flow (L/min)</b>			
	= $220C\sqrt{A}$			
	= <b>4668</b> L/min			
<b>Occupancy Reductions or Surcharges</b>				
	• Non-Combustible	<input type="checkbox"/>		-25%
	• Limited Combustible	<input checked="" type="checkbox"/>		-15%
	• Combustible	<input type="checkbox"/>		0%
	• Free Burning	<input type="checkbox"/>		15%
	• Rapid Burning	<input type="checkbox"/>		25%
				-15%
			<b>3967</b>	<b>L/min</b>
<b>Sprinkler Reduction</b>				
	• Adequately Designed System	<input type="checkbox"/>		-30%
	• Water Supply is Standard	<input type="checkbox"/>		-10%
	• Fully Supervised System	<input checked="" type="checkbox"/>		-10%
				-10%
	Reduction:	3967 L/min		
	Fire Flow:	397 L/min		
		<b>3571 L/min</b>		
<b>Exposure Surcharge</b>				
	<b>Distance</b>	<b>Charge</b>	<b># of Sides</b>	
	• 0 to 3m	25%	1	25%
	• 3.1 to 10m	20%		
	• 10.1 to 20m	15%		
	• 20.1 to 30m	10%	2	20%
	• 30.1 to 45m	5%	1	5%
				50%
	Surcharge:	3571 L/min		
	Fire Flow:	1785 L/min		
		<b>5356 L/min</b>		
<b>REQUIRED FIRE FLOW</b>				
Cannot exceed 45,000 L/min nor be less than 2,000 L/min				
			<b>5000 L/min</b>	
	or		83 L/s	
	or		1100 IGPM	





Exposure Distance utilized in FUS calculation

There are three (3) existing fire hydrants in proximity to the proposed building that are available to provide the required fire flow demand of 5,000 L/min. Fire hydrant locations are demonstrated in below sketch. Table below summarizes the aggregate fire flow of the contributing hydrants in close proximity to the proposed development based on Table 18.5.4.3 of ISTB-2018-02.



Fire Protection Summary Table

Building	Fire Flow Demand (L/min)	Fire Hydrant within 75m	Fire Hydrant within 150m	Fire Hydrant within 300m	Available Combine Fire Flow (L/min)
Proposed 2409 Carlsen Avenue	5,400	2	0	0	(2 x 5678) + (0 x 3785) = 11,356

The total available fire flow from contributing hydrants is equal to 11,356L/min which will provide adequate fire flow for the proposed development. A certified fire protection system specialist will need to be employed to design the building's fire suppression system and confirm the actual fire flow demand.

The city of Ottawa was contacted to obtain boundary conditions associated with the estimated water demand. The followings are boundary conditions, HGL, for hydraulic analysis at 2409 Carlsen Avenue assumed to be three separate buildings connected via three connections to 152mm watermain at Carlsen and 152mm watermain at Chasseur. Note that 2409 Carlsen Avenue is located in zone 2W2C water pressure.

All three connections:

Minimum HGL: 123.9 m

Maximum HGL: 132.0 m

Max Day + Fire Flow (90 L/s): 116.0 m (Connection 1), 116.0 m (Connection 2), 115.7 m (Connection 3)

Average ground elevation of 78.50 m

Analyzing results:

Demand Scenario	Head (m)	Pressure (KPa)
Max. HGL	$132.0 - 78.50 = 53.50$	524
Min HGL	$123.9 - 78.50 = 45.40$	445
Max Day + Fire Flow	$116.0 - 78.50 = 37.50$	368

❖ Ground Elevation = 78.50 m

Floor Elevation	Max Day + Fire Flow (m) = 116.0	Pressure (KPa) at Each Floor
Ground Floor EL. = 80.00 m	36.0	353

Based on City of Ottawa Design Guidelines – Water Distribution existing water service size of 25mm is adequate where the residential water pressure is over 310 kPa. As such, since the calculated pressure is approximately above the minimum requirement, the service diameter for the proposed development recommended to be 25mm.

Note that pressure test will be required at the time of construction to confirm minimum pressure is supplied for proposed development.

The proposed water supply design conforms to all relevant City Guidelines and Policies.

### 3. Sanitary Sewage

The sanitary flow is calculated based on the Ministry of Environment Guidelines as follow:

Design Parameter	Value
Residential 1 Bedroom Apartment	1.4 P/unit
Residential 2 Bedroom Apartment	2.1 P/unit
Average Daily Demand	280 L/d/per
Peaking Factor	Harmon's Peaking Factor. Max 4.0, Min 2.0 Harmon Correction Factor 0.8
Commercial Floor/Amenity Space	2.5 L/m <sup>2</sup> /d
Commercial Peaking Factor*	1.0
Infiltration and Inflow Allowance	0.05 L/s/ha (Dry) 0.28 L/s/ha (Wet) 0.33 L/s/ha (Total)
Sanitary sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} AR^{\frac{2}{3}} S^{\frac{1}{2}}$
Minimum Sewer Size	200 mm diameter
Minimum Manning's 'n'	0.013
Minimum Depth of Cover	2.5 m from crown of sewer to grade
Minimum Full Flowing Velocity	0.6 m/s
Maximum Full Flowing Velocity	3.0 m/s

#### 3.1.Sanitary Sewage Calculation

##### Design Flows

Residential

- ☐ 7 x 2 bedroom units x 2.1 (average) pers./unit = 14.7 persons
- ☐ 1 x 1 bedroom units x 1.4 (average) pers./unit = 1.4 persons

Total occupancy taken as = 16.1 persons taken as 17 persons

Residential Average Daily Demand = 280 L/c/d.

- ☐ Average daily of 280 L/c/day x 17 persons = 4760 Liters/day or 0.06 L/s

Peaking Factor =  $1 + 14 / (4 + (13 / 1000)^{0.5}) = 4.40$  \*use 4 maximum

Q Peak Domestic = 0.06 L/sec x 4.0 = 0.24 L/sec

##### Infiltration

Q Infiltration = 0.11 L/S/Gross hectare x 0.10 ha = 0.01 L/sec

**Total Peak Sanitary Flow = 0.24 + 0.01 = 0.25 L/sec**



The Ontario Building Code specifies minimum pipe size and maximum hydraulic loading for sanitary sewer pipe. OBC 7.4.10.8 (2) states "Horizontal sanitary drainage pipe shall be designed to carry no more than 65% of its full capacity." A 150 mm diameter sanitary service with a minimum slope of 5.0% has a capacity of 73 Litres per second.

The maximum peak sanitary flows for the site is 0.43 L/s. Since 0.43 L/s is much less than  $0.65 \times 73 = 47$  L/s, which means existing 150mm sanitary line has enough capacity.

The flow depth under peak flow is less than 0.3 of the pipe diameter, therefore, the actual velocity is calculated and pipe slope increased to 5% achieve minimum self-cleansing velocity of 0.6m/s as per the recommendation of section 6.1.2 of the City of Ottawa Sewer Design Guidelines. Please refer to the appendix for sanitary design calculation sheet.

Sewage discharges will be domestic in type and in compliance with the Ministry of Environment guidelines. The peak sanitary flow from the proposed development is less than 10 percent of the capacity of the existing sanitary. As such the proposed increase in sanitary flow as a result of the construction of the proposed development is negligible and there is sufficient available capacity for the proposed development.

Should you have any questions or comments, please feel free to contact undersigned.

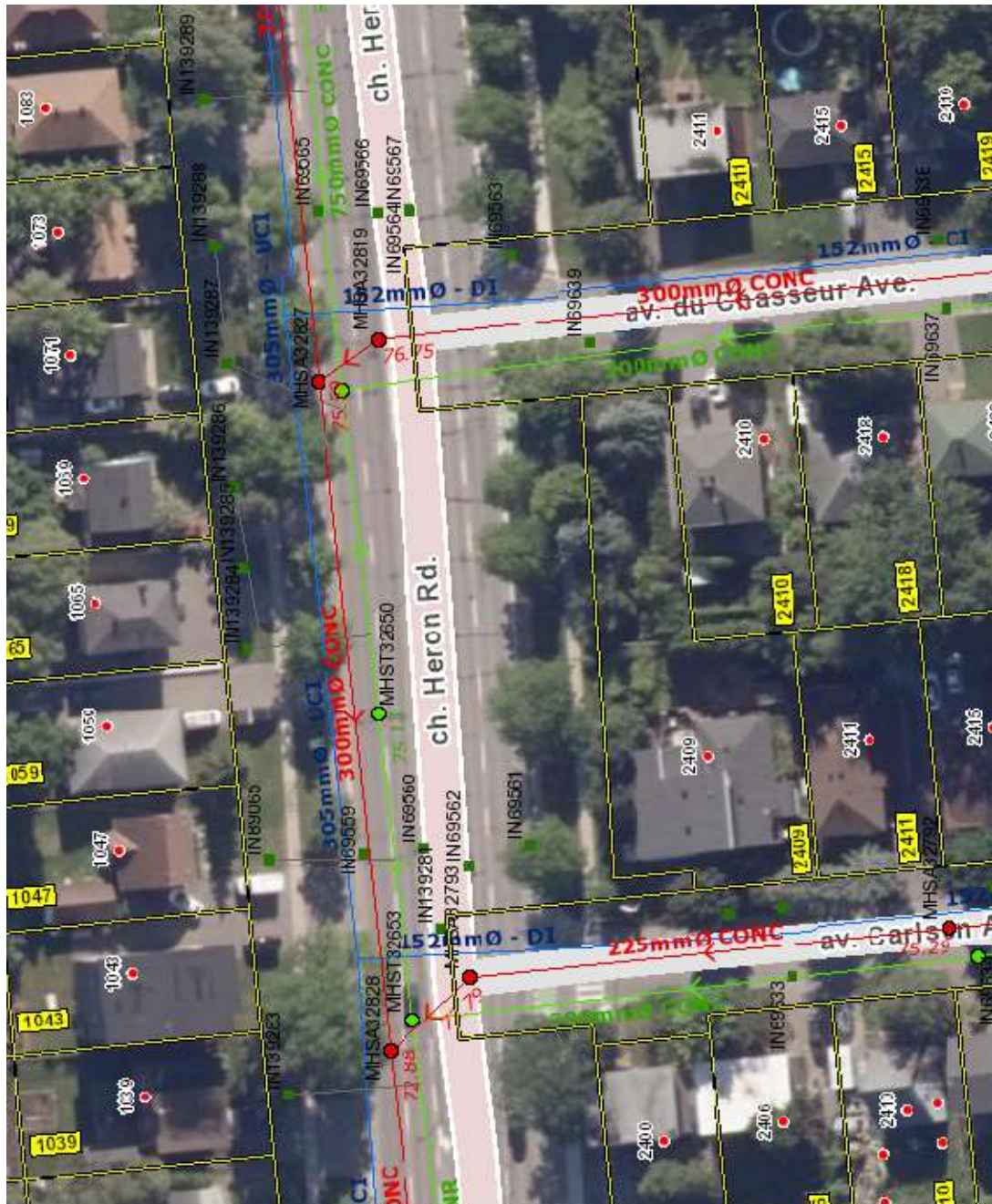


Yours truly,  
Wissam Elias, P. Eng  
Senior Project Manager

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**APPENDIX A:**  
**GeoOttawa Snapshot**

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## APPENDIX B:

### Correspondent & Architectural/Engineering Drawings

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## Fwd: Request for boundary conditions 2409 Carlsen

1 message

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Sam Elias <wissamelias@gmail.com>

Fri, Jul 19, 2024 at 7:43 AM

204 BOREALIS Cresc, Ottawa, ON K1K 4V1  
wissamelias@gmail.com | T 613 762-7800  
www.eliasengineering.ca

----- Forwarded message -----

From: **Whelan, Amy** <amy.whelan@ottawa.ca>  
Date: Fri, Jul 19, 2024 at 7:42 AM  
Subject: RE: Request for boundary conditions 2409 Carlsen  
To: Sam Elias <wissamelias@gmail.com>

Good morning Sam,

Please find the boundary condition results below:

The following are boundary conditions, HGL, for hydraulic analysis at 2409 Carlsen Avenue (zone 2W2C) assumed to be three separate Buildings connected via three connections to 152mm watermain at Carlsen and 152mm watermain at Chasseur (see attached PDF for location).

-

All three connections:

Minimum HGL: 123.9 m

Maximum HGL: 132.0 m

May Day + Fire Flow (90 L/s): 116.0 m (Connection 1), 116.0 m (Connection 2), 115.7 m (Connection 3)

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

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

Kind regards,

**Amy Whelan, E.I.T**

Project Manager, Infrastructure Approvals

Development Review, Central | Examen des projets d'aménagement, Central

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

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 26642, amy.whelan@ottawa.ca

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**From:** Whelan, Amy  
**Sent:** July 09, 2024 8:28 AM  
**To:** Sam Elias <wissamelias@gmail.com>  
**Subject:** RE: Request for boundary conditions 2409 Carlsen

Hey Sam,

Apologies I sent this to the modeling group to get the boundary conditions May 24<sup>th</sup> and have not heard back. The City staff who checks the model is away until the 12<sup>th</sup>, but I have asked them to prioritize this request upon their return.

Kind regards,

**Amy Whelan, E.I.T**

Project Manager, Infrastructure Approvals

Development Review, Central | Examen des projets d'aménagement, Central

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

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 26642, amy.whelan@ottawa.ca



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**From:** Sam Elias <wissamelias@gmail.com>  
**Sent:** July 08, 2024 7:48 PM  
**To:** Whelan, Amy <amy.whelan@ottawa.ca>  
**Subject:** Re: Request for boundary conditions 2409 Carlsen

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Hi Amy

Any update on the boundary conditions for 2409 Carlsen we requested

204 BOREALIS Cresc, Ottawa, ON K1K 4V1  
wissamelias@gmail.com | T 613 762-7800  
www.eliasengineering.ca

On Fri, May 24, 2024 at 9:20 AM Whelan, Amy <amy.whelan@ottawa.ca> wrote:

Good morning Sam and Jeremy,

I wanted to make you both aware that the storm sewer on Carlsen surcharges often, I believe during the 2-year storm event. Due to this the back water valve would be engaged on a regular basis increasing the risk of failure over time. A sump pump to hydraulically disconnect the foundation drain is highly recommended to avoid basement flooding.

Kind regards,

**Amy Whelan, E.I.T**

Project Manager, Infrastructure Approvals

Development Review, Central | Examen des projets d'aménagement, Central

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

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 26642, amy.whelan@ottawa.ca

---

**From:** Whelan, Amy  
**Sent:** May 24, 2024 9:11 AM  
**To:** Sam Elias <wissamelias@gmail.com>  
**Cc:** Jeremy Silburt <jeremy@thebergehomes.com>  
**Subject:** RE: Request for boundary conditions 2409 Carlsen

Thank you Sam,

I have sent your request to water resources, please note that it may take up to 10 business days for the results.

Kind regards,

Amy

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**From:** Sam Elias <wissamelias@gmail.com>  
**Sent:** May 16, 2024 1:30 PM  
**To:** Whelan, Amy <amy.whelan@ottawa.ca>  
**Cc:** Jeremy Silburt <jeremy@thebergehomes.com>  
**Subject:** Re: Request for boundary conditions 2409 Carlsen

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Hi Amy

Please see attachment for the info requested

Sam Elias, P. Eng

204 BOREALIS Cresc, Ottawa, ON K1K 4V1

wissamelias@gmail.com | T 613 762-7800

www.eliasengineering.ca

On Wed, May 8, 2024 at 8:31 AM Whelan, Amy <amy.whelan@ottawa.ca> wrote:

Good morning Sam,

Missing a few items to process the boundary condition request please see below:

1. Fire flow calculations
2. Exposure distances plan
3. Domestic demand calculations

Kind regards,

Amy

---

**From:** Smith, Jack <jack.smith@ottawa.ca>

**Sent:** May 06, 2024 8:47 AM

**To:** Sam Elias <wissamelias@gmail.com>

**Cc:** Jeremy Silburt <jeremy@thebergehomes.com>; Whelan, Amy <amy.whelan@ottawa.ca>; Mottalib, Abdul <Abdul.Mottalib@ottawa.ca>; Renaud, Jean-Charles <Jean-Charles.Renaud@ottawa.ca>

**Subject:** RE: Request for boundary conditions 2409 Carlsen

Hi Sam,

Thanks for reaching out. I have copied Amy Whelan and Abdul Mottalib, the Infrastructure Project Managers for this file to make them aware of and assist in your request for boundary conditions.

Best,

Jack Smith

---

**From:** Sam Elias <wissamelias@gmail.com>

**Sent:** May 06, 2024 8:00 AM

**To:** Smith, Jack <jack.smith@ottawa.ca>

**Cc:** Jeremy Silburt <jeremy@thebergehomes.com>

**Subject:** Fwd: Request for boundary conditions 2409 Carlsen

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Dear Jack Smith,

We have been retained by Theberge Homes to prepare the services adequacy report for the development at 2409 Carlsen (PC2024-0017). To proceed effectively, we require detailed boundary conditions for each building within the development.

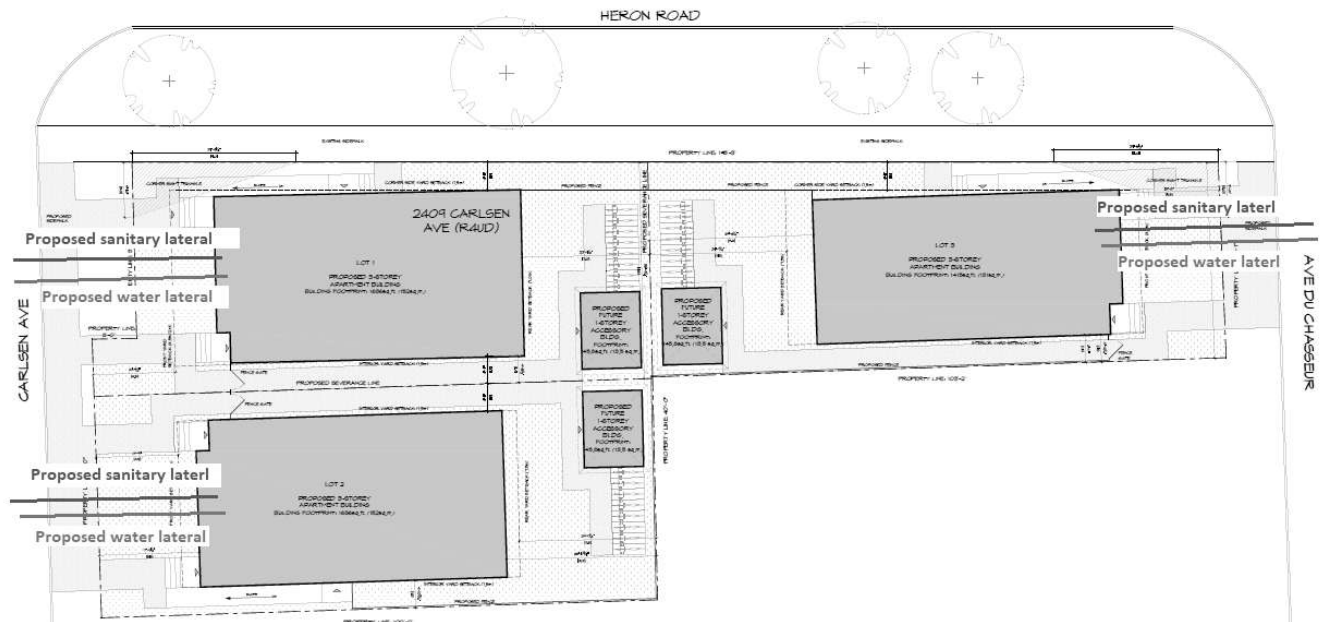
Could you please provide the necessary boundary condition information or forward this request to the appropriate staff member who can assist us? Your cooperation would be greatly appreciated

Thank you for your attention to this matter.

Address: 2409 Carlsen Avenue

proposed Development: 3- three-storey buildings

Closest Hydrant approximately 25m away from each building.



www.eliasengineering.ca

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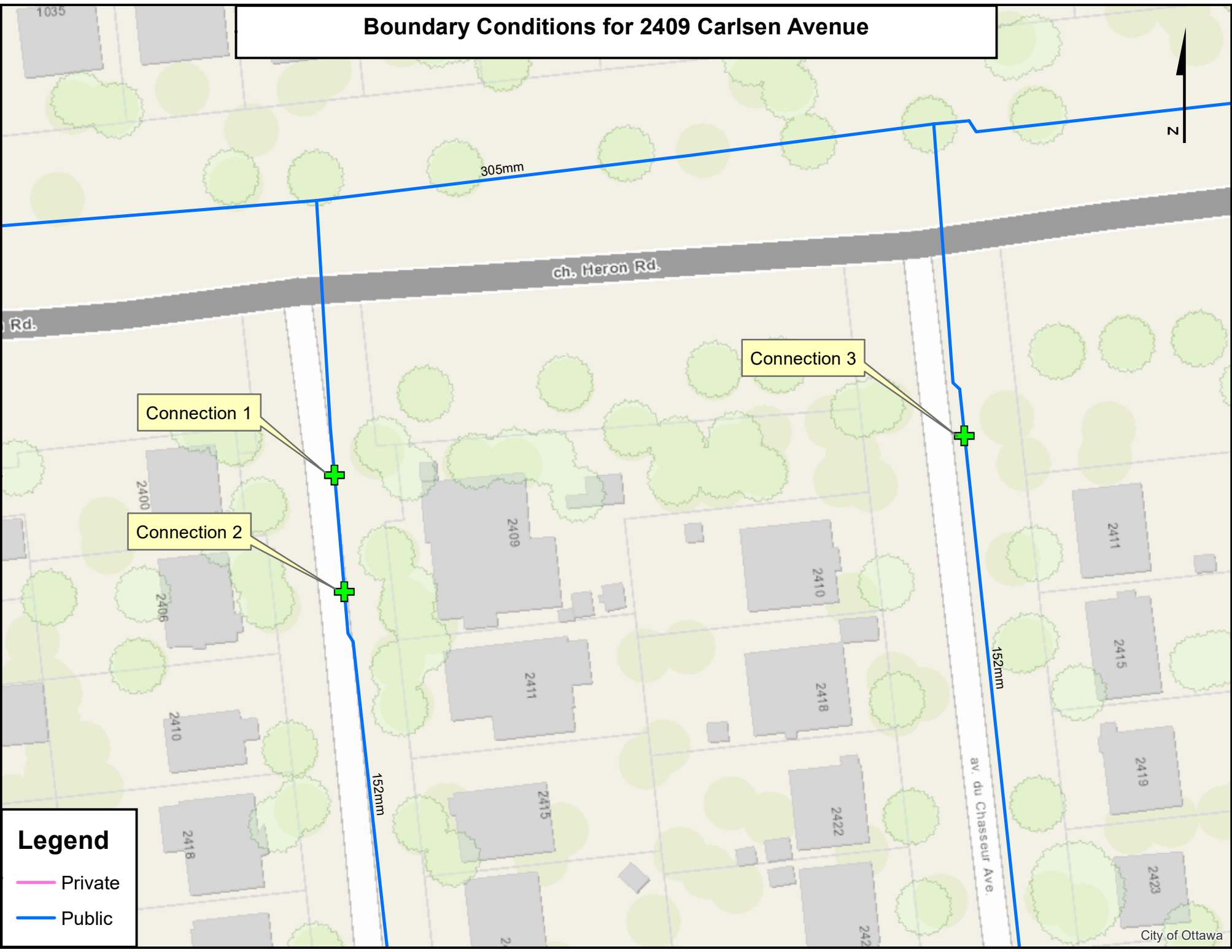
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 **2409 Carlsen Avenue July 2024.pdf**  
513K

# Boundary Conditions for 2409 Carlsen Avenue






















































**Legend**

- Private
- Public





- |   |   |   |                                |
|---|---|---|--------------------------------|
|    | SANMH   |  | PROPOSED SANITARY MANHOLE      |
|    | CBMH  |  | PROPOSED CATCHBASIN MANHOLE    |
|    | LMH   |  | LANDSCAPE MANHOLE              |
|    | CB1   |  | PROPOSED CATCHBASIN            |
|    | V&VB  |  | PROPOSED VALVE AND VALVE BOX   |
|    | FH  |  | PROPOSED FIRE HYDRANT          |
|    | WRM   |  | PROPOSED WATER REMOTE METER    |
|    | M   |  | PROPOSED WATER METER           |
|    | X   |  | PROPOSED CURB STOP             |
|    | FFL   |  | FINISHED FLOOR LEVEL ELEVATION |
|    | BFL   |  | BASEMENT FLOOR LEVEL ELEVATION |
|    | U.S.F   |  | UNDERSIDE OF THE FOOTING       |
|    | F.D   |  | FLOOR DRAIN                    |
|    | BUILDING ENTRY  |   |                                |
|    | DOWNSPOUTS LOCATION W/ SPLASH PAD   |   |                                |
|    | WATERPOST   |   |                                |
|    | GRASS AREA  |   |                                |
|    | GREEN PAVERS  |   |                                |
|   | INTERLOCK   |   |                                |
|  | PROPOSED ELEVATION  |   |                                |
|  | EXISTING ELEVATION  |   |                                |
|  | PROPOSED GRADING SLOPE BETWEEN 2-4% GRADING OVER 7% MUST BE TERRACED A MAXIMUM SLOPE OF 3H:1V |   |                                |
|  | STREET ASPHALT OVERLAY  |   |                                |
|  | CONCRETE WALK   |   |                                |
|  | BOARD FENCE   |   |                                |
|  | PROPERTY LINE   |   |                                |
|  | PROPOSED SILT FENCE   |   |                                |
|  | ROOF DRAIN RESTRICTOR TO U/S  |   |                                |
|  | 5 YEAR FLOOD  |   |                                |
|  | 10 YEAR FLOOD   |   |                                |
|  | LEVEL AREA  |   |                                |
|  | SCUPPER   |   |                                |
|  | WATER SAMPLING CHAMBER  |   |                                |
|  | SUMP PUMP FOR FOUNDATION DRAINAGE   |   |                                |
|  | WATER POST  |   |                                |
|  | EXISTING CEDAR FENCE TO REMAIN  |   |                                |
|  | NEW PRESSURE TREATED WOOD FENCE   |   |                                |
|  | NEW GLASS RAILING   |   |                                |

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES.

THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

- 9-EXISTING GAS SERVICES LOCATED AT THE PROPERTIES WILL REQUIRE TO BE RELOCATED BY ENBRIDGE CONSUMERS GAS.

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ISSUED FOR REVIEW —

DATE OF: 2024-08-13	
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