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655 Hurontario Street

FUNCTIONAL SERVICING REPORT
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Version	Date	Description



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1 Introduction

The following Functional Servicing Report (FSR) has been prepared in support of a site plan approval application for the proposed 655 Hurontario Street Development in the Town of Collingwood, County of Simcoe. This report presents an overview of the proposed servicing strategy for the site, including water supply and distribution, sanitary sewage collection and conveyance and utility distribution (hydro, gas, telephone and cable). Additional servicing components such as transportation and stormwater management assessments have been completed under separate cover by Tatham Engineering (Tatham).

1.1 **SITE DESCRIPTION**

The subject property consists of approximately 0.42 ha of undeveloped land located northeast of the intersection of Hurontario Street and Lockhart Road in the Town of Collingwood. The site is primarily grass covered with an overgrown wooded portion along the north property line. The subject property is bounded by Lockhart Road to the south, Hurontario Street to the west and residential homes to the north and east. Figure 1 provided overleaf illustrates the location of the subject property.

1.2 **OBJECTIVES**

The primary objective of this report is to determine the services that are available at the subject property and demonstrate how the proposed development will use these services. The report will confirm the available capacity of the services and outline how the proposed development will comply with Town and Provincial regulations and not adversely affect other users.



2 Proposed Development

The proposed development will consist of a four-storey residential apartment building consisting of 50 units. A sanitary service will be provided to the site from the existing 250 mm diameter gravity trunk sewer running east on Lockhart Road. The trunk sewer outlets to the Patterson Street Sewage Pumping Station (SPS) and ultimately the Collingwood Wastewater Treatment Plant. Separate domestic and fire services will be provided to the site via connection to the existing 200 mm diameter watermain on Lockhart Road. Utilities (hydro, gas, telephone and cable) will be provided by the respective utility providers in the surrounding area.



3 Sanitary Sewage Collection & Conveyance System

The existing sanitary sewer capacity in the area was confirmed through review of the “Town of Collingwood, Trunk Sanitary Sewer Capacity Assessment – South End” (2013) prepared by Tatham.

The 250 mm diameter trunk sewer located on Lockhart Road flows east to a maintenance hole located at the intersection of Lockhart Road and Brock Crescent. We investigated the potential connection point to the trunk sewer and confirmed that the existing sanitary sewer is at sufficient depth for a sanitary service connection to the proposed building. A 200 mm diameter asbestos cement sanitary sewer service appears to be provided from the existing maintenance hole toward the subject property. This service was investigated by CCTV inspection and found to be completely blocked approximately 4.5 m upstream of the maintenance hole. As such, the existing sewer service will not be suitable for use. A new connection will be made at the manhole at the intersection of Lockhart Road and Brock Crescent as shown on the attached site servicing drawing (SS-1).

The Town of Collingwood Development Standards (2007) and Town of Collingwood Development Charge Background Study (2014) were used as a guide to determine the expected sanitary sewer flow from this site. The average sewage generation demand is conservatively assumed at 450 L/cap/day and the persons per unit (PPU) has been assumed at 1.43 PPU according to the Development Charge Background Study. A peak factor of 4.3 has been calculated based on the Harmon Formula. The peak demand combined with the extraneous flow requirement results in a peak flow of approximately 1.70 L/s. Supporting calculations are attached in Appendix A.

According to the 2013 sewer capacity assessment completed by Tatham, the most constricting section of sewer from Lockhart Road to the Patterson Street SPS has a residual capacity of 18.70 L/s and the SPS has a residual capacity of 75.87 L/s. Therefore, the residual capacities are sufficient for the peak flow from the development.



4 Water Supply & Distribution

The Town of Collingwood Development Standards (2007) and Town of Collingwood Development Charge Background Study (2014) were used as a guide to determine the water consumption demand for the site. The average water demand is conservatively assumed at 450 L/cap/day and the persons per unit (PPU) has been assumed at 1.43 PPU according to the Development Charge Background Study. Peak usage factors for maximum day demand and peak hour demand were extracted from the MOE Design Guidelines for Drinking Water Systems (2008). The maximum daily demand (1.84 L/s) combined with the fire flow requirements (57 L/s) results in a governing flow requirement of 58.84 L/s. The peak hour demand is 2.78 L/s. Supporting calculations are attached in Appendix B.

An existing 300 mm diameter watermain is located along the west side of Hurontario Street and a 200 mm diameter watermain is located along the north side of Lockhart Road. Based on a preliminary analysis of the supply requirements and expected friction losses, two 150 mm diameter water services connecting to the existing Lockhart Road watermain are proposed for domestic and fire service. Adequate water flow and pressure will be confirmed through inclusion in the Town's overall hydraulic network analysis model. Existing fire hydrants are located at the southeast corner of the site and approximately 30 m northwest of the site. An internal fire hydrant located in the northeast corner of the property is proposed to provide water supply for fire department connection to the sprinkler system. Details of the water services are included in the attached site servicing drawing (SS-1).

A single water meter will be installed internal to the building to record water consumption, which will be connected to one water bill. The fire line will not be metered. The proposed facilities will also be provided with backflow prevention devices in accordance with the Ontario Building Code and the Town's water by-law. The backflow prevention devices will also be installed internal to the building to allow for testing and maintenance as may be required.



5 Stormwater Management

A separate Stormwater Management Report (March 2019) has been prepared by Tatham to address drainage and stormwater management requirements, and should be read in conjunction with this report. The Stormwater Management Report has been prepared to address the internal and external servicing requirements related to stormwater management for this project and describes in detail the stormwater management plan for this development.



6 Traffic Impact Assessment

A separate Traffic Impact Study (March 2019) has been prepared by Tatham to address issues with traffic operations and the transportation system. It confirms an adequate road network exists to support the development and proposed entrance. This report should be read for details related to traffic operations.



7 Utilities

The relevant utility companies (electrical, gas, telephone and cable) were contacted to determine the availability of services for the site.

Bell Canada has confirmed sufficient capacity to service the development.

EPCOR - formerly Collingwood Utility Services (COLLUS) - has confirmed 4.16KV & 44KV overhead lines on the west side of Hurontario Street and a 3-phase primary (4.16KV) at Lockhart Road and Katherine Street. Confirmation of electric load for the site will allow them to confirm adequacy of services.

Enbridge Gas has confirmed there is a 1" (25 mm) diameter gas main on Lockhart Road that can be accessed to service the development. Confirmation of gas load for the site will allow them to confirm adequacy of services.

Rogers has been contacted and has confirmed their intention to provide telecommunication services within the proposed development.



8 Conclusion

Based on the preceding analyses, the development has adequate services available to support the proposed site.

The site shall be serviced by the existing 250 mm diameter gravity sanitary trunk sewer on Lockhart Road, which has sufficient residual capacity under existing conditions. The existing 200 mm diameter watermain on Lockhart Road shall provide the requisite water servicing. Underground storage shall provide the requisite stormwater management. EPCOR, Enbridge Gas Distribution, Rogers and Bell Canada have been contacted and have confirmed the availability of their utilities for the proposed development.

Should you have any questions or concerns, please do not hesitate to contact the undersigned.



Appendix A: Sanitary Sewer Calculations



Project: 655 Hurontario Street	Date: March 2019
File No.: 118197	Designed: AS
Subject: Sanitary Sewer Design Flows	Checked: JPA

MOE GUIDELINES

Sewage Generation for Domestic Water Demand: 450 L/cap/day As per Town of Collingwood Development Standards
 High Density Persons Per Unit: 1.43 PPU As per Town of Collingwood Development Charge Background
 Low Density Persons Per Unit: 2.40 PPU Study (Watson & Associates Economists Ltd., 2014)

Multi-Storey High Density Residential Building (50 units)

Development Area = 0.42 ha
 Total Units = 50
 Number of Persons = 72
 Equivalent Single Family Units = 30
 Average Daily Flow = 32400 L/day
 Peaking Factor = 4.28 Harmon Formula as per MOE Design Guidelines for Sewage Works (2008)
 Peak Demand = 1.60 L/s
 Extraneous Flows = 20000 L/ha/day Wet weather infiltration rate per Town of Collingwood Development Standards
 Extraneous Flows = 0.10 L/s

Peak Flow = (Maximum Day Demand) + (Extraneous)

Peak Flow = 1.70 L/s

Appendix B: Water Supply Demand



Project: 655 Hurontario Street

Date: March 2019

File No.: 118197

Designed: AS

Subject: Water Supply Calculations

Checked: JPA

MOE GUIDELINES

Sewage Generation for Domestic Water Demand: 450 L/cap/day As per Town of Collingwood Development Standards
 High Density Persons Per Unit: 1.43 PPU As per Town of Collingwood Development Charge Background Study (Watson & Associates Economists Ltd., 2014)

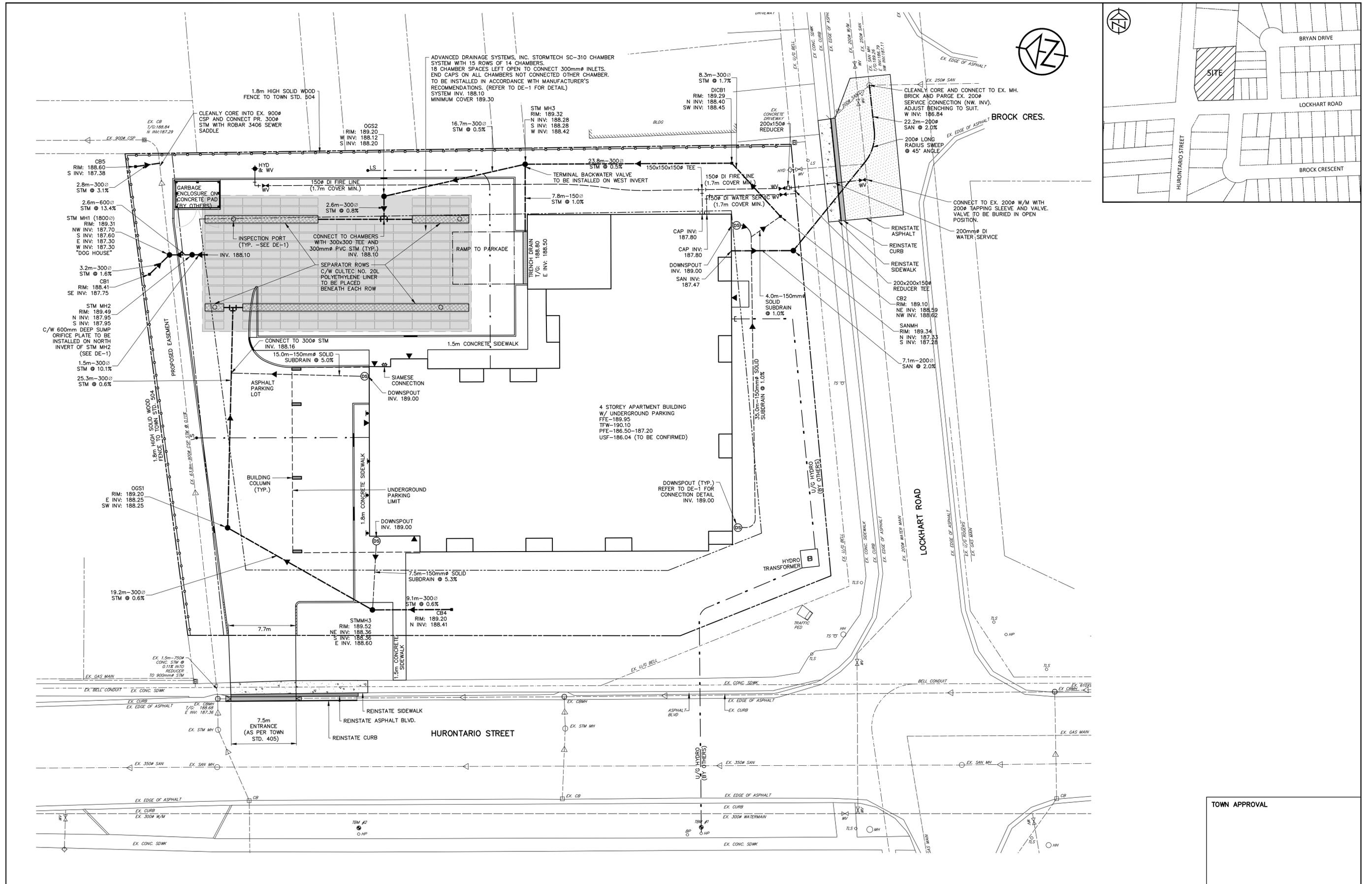
Multi-Storey High Density Residential Building (50 units)

Total Units = 50
 Number of Persons = 72
 Average Daily Flow = 32400 L/day
 Maximum Day Factor = 4.9 As per MOE Design Guidelines for Drinking Water Systems (2008)
 Peak Hour Factor = 7.4 As per MOE Design Guidelines for Drinking Water Systems (2008)

Maximum Day Demand: 1.84 L/s
 Peak Hour Demand: 2.78 L/s

Fire Suppression: 57.00 L/s Town of Collingwood Development Standards minimum for Residential Single Family Streets

Design Flow: 58.84 L/s Maximum Day Demand Plus Fire Flow



TOWN APPROVAL

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BENCHMARKS
 TBM1 - ELEVATION 189.177
 ELEVATIONS HEREON ARE GEODETIC AND REFER TO THE NAIL & WASHER IN SECOND HYDRO POLE NORTH OF THE INTERSECTION OF LOCKHART ROAD AND HURONTARIO STREET ON WEST SIDE OF ROAD.
 TBM2 - ELEVATION 189.682
 ELEVATIONS HEREON ARE GEODETIC AND REFER TO THE NAIL & WASHER IN FIRST HYDRO POLE NORTH OF INTERSECTION OF LOCKHART ROAD AND HURONTARIO STREET ON WEST SIDE OF ROAD.

NOTES
 LEGAL SURVEY INFORMATION AND LOT DIMENSIONS SHOWN ON THIS PLAN ARE TAKEN FROM A SURVEY PLAN PREPARED BY ZUBEK, EMO, THOMSEN & PATTEN, DATED 2019, WHICH MAY NOT BE FINAL AND ARE NOT GUARANTEED. THE FINAL REGISTERED PLAN OF SUBDIVISION SHALL BE REFERRED TO FOR CONFIRMATION OF THE DATA.
 TOPOGRAPHIC INFORMATION ON THIS PLAN FROM SURVEY PREPARED BY C.C. TATHAM & ASSOCIATES DATED OCT 13/2016.

No.	REVISION DESCRIPTION	DATE	ENGINEER STAMP
1.	1ST SUBMISSION	MAR 16/19	

ENGINEER STAMP
 R.S. SIMPSON
 LICENSED PROFESSIONAL ENGINEER
 PROVINCE OF ONTARIO

RDL EXPORT
 655 HURONTARIO STREET
 TOWN OF COLLINGWOOD
SITE SERVICING PLAN

TATHAM ENGINEERING
 DESIGN: AS/RD FILE: 118197 DWG:
 DRAWN: RD DATE: DEC 2018 **SS-1**
 CHECK: JPA/RS SCALE: 1:200