

File 119106

May 10, 2023

Nathan Wukash  
Community Planner  
Town of Collingwood  
P.O. Box 157, 97 Hurontario Street  
Collingwood, Ontario L9Y 3Z5  
nwukash@collingwood.ca

Re: 50 Saunders Street, Town of Collingwood  
Servicing Update (Town file number: D1201120)

Dear Nathan:

The following is provided to address the sanitary and water servicing for the proposed 62-unit residential development at 50 Saunders Street in the Town of Collingwood.

### **PROPOSED DEVELOPMENT**

The proposed development will consist of 62 single family detached lots fronting either the proposed crescent road (Street A) or Saunders Street. A 200 mm diameter sanitary sewer and 150 mm diameter watermain will be constructed along Street A to service the site from the existing 200 mm diameter sanitary sewer and 150 mm diameter watermain on Saunders Street.

### **WATER SUPPLY & DISTRIBUTION**

The Collingwood Water Treatment Plant has a rated capacity of 31,140 m<sup>3</sup>/day during the summer and 24,019 m<sup>3</sup>/day during the winter per the Town of Collingwood Semi-Annual Water and Wastewater Uncommitted Hydraulic Reserve Capacity Update (September 2022). The 2022 Capacity Update showed an average maximum day demand of 15,279 m<sup>3</sup>/day during the summer and 9,707 m<sup>3</sup>/day during the winter, along with 10,750 m<sup>3</sup>/day of municipally committed flow during the summer and winter. This results in a hydraulic reserve capacity of 5,111 m<sup>3</sup>/day during the summer and 3,562 m<sup>3</sup>/day during the winter. When factoring in Planning Applications, Committed Servicing Capacity Allocation and a Factor of Safety, the remaining uncommitted hydraulic reserve capacity was determined to be 1,830 m<sup>3</sup>/day during the summer and 1,263 m<sup>3</sup>/day during the winter.

### **Water Demands Assessment**

The Town of Collingwood Development Standards (2007) and Town of Collingwood Semi-Annual Water and Wastewater Uncommitted Hydraulic Reserve Capacity Update (September 2022) were used to

determine the water consumption demand for the site. The average water demand is assumed at 260 L/cap/day and the persons per unit (PPU) has been assumed at 2.90 PPU. Peak usage factors for maximum day demand and peak hour demand were determined to be 1.77 and 4.5, respectively. The maximum daily demand was calculated to be 0.96 L/s and the peak hour demand is 2.43 L/s. The maximum daily demand equates to 62 SDU using the Town's single detached unit equivalent calculation. The supporting calculations are attached.

## **SANITARY SEWAGE**

The sewage treatment plant has an average day flow rated capacity of 24,548 m<sup>3</sup>/day and a maximum day flow rate capacity of 17,706 m<sup>3</sup>/day based on a review of the Town of Collingwood Semi-Annual Water and Wastewater Uncommitted Hydraulic Reserve Capacity Update (September 2022). The Capacity Update notes the Hydraulic Reserve Capacity of 6,842 m<sup>3</sup>/day. When factoring in Planning Applications, Committed Servicing Capacity Allocation and a Factor of Safety, the remaining uncommitted hydraulic reserve capacity was determined to be 4,427 m<sup>3</sup>/day.

### **Sanitary Demands Assessment**

The expected sewage to be generated by the proposed site and surrounding area was calculated using the attached sanitary design sheet. It was confirmed that the existing 200 mm diameter sanitary sewer on Saunders Street has sufficient capacity to service the proposed 62 single detached units. Supporting calculations are attached for reference.

## **SUMMARY**

Based on the preceding analysis, the development has adequate water and sanitary servicing available to support the proposed site. The site will be serviced by the existing 200 mm diameter sanitary sewer and the existing 150 mm diameter watermain on Saunders Street.

Yours truly,

**Tatham Engineering Limited**



Andrew Schoof, B.A.Sc., M.A.Sc.  
Engineering Intern  
AS:rlh  
Encl.



Doris Casullo, B.A.Sc., P.Eng.  
Senior Engineer, Project Manager





Project: 50 Saunders

Date: May 2023

File No.: 119106

Designed: AS

Subject: Water Supply Calculations - ICBL

Checked: DC

#### Town and MECP Standards Water Supply Calculation

Sewage Generation for Domestic Water Demand: 260 L/cap/day As per Town of Collingwood Semi-Annual Water and Wastewater  
Single Detached Home 2.90 PPU Uncommitted Hydraulic Reserve Capacity Update (September 2022)

Total Units = 62  
Number of Persons = 180  
Average Daily Flow = 46748 L/day  
Average Daily Flow = 46.7 m<sup>3</sup>/day  
Maximum Day Factor = 1.77 As per Town of Collingwood Semi-Annual Water and Wastewater  
Uncommitted Hydraulic Reserve Capacity Update  
Peak Hour Factor = 4.50 As per MOE Design Guidelines for Drinking Water Systems (2008)

Maximum Day Demand: 0.96 L/s = 83 m<sup>3</sup>/day / 1.33 = **62 SDU**  
Peak Hour Demand: 2.43 L/s

#### Town of Collingwood Semi-Annual Water and Wastewater Uncommitted Hydraulic Reserve Capacity Update (September 2022) - Appendix A

##### Assumptions:

ADD/ Capita Consumption (L/day): 260  
Residential Peaking Factor (ADD:MDD Ratio): 1.77  
ICI Peaking Factor (ADD:MDD Ratio): 2.5

Commercial Area ADD (m<sup>3</sup>/ha/day) 28  
Industrial Area ADD (m<sup>3</sup>/ha/day) 35  
Institutional Area ADD (m<sup>3</sup>/ha/day) 28

Residential Types Legend MDD (m<sup>3</sup>/d)

|                                                   |      |
|---------------------------------------------------|------|
| Residential - Single Detached Home (2.9 ppl/unit) | 1.33 |
| Residential - Semi Detached (2.7 ppl/unit)        | 1.24 |
| Residential - Townhouse/ Row-House (2.4 ppl/unit) | 1.10 |
| Residential - Condo/ Apartment (1.9 ppl/unit)     | 0.87 |

Residential Types Legend SDU-E

|                                                   |      |
|---------------------------------------------------|------|
| Residential - Single Detached Home (2.9 ppl/unit) | 1.00 |
| Residential - Semi Detached (2.7 ppl/unit)        | 0.93 |
| Residential - Townhouse/ Row-House (2.4 ppl/unit) | 0.83 |
| Residential - Condo/ Apartment (1.9 ppl/unit)     | 0.66 |

Project Information

|                    |        |
|--------------------|--------|
| 50 Saunders Street | 119106 |
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Drawing Reference

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| SAN01 |  |
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Prepared By

|               |          |
|---------------|----------|
| Andrew Schoof | May 2023 |
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Reviewed By

|              |          |
|--------------|----------|
| Jeremy Acres | May 2023 |
|--------------|----------|

Engineer's Stamp

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Municipality

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| Town of Collingwood |
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Flow Rates

|                       |      |
|-----------------------|------|
| Average (L/cap/day)   | 260  |
| Infiltration (L/s/Ha) | 0.23 |

Population Density

| Cap/<br>Unit | Low  | Med | High |
|--------------|------|-----|------|
|              | 2.90 | -   | -    |

Manning's Coefficient

| Pipe    | Value |
|---------|-------|
| Conc.   | 0.013 |
| PVC     | 0.013 |
| Assumed | 0.013 |

| STREET NAME            | AREA<br>LABEL / ID | UPSTREAM<br>MANHOLE | DOWNSTREAM<br>MANHOLE | NUMBER<br>OF UNITS | POPULATION (cap) | ACCUMULATED<br>POPULATION (cap) | PEAKING FACTOR<br>(HARMON) | AREA (Ha) | ACCUMULATED<br>AREA (Ha) | AVERAGE FLOW (L/s) |              |       | PEAK FLOW (L/s) |              |       | PROPOSED SANITARY SEWER |                       |           |                             |                             |                             |                          |
|------------------------|--------------------|---------------------|-----------------------|--------------------|------------------|---------------------------------|----------------------------|-----------|--------------------------|--------------------|--------------|-------|-----------------|--------------|-------|-------------------------|-----------------------|-----------|-----------------------------|-----------------------------|-----------------------------|--------------------------|
|                        |                    |                     |                       |                    |                  |                                 |                            |           |                          | RESIDENTIAL        | INFILTRATION | TOTAL | RESIDENTIAL     | INFILTRATION | TOTAL | LENGTH<br>OF PIPE (m)   | PIPE<br>DIAMETER (mm) | GRADE (%) | FULL FLOW<br>CAPACITY (L/s) | PERCENT OF<br>FULL FLOW (%) | FULL FLOW<br>VELOCITY (m/s) | ACTUAL<br>VELOCITY (m/s) |
|                        |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |
| Street A               | 2                  | MH2                 | MH3                   | 9                  | 26.1             | 26.1                            | 4.36                       | 0.55      | 0.55                     | 0.08               | 0.13         | 0.21  | 0.34            | 0.13         | 0.47  | 65.6                    | 200                   | 1.0%      | 32.80                       | 1.4%                        | 1.04                        | 0.38                     |
| Street A               | 3                  | MH3                 | MH4                   | 2                  | 5.8              | 31.9                            | 4.35                       | 0.19      | 0.74                     | 0.10               | 0.17         | 0.27  | 0.42            | 0.17         | 0.59  | 10.2                    | 200                   | 0.6%      | 25.40                       | 2.3%                        | 0.81                        | 0.34                     |
| Street A               | 4                  | MH4                 | MH5                   | 12                 | 34.8             | 66.7                            | 4.29                       | 0.74      | 1.48                     | 0.20               | 0.34         | 0.54  | 0.86            | 0.34         | 1.20  | 82.4                    | 200                   | 0.6%      | 25.40                       | 4.7%                        | 0.81                        | 0.41                     |
| Street A               | 5                  | MH5                 | MH6                   | 12                 | 34.8             | 101.5                           | 4.24                       | 0.72      | 2.20                     | 0.31               | 0.51         | 0.81  | 1.30            | 0.51         | 1.80  | 80.2                    | 200                   | 0.6%      | 25.40                       | 7.1%                        | 0.81                        | 0.46                     |
| Street A               | 6                  | MH6                 | MH7                   | 3                  | 8.7              | 110.2                           | 4.23                       | 0.22      | 2.42                     | 0.33               | 0.56         | 0.89  | 1.40            | 0.56         | 1.96  | 12.5                    | 200                   | 0.6%      | 25.40                       | 7.7%                        | 0.81                        | 0.47                     |
| Street A               | 7                  | MH7                 | MH8                   | 5                  | 14.5             | 124.7                           | 4.22                       | 0.29      | 2.71                     | 0.38               | 0.62         | 1.00  | 1.58            | 0.62         | 2.21  | 46.6                    | 200                   | 0.6%      | 25.40                       | 8.7%                        | 0.81                        | 0.48                     |
| Street A               | 8                  | MH8                 | MH9                   | 3                  | 8.7              | 133.4                           | 4.21                       | 0.22      | 2.93                     | 0.40               | 0.67         | 1.08  | 1.69            | 0.67         | 2.36  | 27.0                    | 200                   | 0.6%      | 25.40                       | 9.3%                        | 0.81                        | 0.49                     |
| Street A & Saunders St | 9                  | MH9                 | MH28A                 | 2                  | 5.8              | 139.2                           | 4.20                       | 0.13      | 3.06                     | 0.42               | 0.70         | 1.12  | 1.76            | 0.70         | 2.46  | 26.3                    | 200                   | 0.6%      | 25.40                       | 9.7%                        | 0.81                        | 0.50                     |
|                        |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |
| Poplar Sideroad        | A12                | MH51A               | MH50A                 | 5                  | 14.5             | 14.5                            | 4.40                       | 0.85      | 0.85                     | 0.04               | 0.20         | 0.24  | 0.19            | 0.20         | 0.39  | 86.7                    | 200                   | 1.0%      | 32.80                       | 1.2%                        | 1.04                        | 0.36                     |
| Poplar Sideroad        | A13                | MH50A               | MH30A                 | 5                  | 14.5             | 29.0                            | 4.36                       | 0.75      | 1.60                     | 0.09               | 0.37         | 0.46  | 0.38            | 0.37         | 0.75  | 120.0                   | 200                   | 0.4%      | 20.74                       | 3.6%                        | 0.66                        | 0.31                     |
| Saunders Street        | 0                  | MH30A               | MH1A                  | 0                  | 0.0              | 29.0                            | 4.36                       | 0.11      | 1.71                     | 0.09               | 0.39         | 0.48  | 0.38            | 0.39         | 0.77  | 62.0                    | 200                   | 0.45%     | 22.00                       | 3.5%                        | 0.70                        | 0.33                     |
|                        |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |
| Street A               | 1                  | MH2                 | MH1                   | 7                  | 20.3             | 20.3                            | 4.38                       | 0.42      | 0.42                     | 0.06               | 0.10         | 0.16  | 0.27            | 0.10         | 0.36  | 50.3                    | 200                   | 5.0%      | 73.33                       | 0.5%                        | 2.33                        | 0.64                     |
| Street A               | -                  | MH1                 | MH1A                  | 0                  | 0.0              | 20.3                            | 4.38                       | 0.00      | 0.42                     | 0.06               | 0.10         | 0.16  | 0.27            | 0.10         | 0.36  | 11.8                    | 200                   | 5.0%      | 73.33                       | 0.5%                        | 2.33                        | 0.64                     |

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| 50 Saunders Street | 119106 |
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Drawing Reference

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| Andrew Schoof | May 2023 |
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| Jeremy Acres | May 2023 |
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|              | 2.90 | -   | -    |

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| PVC     | 0.013 |
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|-----------------|--------------------|---------------------|-----------------------|--------------------|------------------|---------------------------------|----------------------------|-----------|--------------------------|--------------------|--------------|-------|-----------------|--------------|-------|-------------------------|-----------------------|-----------|-----------------------------|-----------------------------|-----------------------------|--------------------------|
|                 |                    |                     |                       |                    |                  |                                 |                            |           |                          | RESIDENTIAL        | INFILTRATION | TOTAL | RESIDENTIAL     | INFILTRATION | TOTAL | LENGTH<br>OF PIPE (m)   | PIPE<br>DIAMETER (mm) | GRADE (%) | FULL FLOW<br>CAPACITY (L/s) | PERCENT OF<br>FULL FLOW (%) | FULL FLOW<br>VELOCITY (m/s) | ACTUAL<br>VELOCITY (m/s) |
| Saunders Street | 10                 | MH1A                | MH29A                 | 3                  | 8.7              | 58.0                            | 4.30                       | 0.47      | 2.60                     | 0.17               | 0.60         | 0.77  | 0.75            | 0.60         | 1.35  | 58.0                    | 200                   | 0.45%     | 22.00                       | 6.1%                        | 0.70                        | 0.38                     |
|                 |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |
| Stephens St     | A25                | MH38A               | MH37A                 | 10                 | 29.0             | 29.0                            | 4.36                       | 1.09      | 1.09                     | 0.09               | 0.25         | 0.34  | 0.38            | 0.25         | 0.63  | 101.1                   | 200                   | 0.5%      | 23.19                       | 2.7%                        | 0.74                        | 0.32                     |
| Stephens St     | A26                | MH37A               | MH29A                 | 4                  | 11.6             | 40.6                            | 4.33                       | 0.62      | 1.71                     | 0.12               | 0.39         | 0.52  | 0.53            | 0.39         | 0.92  | 110.0                   | 200                   | 0.5%      | 23.19                       | 4.0%                        | 0.74                        | 0.36                     |
|                 |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |
| Saunders St     | 11                 | MH29A               | MH28A                 | 10                 | 29.0             | 127.6                           | 4.21                       | 1.14      | 5.45                     | 0.38               | 1.25         | 1.64  | 1.62            | 1.25         | 2.87  | 122.4                   | 200                   | 0.4%      | 20.74                       | 13.8%                       | 0.66                        | 0.45                     |
|                 |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |
| Mary Street     | A28                | MH36A               | MH28A                 | 7                  | 20.3             | 20.3                            | 4.38                       | 0.94      | 0.94                     | 0.06               | 0.22         | 0.28  | 0.27            | 0.22         | 0.48  | 120.0                   | 200                   | 1.0%      | 32.80                       | 1.5%                        | 1.04                        | 0.38                     |
| Saunders St     | A17                | MH28A               | MH27A                 | 2                  | 5.8              | 292.9                           | 4.08                       | 0.54      | 9.99                     | 0.88               | 2.30         | 3.18  | 3.60            | 2.30         | 5.90  | 122.4                   | 200                   | 0.37%     | 19.95                       | 29.6%                       | 0.63                        | 0.53                     |
|                 |                    |                     |                       |                    |                  |                                 |                            |           |                          |                    |              |       |                 |              |       |                         |                       |           |                             |                             |                             |                          |

Notes

1. Population Density of 2.90 determined from Town of Collingwood Semi-Annual Water and Wastewater Uncommitted Hydraulic Reserve Capacity Update (September 2022)