October 4, 2024
P24-0751

City of Greater Sudbury
200 Brady Street
Sudbury, ON
P3A 5P3

Attention: Robert Webb, P.Eng., Supervisor of Development Engineering

> Memo Report: Water servicing demand calculation for the proposed development of 0 Montee Genereux Street, Chelmsford, City of Greater Sudbury, ON (TULLOCH Project 24-0751)

TULLOCH Engineering Inc. (TULLOCH) has been retained to evaluate the water servicing demand associated with the proposed development of 0 Montee Genereux Street, Chelmsford, City of Greater Sudbury, Ontario. The subject area is legally described as Part Lot 1, Concession 2, Township of Balfour; Lots 12-14 on Plan 53M-1420. This memo will identify the anticipated water servicing demand needed to support the proposed development and is intended to be reviewed by the City to confirm adequate flows are available within the existing municipal infrastructure.

The 0.33 ha (approximate) subject area is currently zoned Low-Density Residential Two (R2-2) and is undeveloped. It is proposed to re-zone the property to R3(S) (medium density residential special) to permit a 2-storey 5-unit row dwelling building.

A demand scenario has been evaluated for the proposed residential development by applying a per unit density of 2.5 population for multi-unit dwellings (R3 density) in accordance with Table 2.1 of the City of Greater Sudbury Engineering Design Manual. The development is proposed to utilize the existing water service from Montee Genereux Street. A review of the City's as-built drawing (Montee Genereux, station 1+150 to station 0+290) dated November 7, 2013, indicates a 300mm diameter water main is present.

The peak water demand for this development scenario has been calculated as per the City of Greater Sudbury's Engineering Design Manual and is outlined herein.

WATER DEMAND

The peak water demands for the proposed development scenario options are calculated in the attached design spreadsheets and outlined in the table below.

Scenario	Average Daily Flow (L/s)	Max. Hour Flow (L/s)	Max. Day Flow (L/s)	Min. Hour Flow (L/s)
2-storey 5-unit row dwelling building	0.05	0.14	0.09	0.03

At this stage, fire flow demand is estimated to be 100 L/s in accordance with the proposed R3 zoning.

CLOSURE

We trust this meets your needs for assessment of the water service availability and potential upgrade requirements associated with the proposed development scenario.

Sincerely,

Rebecca Dawson, EIT

Civil Engineering Intern

TULLOCH

TULLOCH

TULLOCH ENGINEERING

PROPOSED DEVELOPMENT - 0 MONTEE GENEREUX, SUDBURY, ON

WATER DEMAND CALCULATION

DATE: *2024-10-04*

DESIGN/CHECK: *RD/PD*

PROJECT NO: *240751*

SHEET 1

Equations and Constants

Flow Criteria	Peaking Factors		Population Density
360 L/cap/d *Residential*	Min Hour Max Hour Max Day	0.65 2.70 1.80	2.5 cap/unit
CGS Engineering Design Manual Table 2.2 (Chelmsford)	*CGS Engineering Design Manual Table 3.1* (Valley - Chelmsford)		*CGS Engineering Design Manual* Table 2.1

	POPULATION		DESIGN FLOWS					
DEVELOPMENT CATEGORY	No. OF UNITS	POPULATION	AVERAGE DAILY FLOW	AVERAGE FLOW	MAX HOUR FLOW	MAX DAY FLOW	MIN HOUR FLOW	
		CAP.	L/d	l/s	l/s	l/s	l/s	NOTES
PROPOSED (5 UNITS)	5	13	4,500	0.05	0.14	0.09	0.03	2-storey 5-unit row dwelling building
TOTAL	5	13	4,500	0.05	0.14	0.09	0.03	

City of Greater Sudbury | P.O. Box 5000 Stn. A, 200 Brady Street, Sudbury ON P3A 5P3 I 705.674.4455
Ville du Grand Sudbury | CP 5000 Succ A, 200, rue Brady, Sudbury, ON P3A 5P3 I 705 674.4455

October 9, 2024

Tulloch Engineering
131 Fielding Rd
Lively, ON
P3Y 1L7

Attention: Peter Derro, P. Eng

Re: Sewer and Water Capacity Analysis
Montee Genereux (Lots 12-14 on 53M 1420)
Township of Balfour

The Development Engineering Section has reviewed your request for a Water Capacity Analysis at the above noted location and have the following to report:

A capacity analysis performed by our WaterCAD model, developed the following results at the 300mm watermain at an elevation of 271.6831 in front of lots 12-14 Montee Genereux.

Values Obtained from Model	C.G.S. Minimum Requirements
Max Hour: 76 psi	• 40 psi
Max Day: 77 psi	• 50 psi
Fire Flow: 323 l/s @ 20psi	• 75 L/s R1, 100 L/s R3

The results of the WaterCAD analysis indicate that sufficient water capacity and pressure exist for the proposal in question.

It should be noted that these results are derived at by using a theoretical computer model based on our best available data. In the event that these developments do not proceed within a one (1) year period, then you should make the necessary arrangements to have a current analysis carried out to take into account any changes made in our sewer or WaterCAD models and to ensure that there is sufficient Sewage, Fire Flows and/or Domestic Pressures available for your proposal(s).

Should you have any questions or concerns please contact me at 671-2489 ext 2409.

Yours truly,

David Longarini
Development Engineering Technician

DVL/ds

cc: Akli BenAnteur, Wastewater Project Engineer, (Kelly Lake)