



Site Servicing Report Eagleson Road KDR Redevelopment

SHELL CANADA LIMITED

JUNE 26, 2026

225-340 MIDPARK WAY SE

CALGARY, AB

P: 403 640 0990

F: 403 259 6506

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Revision History

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Authors

Report Prepared By:	Inna Nikiforov T.T Civil Technologist CTM Design Services Ltd. Yvonne Faas, P. Eng., Project Engineer CTM Design Services Ltd.
Report Reviewed By:	Yvonne Faas, P. Eng., Project Engineer CTM Design Services Ltd.



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1 Project Information

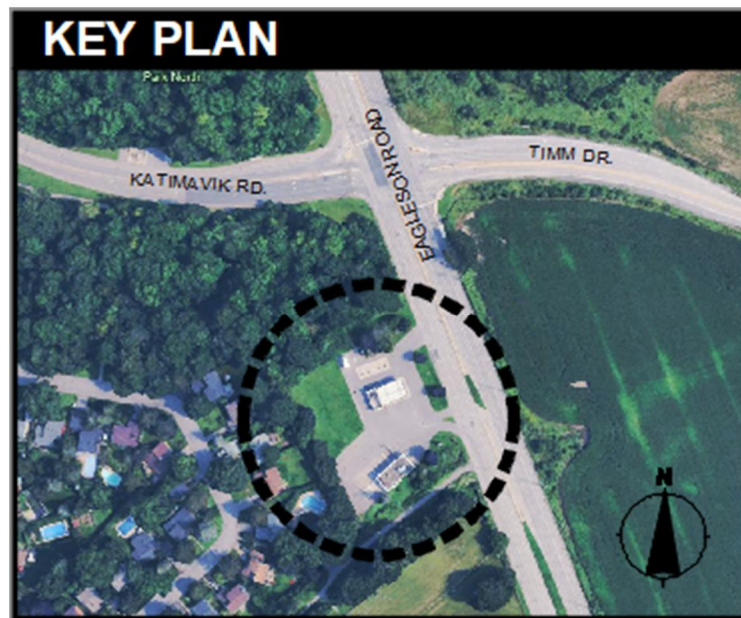
Client: Shell Canada Products
Contact: Kerry Morrison, EPCM Advisor
Project Name: Eagleson Road KDR
Description: Redevelopment (Knockdown Rebuild) Gas Bar with Canopy, C-store
Location: 106 Eagleson Road, Kanata, Ontario
Consultant: CTM Design Services Ltd.
Contact: Yvonne Faas, P.Eng. Civil Engineer

2 Introduction

CTM Design Services Ltd. (CTM) has been retained by Shell Canada Products to provide site servicing plans in support of the redevelopment of a proposed gas station and convenience store in the City of Ottawa. The property is located on the southwest corner of the intersection of Eagleson Road and intersection of Katimavik Road and Timm Drive. The site is bounded by undeveloped forested lands to the north, with Katimavik Road beyond; by Eagleson Road and agricultural lands to the east; by commercial and residential development to the south; and by residential development to the west. The address is 106 Eagleson Road, Kanata, Ontario. The location map is shown in Figure 1.

2.1 Location Map

The site is located southwest of intersection Katimavik Road and Timm Drive and Eagleson Road.



SCALE: N.T.S.

2.2 Existing Boundary Conditions & Infrastructure

The subject site is 0.70 hectare in size, zoned GM15 H(6). The site is currently occupied by one c-store and attached canopy over the gas bar which includes 4 dispensers, car wash, and a fenced in garbage enclosure. There are two commercial accesses from Eagleson Road. The existing site cover consists of paved parking and drive areas, and perimeter grassed landscaping with some mature trees.

The site currently has existing water, storm and sanitary sewer services. Using City of Ottawa GIS mapping, asbuilt drawings, survey data and utility locate reports, the existing site servicing information was pieced together. The existing site servicing is shown on the drawings provided.

During the pre-consultation meeting, the following servicing information was provided.

Water Servicing:

- a) Existing 1067 mm diameter C01 watermain located on Eagleson Road
- b) Existing 406 mm diameter watermain
- c) Existing 51 mm diameter CO TYPE K service

Sanitary Servicing:

- a) Existing 150 mm diameter AC Sanitary sewer

Storm Servicing:

- a) Existing 1200 mm diameter Conc. Storm sewer in Eagleson Road easement.
- b) Existing 250 mm diameter PVC Storm service 1
- c) Existing 250 mm diameter PVC Storm service 2

The existing services are presumed to be in good working order and well maintained.

The plan shows the servicing boundary conditions, appended to the end of this report.

2.3 Proposed Conditions

The proposed site will consist of a new C-store, a new 6-dispenser gas bar covered by a canopy, new underground tanks will be installed, new waste enclosure, and new (4) EV charging stations. The existing car wash will remain in place.

Proposed new services to the new building and new canopy are shown on the site servicing drawing provided. The existing service lines for the car wash will remain in place and in use. The existing service lines to the existing C-store and canopy will be removed or abandoned as noted.

2.4 Purpose of Report

This Site Servicing Report outlines the engineering design elements for the proposed development, including storm sewers, sanitary sewers and water servicing. This report has been prepared in support of the Site Plan Control Application (SPCA).

2.5 Supporting Drawings

This report has been prepared based on the Site Plan, Site Grading, Servicing and Stormwater Management Plans, both Existing and Proposed Conditions. The Servicing Plan shows the servicing boundary conditions, appended to the end of this report.

2.6 Supporting Reports

Referencing the Geotechnical Investigation Report, by Gemtec, July 28, 2025, groundwater depth below existing ground surface ranges from 2.7 to 3.1m. Groundwater levels will fluctuate seasonally and may be higher during wet periods of the year such as the early spring or fall, or following periods of heavy precipitation. Hydraulic response testing results in conductivity for sandy silt deposits. The groundwater quality results are presented in the report. Groundwater management during construction may experience inflow and can be controlled with sumps during excavation when required. Suitable detention and filtration will be required before discharging the water to a sewer. The rate of groundwater inflow from the overburden deposits is not expected to exceed 50,000 liters per day, as such the water takings for this project will likely not be subject to an EASR. Although to prevent potential construction delays, a provisional EASR may be considered depending on duration of excavation, trench size and to account for contingencies related to stormwater infiltration. To minimize groundwater management requirements, it is recommended that construction be undertaken during the dry period of the year (i.e. June to September).

2.7 Pipe Bedding

Referencing the Geotechnical Investigation Report, by Gemtec, July 28, 2025, the bedding for the proposed sewers and watermain should be in accordance with OPSD 802.010/802.033 for Type 3 Soil. The pipe bedding material should consist of at least 150mm of well graded crushed stone meeting OPSS for Granular A. Additional pipe bedding considerations should follow the recommendations made in the geotechnical report. Cover material, from pipe spring line to at least 300mm above the top of pipe, should consist of granular material, such as OPSS Granular A.

Follow the trench backfill recommendations from the geotechnical report.

Add insulation as recommended on the servicing drawings.

3 Water Servicing

The existing 50mm diameter water service line connection to the site will be maintained. The water meter is located in the existing carwash building. This will remain in place. The existing 25mm water service to the existing C-store will be disconnected and capped. A new proposed 50mm water service is proposed to service the new C-store. The alignment is shown on the Site Servicing plan.

3.1 Design Criteria

The water servicing design adheres to the Ottawa Water Distribution Guidelines and associated Technical Bulletins. A summary of the relevant criteria is presented below:

WATER BOUNDARY CONDITION

Average Daily Demand

Demand Type	Amount	Units
Other Commercial	28000	L/gross ha/day
Site Area	7030	sq.m
	0.703	ha
Average Daily Demand	19684	L/day

Maximum Daily Demand

Commercial	1.5 x avg. day	L/gross ha/day
Maximum Daily Demand	29526	L/day
	0.342	L/s

Maximum Hour Demand

Commercial	1.8 x avg. day	L/gross ha/day
Maximum Hour Demand	35431	L/day
	0.410	L/s

3.2 Proposed Servicing

The existing 50mm diameter CU water servicing line from the existing 406 mm diameter watermain T from the existing 1067 mm diameter C01 Watermain on Eagleson Road with will be the water supply point for the proposed commercial redevelopment. It is presumed to be in good condition.

The existing 50mm diameter water service line connection to the site will be maintained. The water meter is located in the existing carwash building. This will remain in place. The existing 25mm water service to the existing C-store will be disconnected and capped. A new proposed 50mm water service is proposed to service the new C-store. The alignment is shown on the Site Servicing plan.

3.3 Fire Flows

Based on the Fire Underwriters Survey, the following data is provided for calculating the Required Fire Flows (RFF).

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

RFF = the Required Fire Flow in liters per minute (LPM)

C = the Construction Coefficient is related to the type of construction of the building

A = the total Effective Floor Area (effective building area) in square meters of the building.

Following the procedure recommended by the FUS,

- A. C = 1.0 for Type III Ordinary Construction
- B. A = 220 sq.m
- C. $RFF = 220C\sqrt{A} = 3260$ LPM
- D. Occupancy Contents Adjustment Factor = -15% to +15% (based on E Occupancy and Limited Combustible Contents).
 - 15% = - 490 RFF = 2770 to
 - + 15% = + 490 RFF = 3750
- E. No Automatic Sprinkler Protection. Increase/Decrease = 0
- F. Exposure Adjustment Charge. Table 6: 0% + 0% = 0% Increase = 0
- G. RFF = 3750 LPM rounded to 4000 LPM

Results indicate a hydrant shall be located within 90m of the proposed building.

Reference: Water Supply for Public Fire Protection, A Guide to Recommended Practice in Canada, 2019, Fire Underwriters Survey.

There is one (1) existing fire hydrant located within 90 m of the newly proposed building entrance. The hydrant is located on the SW corner of the intersection of Eagleson Road and Katimavik Road/Timm Drive.

The next nearest hydrant is located on Eagleson Road, south of the site, adjacent to the Educational Centre. The existing car wash is within 90m of this hydrant.

4 Sanitary Servicing

The existing sanitary service line connection to the site will be maintained to the sanitary main in Inuvik Crescent. The City GIS mapping provided the existing site service size is 150 mm diameter AC line. It is presumed to be in good condition. The existing sanitary service from the car wash will remain in place in use. The existing car wash service utilizes an existing oil grit interceptor to pre-treat the wastewater leaving the car wash. The existing sanitary service from the old C-store will be removed, capped and sealed at the manhole outlets.

The proposed sanitary service is a new 150mm diameter PVC service line from the new C-store building. The sanitary sewer design sheet is in the Appendix to this report. The alignment is shown on the Site Servicing Plan.

5 Storm Service

The existing storm service line connection to the site will be maintained to the storm main in Eagleson Road. It is presumed to be in good condition. The block profiles suggest the existing site service size is 1200 mm diameter, adjacent to the access crossing from Eagleson Road. The proposed storm service is a 2 new catchbasins, 4 CBMH with new OGS manhole and new 300 mm diameter storm lines. The flow rate will be restricted and controlled with an orifice plate in proposed CBMH#4, therefore the outgoing pipe reduction is reasonable to match the existing line. Details for the stormwater management and calculations are provided in a separate report, the Stormwater Management Report. The storm sewer design table is appended to this report.

6 Summary

The proposed redevelopment of this site will tie the new water servicing to existing service already provided from Eagleson Road, as recommended in the pre-app documentation. The existing service lines to the site will be maintained in size and location, thus no disturbance to the existing adjacent roadways.

There are two existing fire hydrants well within 90m of the building opening, which meets the FUS code.

The new sanitary service will tie to the existing sanitary manhole at the back of the site which connects to the system in Inuvik Crescent. The new building service will replace the existing one, thus no increase in flows are anticipated.

The new storm service will tie to the main and the existing two storm services for this property will be capped. The single point of connection will replace the existing ones, with a new water quality treatment unit, and a new water quantity control orifice plate to reduce off-site runoff to the pre-development flow rate.

7 Appendix A: Sanitary Sewer Design Sheets

Sanitary Sewer Design Sheet (per Ottawa Sewer Design Guideline, Technical Bulletin ISTB-2018-01)

Site location (City)

106 Eagleson Rd, Kanata, ON

Date

2026-05-13

Reviewer

Yvonne Faas

A= area in hectares

F= average waste water flow (commercial) =28,000 L/Ha/day

Peak Factor: 1.5 (commercial)

I = Infiltration & Inflow Allowance = 0.33 L/s/ha

Q(d) = dry weather flow (L/s)

Q(d) = A x F (L/s)

Q(p) = peak dry weather flow (L/s)

Q(p) = Q(d) x Peak Factor (L/s)

Q(i) = extraneous flow (L/s)

Q(i) = A x I (L/s)

Q(t) = total peak design flow (L/s)

Q(t) = Q(p) + Q(i) (L/s)

Commercial Site Area (ha)	F (L/ha/day)	Q(d) (L/s)	Peak Factor	Q(p) (L/s)	I (L/s/ha)	Q(i) (L/s)	Q(t) (L/s)
0.70	28,000	0.23	1.5	0.34	0.33	0.23	0.57

Daily Sewage Flow (Per Ottawa Sewer Design Guideline, Appendix

Convenience store	(per toilet room)				
	2000 L/day		2000 L/day		
	2 toilet rooms on site		4000 L/day	0.05	L/s
Car wash			400 L/day		
	Estimated 40 cars washed per		16000 L/day	0.37	L/s
Total				0.42	L/s

Wastewater peak design flow = 0.57 L/s

SANITARY SEWER DESIGN - COMPUTATION FORM										
Project Name		Eagleson, Shell, New C-store, Ex car wash, New u/g petroleum tanks					Computed By: YF			
Job No		2025071					Date: May 2026			
							Revised Date:			
Catchment Area Design			Pipe Design							Capacity Check
Manhole		Design Flow (L/s)	Pipe Slope (%)	Nominal Pipe Diameter (mm)	Friction Coeff. (n)	Pipe Length (m)	Pipe Capacity (L/s)	Velocity (m/s)	Time of Flow (min)	Design / Cap. Ratio
U/S	D/S									
EX CAR WASH	EX OIL GRIT INTERCEPTOR	0.370	0.50%	200	0.011	3.000	27.4	0.87	0.06	0.01
EX OIL GRIT INTERCEPTOR	EX SAN MH#1 SA46503	0.370	0.52%	200	0.011	21.175	28.0	0.89	0.40	0.01
EX SAN MH#1 SA46503	EX SAN MH#2 SA46502	0.370	0.52%	200	0.011	46.200	28.0	0.89	0.87	0.01
NEW C-STORE (REPLACING EX C-STORE)	EX SAN MH#2 SA46502	0.046	1.01%	150	0.011	28.750	18.1	1.02	0.47	0.00
EX SAN MH#2 SA46502	EX SAN MH SA11548	0.574	1.00%	150	0.011	55.800	18.0	1.02	0.91	0.03



8 Appendix B: Storm Sewer Design Sheet

STORM SEWER DESIGN - COMPUTATION FORM																													
Project NameEagleson, Shell, New C-store, Ex car wash, New u/g petroleum tanks										1:5 year intensity (mm/hr)					100.90					Revised: 6/17/2026									
Job No:2025071										ST Ci					2018														
Catchment Area Design														Pipe Design								Capacity Check							
Drainage Area Label	Manhole		Drainage Area (ha)	Sum Area (ha)	Runoff Factor C	Equivalent Area (ha) A _{eq}	Cumulative Area (ha) A _c	U/S Tc (min)	D/S Tc (min)	Intensity (mm/hr)	Incremental Design Flow (L/s)	Design Flow (L/s)	Restricted Flow (L/s)	Pipe Slope (%)	Nominal Pipe Diameter (mm)	Pipe Material	Friction Coeff. (n)	Pipe Length (m)	Pipe Capacity (L/s)	Velocity (m/s)	Time of Flow (min)	Design / Cap Ratio	Pipe OK or SURCHARGED						
	U/S	D/S																											
B1	EX CB#1 & 2 XR	PR CBMH#1	0.1754	0.1754	0.78	0.136	0.136	10.00	10.85	100.90	38.3	38.3	38.3	0.350%	300	PVC	0.011	48.897	67.6	0.96	0.85	0.57	OK						
B6	EX CB#3	PR CBMH#4	0.0797	0.0797	0.83	0.066	0.066	10.00	10.40	100.90	18.6	18.6	18.6	1.000%	200	PVC	0.011	29.307	38.8	1.23	0.40	0.48	OK						
B2	PR CB#2	PR CBMH#1	0.0533	0.0533	0.90	0.048	0.048	10.00	10.27	100.90	13.5	13.5	13.5	0.370%	300	PVC	0.011	16.149	69.5	0.98	0.27	0.19	OK						
B3	PR CBMH#1	PR CBMH#2	0.0558	0.2845	0.98	0.055	0.239	10.27	10.48	99.54	15.1	66.1	66.1	0.400%	300	PVC	0.011	12.501	72.3	1.02	0.20	0.91	OK						
B4	PR CBMH#2	PR CBMH#3	0.0407	0.3252	0.95	0.039	0.278	10.48	10.80	98.55	10.6	76.1	76.1	0.370%	300	PVC	0.011	19.081	69.5	0.98	0.32	1.09	SURCHARGED						
B5	PR CBMH#3	PR CBMH#4	0.0708	0.3960	0.76	0.054	0.332	10.80	10.96	97.02	14.5	89.4	89.4	0.410%	300	PVC	0.011	9.694	73.2	1.04	0.16	1.22	SURCHARGED						
	PR CBMH#4	PR OGS	0.0000	0.4757	0.84	0.000	0.398	10.96	10.99	96.29	0.0	106.6	36.2	1.250%	200	PVC	0.011	2.400	43.3	1.38	0.03	0.83	OK						
	PR OGS	PR TMH	0.0000	0.4757	0.84	0.000	0.398	10.99	11.01	96.16	0.0	106.4	36.2	1.250%	200	PVC	0.011	1.600	43.3	1.38	0.02	0.83	OK						
	PR TMH	T-MAIN	0.0000	0.4757	0.84	0.000	0.398	11.01	11.07	96.07	0.0	106.3	36.2	1.200%	200	PVC	0.011	4.977	42.5	1.35	0.06	0.85	OK						

9 Appendix C: Servicing Plan – Boundary Conditions

