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4 Elm Street, Collingwood

FUNCTIONAL SERVICING BRIEF

Gillian Anderson

Document Control

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Issue	Date	Description
1	October 21, 2025	First Submission

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1 Introduction

Tatham Engineering Limited (Tatham) has been retained by Gillian Anderson to prepare a Functional Servicing Brief in support of the proposed residential development located at 4 Elm Street in the Town of Collingwood. This report outlines the proposed servicing strategy with respect to the following:

- Domestic water supply;
- Fire flow (FUS Method); and
- sanitary sewage collection.

1.1 EXISTING SITE DESCRIPTION

The municipal address of the subject property is 4 Elm Street. The property is currently zoned as C3 (Resort Commercial). The site is the subject of a zoning bylaw amendment application to change the zoning to R2 (Residential Second Density). The area of the site is approximately 0.08 ha with an existing single two-storey dwelling.

The existing site is relatively flat, gently sloping away from the center of the lot to the north and south. The site is bound by the Harbourview Trail to the south, a neighboring lot with a single dwelling to the north and Elm Street to the east.

The site is surrounded by a C4 (Mixed-Use Commercial) zoned property to the south and C3 (Resort Commercial) zoned properties to the north and west. The subject property location is illustrated on the Site Location Plan enclosed (Figure 1).

1.2 PROPOSED DEVELOPMENT

The proposed development consists of two buildings, each containing a ground-floor and second-floor residential unit, connected by a shared common area. Together, these elements form a single residential structure accommodating a total of four dwelling units, one principal unit and three accessory residential units (ARUs).

Each unit will have a floor area of approximately 85.84 m² (924 ft²) and will include two bedrooms, one bathroom, a kitchen, a combined living and dining area, and a dedicated storage room. The ground-floor units will each feature a private patio, while the second-floor units will each include a balcony.

The connecting common area, with a total floor area of 25.55 m² (275 ft²), will provide interior access to the upper units via enclosed stairs, offering protection and comfort from weather



conditions. This space will also accommodate shared laundry facilities and a common storage area suitable for bicycle storage.

The development will also include a paved parking area providing 4 parking spaces, and open landscaped area. The proposed site plan prepared by Westsmith Design is included in Appendix A.

1.3 OBJECTIVES

The primary objective of this Functional Servicing Brief is to outline the servicing strategy for the proposed development and to confirm adherence to the relevant design standards.

1.4 REFERENCES AND STANDARDS

The following references and standards were used in preparation for this report:

- Development Standards, Town of Collingwood (July 2007), amended August 5, 2022;
- Fire Underwriters Survey (FUS), Water Supply for Public Fire Protection, 2020; and
- Ontario Building Code (2024).



2 Water Supply

2.1 WATER DEMAND

Based on the Ontario Building Code (2024), MECP Design Guidelines for Drinking Water Systems (2008), and the Town of Collingwood Development Standards (2022), the following criteria were used to determine the demands generated by the proposed development:

- Average Daily Demand - 260 L/capita/day (Residential);
- Apartment - 1.9 people/unit;
- Maximum Day Peaking Factor - 1.77; and
- Peak Hour Demand Factor - 2.70.

Fire flow for the proposed development was determined using the Fire Underwriters Survey (2020) guideline. Table 1 summarizes the expected water demands and detailed calculations are provided in Appendix B.

Table 1: Water Demands

WATER DEMANDS	
Average Daily Demand	1.98 m ³ /day
Max Daily Demand	3.50 m ³ /day
Peak Hour Demand	0.06 L/s
Fire Flow (FUS)	117 L/s
Max Day + Fire Flow	117.04 L/s

2.2 SERVICING STRATEGY

The proposed development will be serviced by a new 50 mm diameter water service connection to the existing 150 mm diameter watermain within the Elm Street ROW. Ontario Building Code demand and service sizing calculations are included in Appendix B. The proposed water service connection is shown on Drawing SS.1 provided in Appendix C.

The Town of Collingwood will only allow one service for the lot, however, as discussed during pre-consultation, the proposed water service can be split internally within the building to service each unit separately, with separate meters.



Fire protection for the proposed development will be provided by existing fire hydrants located at the northeast and southeast corners of the property. 45 m hydrant radii are shown on Drawing SS.1 provided in Appendix C to show adequate coverage.



3 Sanitary Sewage Collection

3.1 SANITARY SEWAGE FLOWS

Based on Town of Collingwood Development Standards, the following criteria were used to determine the demands generated by the proposed development:

- Water Closet Flow – 260 L/capita/day (Residential);
- Maximum Day Peaking Factor – 1.77;
- Harmon Peaking Factor – 4.13; and
- Extraneous Flow – 0.23 L/s/ha.

Table 2 summarizes the expected peak sanitary sewage flows from the proposed development. Detailed calculations are included in Appendix D.

Table 2: Sanitary Sewage Flows

DESCRIPTION	FLOW RATE
Average Day Flow	1.98 m ³ /day
Infiltration	0.02 L/s
Peak Flow	0.12 L/s

3.2 SERVICING STRATEGY

The proposed development will be serviced by an existing 125 mm diameter sanitary service connection to the existing 250 mm diameter sanitary sewer within the Elm Street ROW. An Ontario Building Code watermain demand and service sizing calculations are included in Appendix D. The proposed sanitary sewer connection is shown on Drawing SS-1 included in Appendix C.

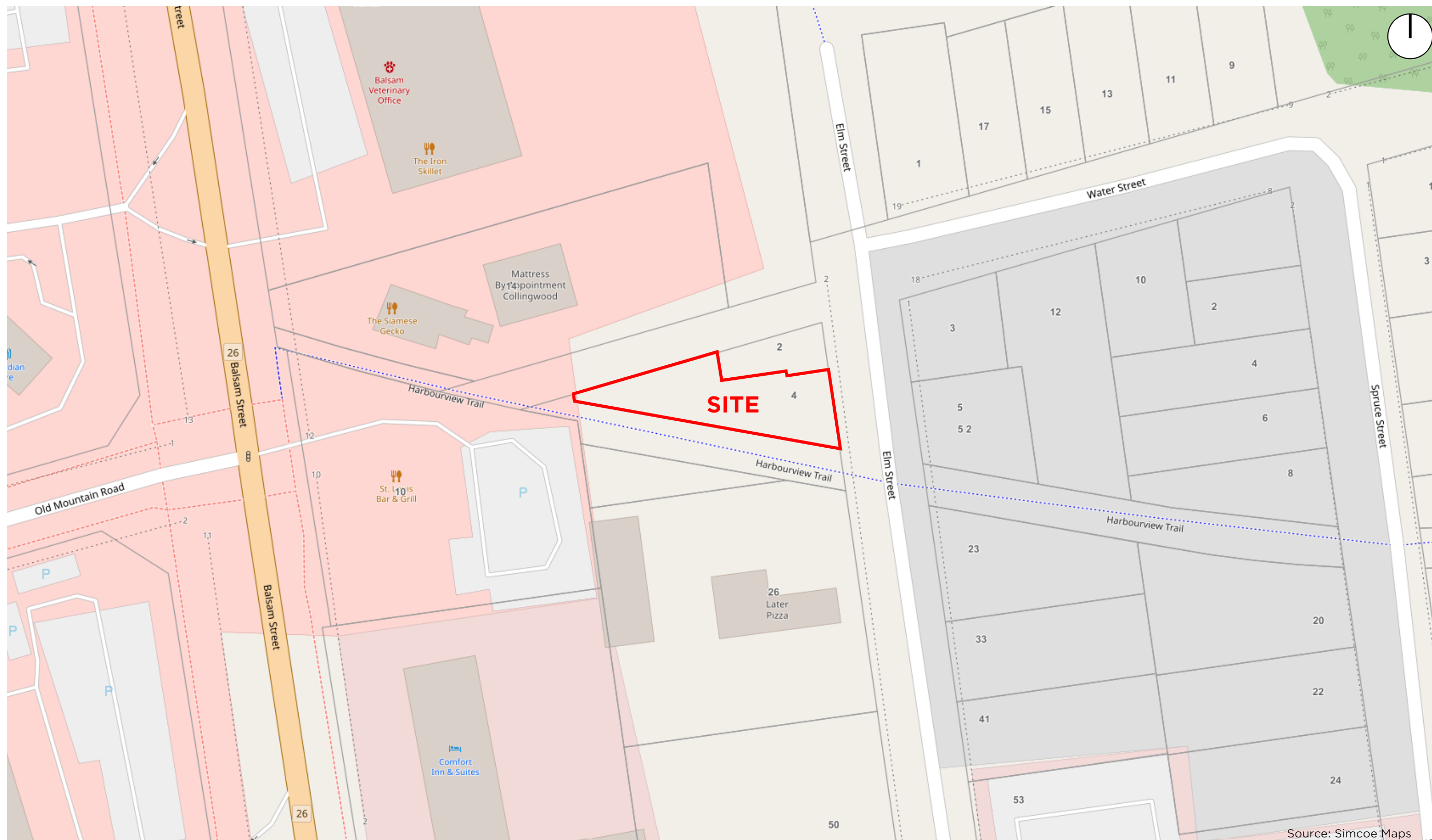


4 Summary

The functional servicing brief confirms that adequate servicing exists for the proposed residential development. The following is a summary of the findings presented in the Functional Servicing Brief:

- A new 50 mm diameter water service connection to the existing 150 mm diameter watermain in the Elm Street ROW is proposed;
- Fire suppression will be provided by two existing hydrants located at the front corners of the property; and
- An existing 125 mm diameter sanitary service will be utilized to collect wastewater flows from the development. The service will connect to the existing 250 mm sanitary sewer in the Elm Street ROW.





4 Elm Street, Collingwood

Figure 1: Site Location Plan



Appendix A: Site Plan

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PART OF LOT 1 & 2
WEST SIDE OF ELM STREET
REGISTERED PLAN 73
TOWN OF COLLINGWOOD
COUNTY OF SIMCOE

AREA = 833.51 m² = 0.083 ha

WESTSMITH
DESIGN 
www.westsmithdesign.com

DRAWINGS MUST BE SIGNED AND DATED IN ORDER TO BE ISSUED
FOR BUILDING PERMIT OR CONSTRUCTION

2313

Drawn By	DES	Designed By	DES
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1:100 (metric)	Date
	JUL 18 202

Drawing Number

A102

Appendix B: Water Demands

Water Demand Calculations

Project Details

4 Elm Street	122110-2
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Municipality

Collingwood

Prepared By

KRL	September 18, 2025
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Checked By

AO	September 18, 2025
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Residential Demands

Unit Type	Single Family	Semi Detached	Townhouse	Apartment	Total
No. Units				4	4
Population Density (cap/unit)				1.9	-
Average Demand (L/day/cap)				260	-
Average Day Demand (m ³ /day)	0.00	0.00	0.00	1.976	1.98

Commercial/Industrial/ Institutional Demands

Land Use	Commercial	Industrial	Institutional	Total
Area (ha)				0
Average Demand (m ³ /day/ha)				-
Average Day Demand (m ³ /day)	0.00	0.00	0.00	0.00

Fire Demand

Maximum Required Fire Demand (L/s)	117
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Reference: Fire Underwriters Survey (FUS)(2020)

Peaking Factors

Peaking Factors	Residential	Commercial	Industrial	Institutional
Maximum Day	1.77			
Peak Hour	2.7			

Total Design Flows

Maximum Day Demand (m ³ /day)	3.50
Peak Hour Demand (L/s)	0.06
Maximum Day Plus Fire Demand (L/s)	117.04

References

Development Standards, Town of Collingwood (July 2007), amended August 5, 2022.

Project Details

4 Elm Street, Collingwood	122110-2
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Prepared By

KRL	September 18, 2025
-----	--------------------

Municipality

Town of Collingwood

Checked By

AO	September 18, 2025
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Fire Underwriters Survey Fire Flow Calculations

Calculation Based on 2020 Publication "Water Supply for Public Fire Protection" by Fire Underwriters Survey (FUS).

Calculations

Step	Description	Term	Options	Multiplier Associated with Option	Choose	Value used	Unit	Total Fire Flow (L/min)
1	Frame Use for Construction of Unit	Framing Material						
		Coefficient related to type of construction (C)	Type V - Wood Frame Construction	1.5	Type V - Wood Frame Construction	1.5	%	N/A
			Type IVA - Mass Timber Construction	0.8				
			Type IVB - Mass Timber Construction	0.9				
			Type IVC - Mass Timber Construction	1.0				
			Type IVD - Mass Timber Construction	1.5				
			Ordinary Construction	1.0				
			Non-combustible Construction	0.8				
			Fire Resistive Construction	0.6				

2	Total Effective Area	Largest Floor Area				198	m ²	N/A	
		Percentage of the Total Area of the Other Floors for Coefficient 1.0 to 1.5			100%	198			
		Percentage of the Total Area of the Other Floors for Coefficient below 1.0:							
		a) If any vertical opening in the building are unprotected, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight.			50%				
		b) If all vertical openings and exterior vertical communications are properly protected in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.			25%				
		Total Effective Area				396			
3	Required Fire Flow without Reductions or Increases	Required Fire Flows without Reductions or Increases per FUS): (RFF= 220 x C x A ^{0.5})						7,000	
4	Factors Affecting Burning	Reductions / Increases Due to Factors Affecting Burning							
4.1	Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	%	(1,050)	5,950
			Limited combustible	-0.15					
			Combustible	0.00					
			Free burning	0.15					
			Rapid burning	0.25					
4.2	Reduction Due to Presence of Sprinklers	Sprinkler reduction	For a fully supervised system the conditions a), b) and c) below must be met.			0	%	-	5,950
			a) Automatic sprinkler protection designed and installed in accordance with NFPA 13	-0.3	No				
			b) Water supply is standard for both the system and the Fire Department hose lines	-0.1	No				
			c) Fully supervised system	-0.1	No				
			None	0.0	No				

4.3	Separation Distance Between Units (Use 10% for 2 hour Fire Separation between adjacent units)	Exposure distance between units	North Side	0 to 3.0 m	0.20	0.2	%	1,190	7,140	
			East Side	20.1 to 30.0 m	0.00					
			South Side	Greater than 30.0 m	0.00					
			West Side	Greater than 30.0 m	0.00					
4.4	Combustibility of Wood Shingle or Shake Roof Material	Surcharge for potential to spread fire	Non-combustible roofing material	0	Non-combustible roofing material	0	L/min	0	7,140	
			Low risk of fire spread	2000						
			Moderate risk of fire spread	3000						
			High risk of fire spread	4000						
Total Required Fire Flow, rounded to nearest 1000 L/min, with max/min limits applied								7000		
5	Required Fire Flow, Duration and Volume	Total Required Fire Flow (above) in L/s							117	
		Required Duration of Fire Flow of					7,000	L/min (hrs)	2	
		Required volume for Fire Flow of					7,000	L/min (m ³)	840	

OBC Water Flow + Capacity

Project Details

4 Elm Street, Collingwood 122110

Municipality

Town of Collingwood

Prepared By

KRL September 23, 2025

Checked By

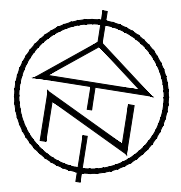
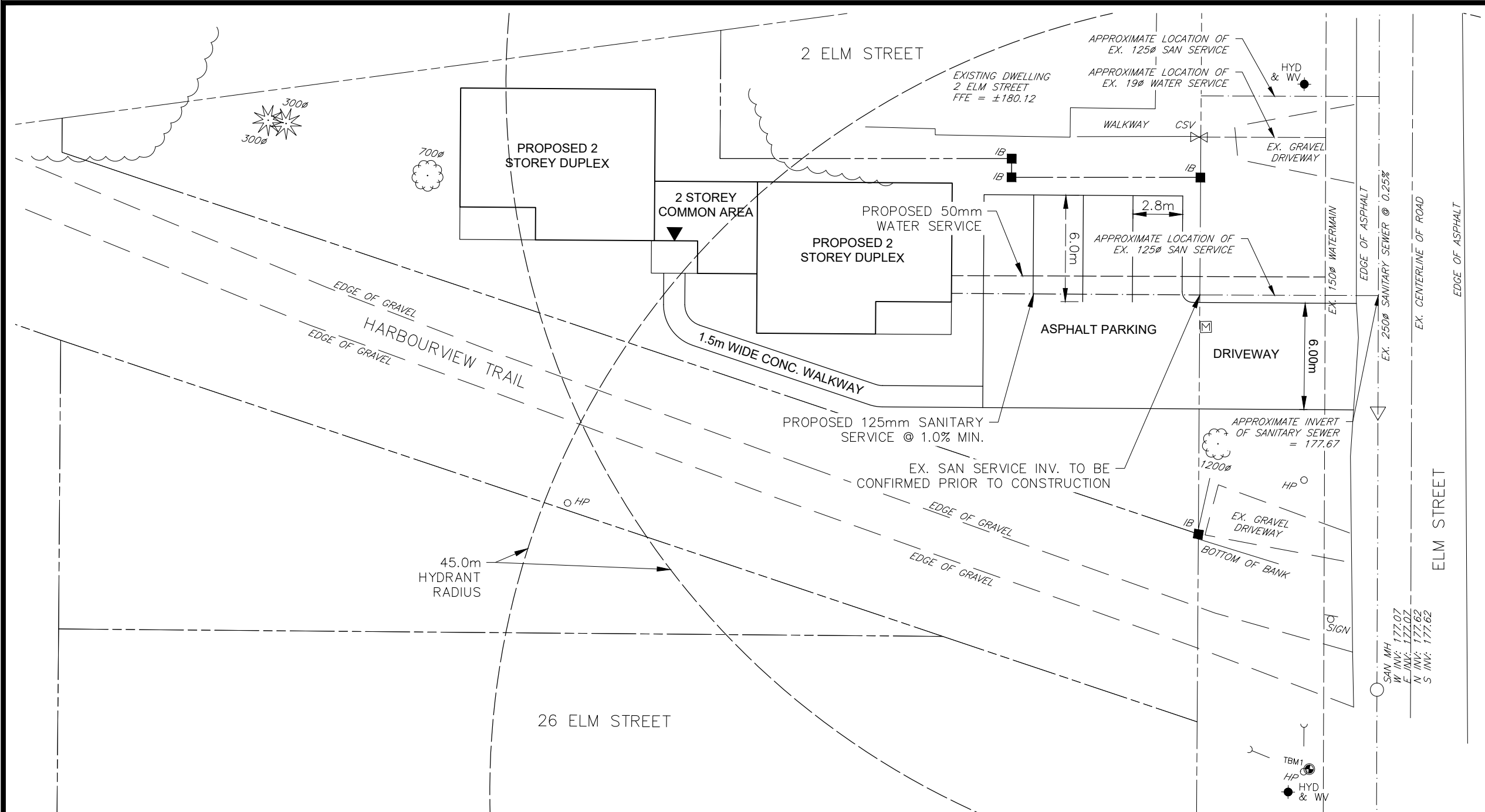
AO September 23, 2025

Fixture Type	FU / Fixture	No. Fixtures	Total Fixture Units
3 piece bathroom (toilet, sink & shower / bathtub)	6.0	4	24.0
Sinks - single, double or 2 single with a common trap	1.4	4	5.6
Dishwasher - not connected to sink drain	1.4	4	5.6
Domestic clothes washer (with 2" trap)	1.4	1	1.4
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Total Fixture Units			36.6

Calculations based on hydraulic loads per fixture from OBC Table 7.6.3.2.-A

Water Service Size (mm) = 50 (SS.1 Drawing Completed by Tatham Engineering Limited, dated September 2025)
 Pressure (psi) = 67
 Water Service Length (m) = 21 (SS.1 Drawing Completed by Tatham Engineering Limited, dated September 2025)
 Maximum Fixture Units Served = 359 (Table A-7.6.3.1. Ontario Building Code, 2024)

Appendix C: Site Servicing Plan



- NOTES**
- 1. ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SHOWN.
 - 2. ELEVATIONS AND SOIL/GROUNDWATER CONDITIONS TO BE CONFIRMED BY THE CONTRACTOR/OWNER PRIOR TO CONSTRUCTION
 - 3. REINSTATE ALL DISTURBED AREAS WITH MINIMUM 100mm TOPSOIL AND SEED.
 - 4. A COPY OF THE "ACCEPTED FOR CONSTRUCTION" SITE DEVELOPMENT PLAN IS TO BE ON SITE FOR REFERENCE AT ALL TIMES DURING CONSTRUCTION.
 - L. SITE PLAN COMPLETED BY WESTSMITH DESIGN, DATED JULY 18, 2023.

LEGEND

PROPERTY LINE

PROPOSED DOOR ACCESS

EXISTING CABLE BOX

EXISTING BELL BOX

BENCHMARKS

TBM1 – ELEVATION 180.34
TOP NUT ON HYDRO POLE AT SOUTHEAST CORNER OF LOT

CONTRACT DRAWINGS

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

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	4 ELM STREET TOWN OF COLLINGWOOD SITE SERVICING PLAN			DWG. No. SS.1
	SCALE: 1:250	DRAWN: KRL	DATE: OCT 2025	JOB NO. 122110

Appendix D: Wastewater Demands

Wastewater Generation Calculations

Project Details

4 Elm Street	122093
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Municipality

Town of Collingwood

Prepared By

KRL	Sep. 18, 2024
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Checked By

AO	Sep. 18, 2024
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Residential Flow

Unit Type	Single Family	Semi Detached	Townhouse	Apartment	Total
No. Units				4	4
Population Density (cap/unit)				1.9	-
Average Demand (L/day/cap)				260	-
Average Day Demand (m ³ /day)	0.00	0.00	0.00	1.976	1.98

Commercial/Industrial/ Institutional Flow

Land Use	Commercial	Industrial	Institutional	Total
Area (ha)				0.00
Average Demand (m ³ /day/ha)				-
Average Day Flow (m ³ /day)	0.00	0.00	0.00	0.00

Peaking Factors

Land Use	Residential (Harmon)	Commercial	Industrial	Institutional
Peaking Factor	4.43			

Infiltration Flow

Serviced Area (ha)	Infiltration Flow (L/s/ha)	Infiltration Flow (L/s)
0.08	0.23	0.02

Total Design Flows

Average Day Flow (m ³ /day)	1.98
Peak Flow (L/s)	0.12

References/Notes

Wastewater generation rate and peaking factor per Development Standards, Town of Collingwood (July 2007), amended August 5, 2022.

Version Date:	September 12, 2025
Version Number:	1

Engineer Stamp

O:\Collingwood\2022 Projects\122110 - 4 Elm Street, Collingwood\Design\Sanitary\Sewer Design Sheet

OBC Sanitary Flow + Capacity

Project Details

4 Elm Street, Collingwood 122110

Municipality

Town of Collingwood

Prepared By

KRL September 23, 2025

Checked By

AO September 23, 2025

Fixture Type	FU / Fixture	No. Fixtures	Total Fixture Units
3 piece bathroom (toilet, sink & shower / bathtub)	6.0	4	24.0
Sinks - single, double or 2 single with a common trap	1.5	4	6.0
Dishwasher - not connected to sink drain	1.0	4	4.0
Domestic clothes washer (with 2" trap)	1.5	1	1.5
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---	---		---
---	---		---
Total Fixture Units			35.5

Calculations based on hydraulic loads per fixture from OBC Table 7.4.9.3.

Nominal Pipe Size (mm) = 125 (SS.1 Drawing Completed by Tatham Engineering Limited, dated September 2025)
Slope (%) = 1 (SS.1 Drawing Completed by Tatham Engineering Limited, dated September 2025)
Maximum Hydraulic Load (Fixture Units) = 390 (Table 7.4.10.6.-C Ontario Building Code, 2024)