

Memo

File
120174Recipient
Stuart West
Jay BeechCompany
Town of Collingwood
Georgian CommunitiesDate
June
15, 2022Purpose
Victoria Annex, Collingwood
Functional Servicing Report Amendment

Sections of the Functional Servicing Report prepared by Tatham Engineering, dated April 7, 2021 shall be replaced with the following:

2.3.1 Land Uses

The proposed development will consist of a total of 19 residential units as follows:

- 4 detached residential units fronting the surrounding streets (1 to Fifth Street, 2 to Maple Street and 1 to Sixth Street);
- 10 semi-detached residential units fronting the surrounding streets (2 to Fifth Street, 6 to Maple Street and 2 to Sixth Street); and
- 5 condominium units.

Of the 4 detached units, 2 will have detached garages and 2 will have attached garages. The building and garage areas will be approximately 255 m² and 30 m² respectively in size. All of the semi-detached units will have attached garages. The combined building and garage area of these units is approximately 242 m². As noted, all of the detached and semi-detached units will front directly onto the boundary roads.


The existing 235 m² two-storey school building will be converted into 2 dwelling units, accompanied by a 72 m² carport immediately adjacent to the east. A second 495 m² condominium building, referred to as the Coach House, will be constructed southeast of the Annex and will contain surface level parking for the 3 dwelling units above. Each of the dwelling units in the Coach House will be approximately 165 m² in size each.

Appendix A: Detailed Water Demand Calculations

Revised water demand calculations included shall replace Appendix A.

From

Kevin Sansom
Senior Engineer

	Project: Victoria Annex	Date: 2022 06 15
	File No.: 120174	Designed: EL
	Subject: Watermain Design Condo Dwellings	Checked: KRS

Design Criteria

Person per Unit =	2.4		
Units =	5		
Per Capita Flow =	450.0	L/day	
Peaking Factors =	2.75	Maximum Day	(MECP Design Guidelines)
	4.5	Peak Hour	(Collingwood Development Standards)

Design Flows

$$\begin{aligned} \text{Average Daily Flow} &= 5,400.00 \text{ L/day} \\ &= 0.063 \text{ L/s} \end{aligned}$$

$$\begin{aligned} \text{Maximum Day Demand} &= \text{Average Flow} \times \text{Peaking Factor} \\ &= 0.17 \text{ L/s} \end{aligned}$$

$$\begin{aligned} \text{Peak Hour Demand} &= \text{Average Flow} \times \text{Peaking Factor} \\ &= 0.28 \text{ L/s} \end{aligned}$$

$$\text{Fire Underwriters Survey (FUS)} = 220C\sqrt{A} \quad (\text{Fire Underwriters Survey})$$

Coach House

$$\begin{aligned} C &= 1.5 && (\text{Fire Underwriters Survey}) \\ A &= 165 \text{ m}^2 \text{ per unit} \\ \text{Units} &= 3 \\ \text{FUS} &= 7342.04 \text{ L/min} \\ &= 122.37 \text{ L/s} \end{aligned}$$


Annex

$$\begin{aligned} C &= 1.0 && (\text{Fire Underwriters Survey}) \\ A &= 235 \text{ m}^2 \text{ per unit} \\ \text{Units} &= 2 \\ \text{FUS} &= 4769.49 \text{ L/min} \\ &= 79.49 \text{ L/s} \end{aligned}$$

$$\text{Total FUS} = 201.86 \text{ L/s}$$

$$\begin{aligned} \text{Fire Flows} &= \text{Maximum Day Demand} + \text{FUS} && (\text{Collingwood Development Standards}) \\ &= 202.03 \text{ L/s} \end{aligned}$$

$$\text{Therefore, Design Flow} = 202.03 \text{ L/s}$$

	Project: Victoria Annex	Date: 2022 06 15
	File No.: 120174	Designed: EL
	Subject: Watermain Design Detached Units	Checked: KRS

Design Criteria

Person per Unit =	2.9		
Units =	4		
Per Capita Flow =	450.0	L/day	
Peaking Factors =	2.75	Maximum Day	(MECP Design Guidelines)
	4.5	Peak Hour	(Collingwood Development Standards)

Design Flows

Average Daily Flow = 5,220.00 L/day
= 0.060 L/s

Maximum Day Demand = Average Flow x Peaking Factor
= 0.17 L/s


Peak Hour Demand = Average Flow x Peaking Factor
= 0.27 L/s

Fire Underwriters Survey (FUS) = $220C\sqrt{A}$ (Fire Underwriters Survey)

C = 1.5 (Fire Underwriters Survey)
A = 273 m² per unit
Units = 14
FUS = 20401.37 L/min
= 340.02 L/s

Fire Flows = Maximum Day Demand + FUS (Collingwood Development Standards)
= 340.19 L/s

Therefore, Design Flow = 340.19 L/s

	Project: Victoria Annex	Date: 2022 06 15
	File No.: 120174	Designed: EL
	Subject: Watermain Design Semi-Detached Units	Checked: KRS

Design Criteria

Person per Unit =	2.7		
Units =	10		
Per Capita Flow =	450.0	L/day	
Peaking Factors =	2.75	Maximum Day	(MECP Design Guidelines)
	4.5	Peak Hour	(Collingwood Development Standards)

Design Flows

$$\begin{aligned} \text{Average Daily Flow} &= 12,150.00 \text{ L/day} \\ &= 0.141 \text{ L/s} \end{aligned}$$

$$\begin{aligned} \text{Maximum Day Demand} &= \text{Average Flow} \times \text{Peaking Factor} \\ &= 0.39 \text{ L/s} \end{aligned}$$

$$\begin{aligned} \text{Peak Hour Demand} &= \text{Average Flow} \times \text{Peaking Factor} \\ &= 0.63 \text{ L/s} \end{aligned}$$

$$\text{Fire Underwriters Survey (FUS)} = 220C\sqrt{A} \quad (\text{Fire Underwriters Survey})$$

$$\begin{aligned} C &= 1.5 && (\text{Fire Underwriters Survey}) \\ A &= 242 \text{ m}^2 \text{ per unit} \\ \text{Units} &= 10 \\ \text{FUS} &= 16233.85 \text{ L/min} \\ &= 270.56 \text{ L/s} \end{aligned}$$

$$\begin{aligned} \text{Fire Flows} &= \text{Maximum Day Demand} + \text{FUS} && (\text{Collingwood Development Standards}) \\ &= 270.95 \text{ L/s} \end{aligned}$$

$$\text{Therefore, Design Flow} = 270.95 \text{ L/s}$$