Servicing Report

239 Dundas Street West, Belleville, ON

March 2026

WSE CONSULTING INC.

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1.0 INTRODUCTION

WSE Consulting was retained to complete a serving evaluation to be included with the application for site plan approval for a proposed multi-unit residential development located at 239 Dundas St. West in Belleville. The purpose of the report is to summarize the servicing requirements for the proposed development. The following services have been considered in this report.

- Water
- Sanitary
- Traffic
- Private Utilities

Note: stormwater has been reviewed under separate cover.

2.0 SITE DESCRIPTION

2.1 Existing Conditions

The parcel of land is approximately 0.37 hectares (ha), and is bounded to the east by existing residential and west by parkland, the north by Dundas St. and to the south by CP rail. A storm drainage outlet and ditch exists along the west property line currently receiving all site drainage.

The property currently has a single family dwelling on it. A site location plan is attached to this report as **Figure 1.**

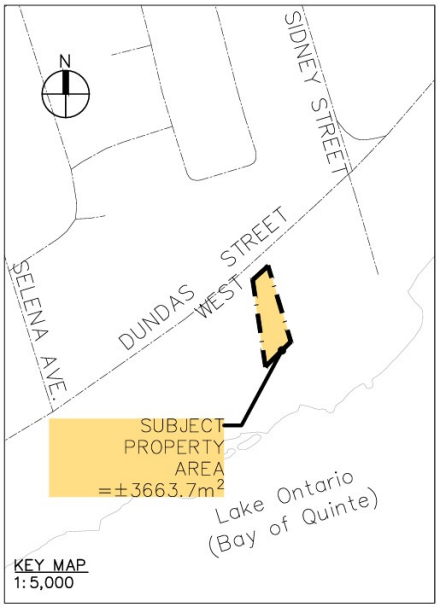

Figure 1 – Site Location

2.2 Proposed Conditions

The property is proposed to be developed with a single multi-unit apartment building consistent of the following thirty-seven (37) units as shown in the concept plan below as **Figure 2.**

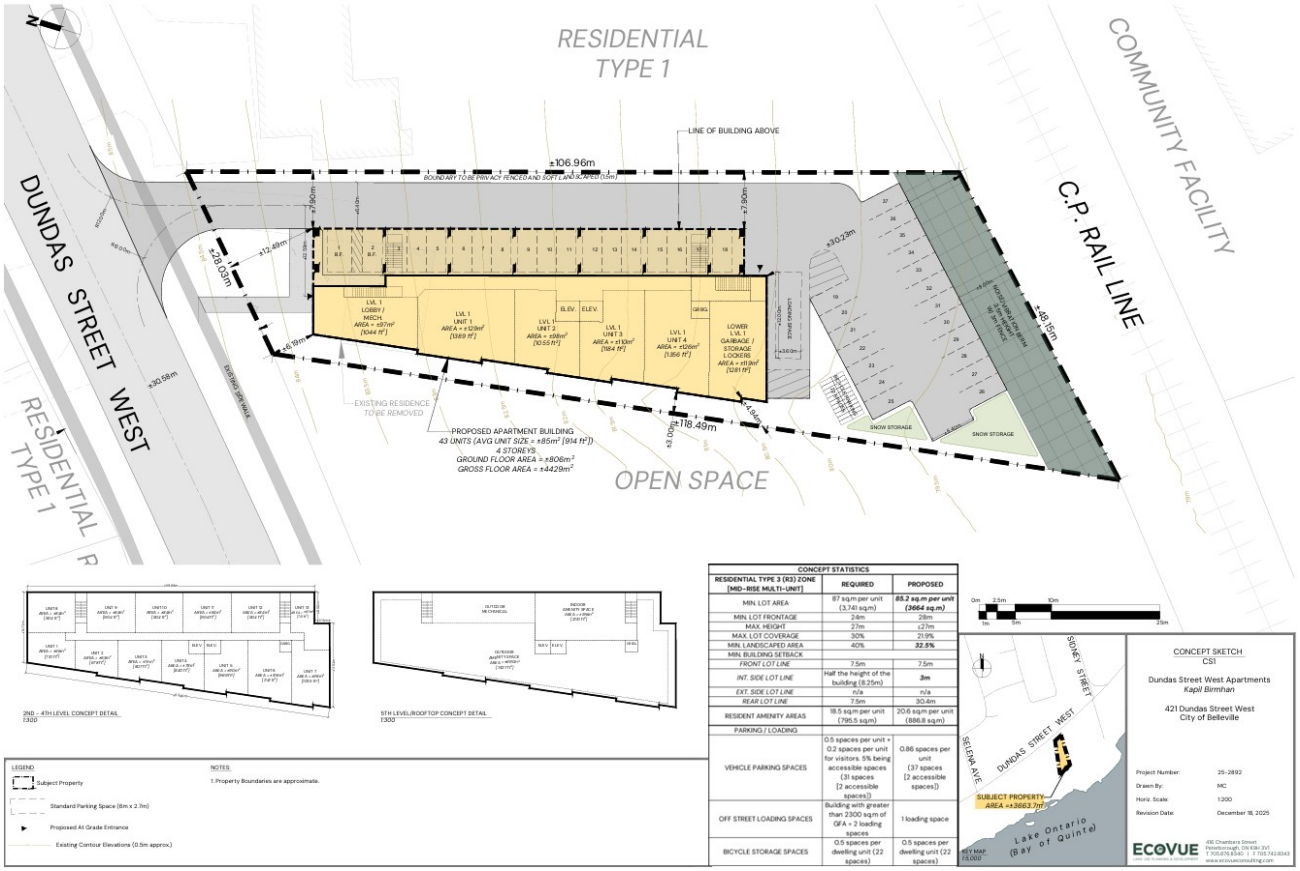

Figure 2 – Proposed Plan

2.3 Existing Services

The property currently has an existing water and sanitary service to the property line that services the single family residential. These services are proposed to be removed and replaced with new services as outlined in the following sections.

3.0 WATER SERVICE

This review has been prepared with consideration of the following documents and guidelines;

- Form 1 – Record of Watermains Authorized as a Future Alteration,
- Ministry of the Environment publication ‘Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012’,
- Ministry of the Environment publication ‘Design Guidelines for Drinking Water Systems,

2008',
- Fire Underwriters Survey 'Water Supply for Public Protection (2020)',
- The Ontario Building Code, and
- The City of Belleville Engineering Design Standards

3.1 Domestic Water Demand

An evaluation of the anticipated water demand has been prepared using the guidelines set out in the Ministry of the Environment publication 'Design Guidelines for Drinking Water Systems, 2008'.

Based on the proposed 37 unit count the anticipated demands are;
- Average Day – 0.37 l/s,
- Maximum Day – 1.03 l/s,
- Minimum Hour – 0.15 l/s,
- Peak Hour – 1.55 l/s.

Supporting calculations included in **Appendix A**.

3.2 Service Size

A hydraulic load review based on OBC 7.6.3.2.A, see below chart, and concluded a total hydraulic load of 288.6 for the entire building. Based on extrapolating OBC 7.6.3.4 the required water service size is 5".

It is proposed to install a 6" to permit a fire connection.

	Residential unit			
Item	Description	Qty	Load	Total
1	Bathroom (3pc)	37	3.6	133.2
8	Washer (clothes)	37	1.4	51.8
28	Kitchen (sink)	37	1.4	51.8
14	Kitchen (dishwasher)	37	1.4	51.8
			Total	**288.6**

Table 1 - Water Demand

3.2 Fire Flow

Fire flow requirements have been evaluated based on the Fire Underwriters Survey 'Water Supply for Public Protection (2020)'.

For conservatism the following has not been considered.
- No fire breaks between units
- assumed wood construction
- No sprinkler system

The resulting Maximum Day + Fire Flow requirement is 185.20 l/s. Supporting calculations included in **Appendix A.**

A fire hydrant test was not available at the time of drafting this report. Water pressure and flow is not expected to be a concern based on local knowledge of the system. A test will be completed and an updated report provided as part of site plan approval.

4.0 SANITARY SERVICE

Applying MOE standards it has been estimated that the site will generate approximatley 1.8L/s and a 200mm pipe is adeqaute to convey the flow, calculations included in **Appendix A**.

5.0 PRIVATE UTILITIES

The site has access to all necessary private utilities within the frontage on Dundas St. W.

During construction connections for Elexicon, Gas, Bell, and Cogeco will be coordinated to ensure any works can be completed with site servicing and restored as a single operation.

6.0 TRAFFIC REVIEW

Existing Conditions

The subject property fronts Dundas St. W and has an existing driveway at the eastern limits for the single family home.

Through the site area, Dundas St. W is a 4-lane road providing two travel lanes in each direction. The road has a urban cross-section with curb. The alignment is relatively straight, and the posted speed limit is 50 km/h. Thus, a design speed of 60 km/h applies.

Proposed Road Access

A new 6.4m wide access plus filleting to mediate the skew between Dundas Street and the proposed access near the eastern limits of the site to permit both ingress and egress movements.

An internal laneway system and parking will be provided for the residents and there will be no commercial or community facilities.

Sightline Review

For a design speed of 60km/hr, the minimum stopping sight distance is 85m (Table 2.5.2 TAC) and the minimum decision sight distance is 95m (Table 2.5.6 TAC).

The sight lines for the site are well above 200m in each direction. As such the sightlines are acceptable.

Based on the above evaluation the proposed development will not have any impact on traffic movement.

7.0 CONCLUSIONS

- The development will be serviced by municipal water and sanitary services
- Adequate fire flow is available within the municipal system
- There are no traffic improvements required to support the development
- Private utilities will be installed during construction.

We trust the above information meets your needs at this time and should you have any further questions or concerns, please do not hesitate to contact our office.

Sincerely,
WSE Consulting Inc.

Adam Wilson, P. Eng.
Senior Engineer

APPENDIX A

Calculations

Evaluation of Water Demand

Population

#units	37	
pop/unit	2.5	assumed avg
# people	92.5	

Average Day Flow

L/cap*d	350	assumed
ADF	32375	l/d
	0.37	l/s

Maximum Day Flow

factor	2.75	MOE Table 3.1
L/cap*d	350	
MDF	89031.25	l/d
	1.03	l/s

Minimum Hour

factor	0.4	MOE Table 3.1
ADF	0.37	l/d
	0.15	l/s

Peak Hour

factor	4.13	MOE Table 3.1
ADF	0.37	l/d
	1.55	l/s

Fire Flow

*Water Supply for Public Fire protection - Guide for Determination of Reguired Fire flow - Fire Underwriters Survey (2020)

Step

A	Construction type	Wood Frame				
B	Floor Area	4429				
	Height	4 + roof				
			C	1.5		
			A	4429		
C	F=220CsqrtA		F	21961.74	l/min	22000 l/min
	Hazard Adjustment	low (-15%)		-3300.00	l/min	-3300.00 l/min
D		adjusted				18700.00 l/min
E	Sprinkler Adjustment					0 l/min
F	Exposure Adjustment***	30%		-6545.00	l/min	-6545.00 l/min
G	Total					12155.00 l/min
						202.58 l/s

**** 30%*

North = 0%

East = 15%

West = 15%

South = 0%

Max Day + Fire Flow **203.61** l/s

SANITARY SEWER DESIGN SHEET

WSE

239 Dundas St. W

Project: 095
Revised: Mar 6 26
Checked: AJW

RATIONAL METHOD Qt = Qp + Qi
Where: Qp = peak population flow (L/s)
= PqM / 86.4 (L/s)
where M = Harmon's Peak Factor
Qi = peak extraneous flow (L/s)
= i * A (L/s)

HARMON FORMULA
$M = 1 + \frac{14}{4 + P^{1/2}}$
where P population in 1000's

Residential Population : 3.00 Persons/unit
AND: 2.50 Persons/unit
Design Flow Rates
Residential (q) : 350 Lpcd
Extraneous (i) : 0.28 L/s/ha
N-value = 0.013

LOCATION			DESIGN FLOWS									SEWER DATA						
			INDIVIDUAL			ACCUMULATIVE		PEAKING	FLOWS			PIPE DIAMETER						Q/
STREET	FROM MH	TO MH	# of UNITS	POP (persons)	AREA (ha)	POP (persons)	AREA (ha)	FACTOR (M)	RES Qp (L/s)	EXTRAN Qi (L/s)	TOTAL Qt (L/s)	NOMINAL (mm)	INNER (mm)	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	Qcap
Units			37.0	92.5	0.37	92.5	0.4	4.25	1.6	0.1	1.7	200	203.2	1.00	27.00	34.2	1.06	0.05