



File: 19123

FUNCTIONAL SERVICING REPORT

The Enclave Town of Fort Erie November 2022

INTRODUCTION

Upper Canada Consultants has been retained to prepare a Functional Servicing Report to address the servicing needs and requirements for the proposed residential development known as The Enclave in the Ridgeway Park neighbourhood of Town of Fort Erie.

The project site is located at the north east limit of the Ridgeway/Thunder Bay Secondary Plan of Town of Fort Erie. The subject property is situated north of Hazel Street, south of existing Ridgeway Highschool property, east of Ridge Road North and west Prospect Point Road North. The subject lands front on the west side of Prospect Point Road north with a proposed driveway entrances on Prospect Point Road north and Hazel Street.

The site is approximately 0.89 hectares and will consist of approximately 17 townhouses. The site will include associated asphalt road, concrete curb, catch basins, storm sewers, sanitary sewers, and watermain.

The objectives of this study are as follows:

1. Identify domestic and fire protection water service needs for the site;
2. Identify sanitary servicing needs for the site; and,
3. Identify stormwater management needs for the site.

WATER SERVICING

The following existing watermains are within close proximity to the proposed development site:

- 150mm dia. municipal watermain on the north side of Hazel Street, at south limit of the site and;
- 150mm dia. municipal watermain on the east side of Prospect Point Road north, at the east limit of the site.

It is proposed to construct a 150mm diameter watermain through the site connecting to the 150mm diameter watermain on Prospect Point Road North to provide both domestic water supply and fire



protection for the proposed development. There is an existing fire hydrant located on east side of the access route and on the north side of the Hazel Street. It is proposed to construct additional municipal fire hydrants within the proposed development to provide adequate fire protection for the proposed units. The spacing and locations of the proposed fire hydrants will be determined through detailed design.

SANITARY SERVICING

There is an existing 200mm diameter municipal sanitary sewer flowing westward on the south side of Hazel Street to an existing 450mm diameter regional sanitary sewer flowing southerly on Ridge Road north. It is proposed to construct a sanitary sewer to collect and convey the future sanitary flows of the proposed development on the subject lands. The proposed sanitary sewer will be connected to an existing sanitary maintenance hole located at the entrance of the driveway entrance on Hazel Street. It is proposed to convey the sanitary flows from the subject site to an existing 200mm diameter municipal sanitary sewer on Hazel Street.

The total drainage area of the subject land is approximately 0.89 hectares. Assuming a population density of 80 ppha (per Town of Fort Erie Standards, 2016) for future medium density townhouses the future population of 71 persons for the subject site. A population density of 35 ppha (per Town of Fort Erie Standards, 2016) was considered for the existing low-density residential units along the Hazel Street to determine the existing population of 68 persons. A sanitary analysis has been conducted determining the impact on the existing sanitary sewer system (Appendix A). It has been determined that the future sanitary flows from the proposed development will utilise approximately 6.38% of the full flow capacity of the existing downstream sanitary sewer. It is expected that this will be an acceptable addition to the current capacity of the existing sanitary sewer system.

STORMWATER MANAGEMENT PLAN

As part of the site development for the proposed residential development, the following is a summary of the stormwater management plan. The proposed development on the project site will increase the Runoff Coefficient to 0.60 from existing 0.20. Therefore, it is required to control the quality and quantity of the future stormwater flows from subject lands. Figure 1 (Appendix B) shows the proposed development of the subject lands and future proposed developments on the adjoining lands. The stormwater flows including and upto 5-year design storm events from the areas shown in the Figure 1 are draining into an existing 600mm diameter by-pass storm sewer located on the south side of the Royal Ridge Drive to an Outlet A. Therefore, the future proposed stormwater flows of the proposed developments from the subject site and adjoining properties shall be controlled to the existing allowable capacity upto and including 5 year design storm events draining into an existing 600mm storm sewer. Future stormwater flows in excess to the 5 year to 100 year design storm shall be controlled to existing levels. It is also required to improve stormwater quality levels to MECP Enhance Protection (80% TSS removal) levels prior to discharge to the existing 600mm diameter storm sewer which ultimately drains to Outlet A.



It is proposed to construct a Stormwater Management wet pond facility to control future stormwater flows from the drainage areas A10, A11, A12, A15 and including the drainage areas of subject site A13 and adjoining lands draining into the subject site A14 (Figure 1). It is proposed to construct a storm sewer system to collect and convey the future stormwater flows from the proposed development from the drainage area A13 and external area A14. The proposed storm sewer system will be connected to the future proposed storm sewer network of adjoining land north of the subject site. As shown in Figure 2 (Appendix B) the storm sewer networks from the drainage areas will convey the future stormwater flows upto and including 5 year storm into the wet pond facility. Major overland flows from the subject site will be conveyed to the Wet Pond Facility as shown in Figure 2. A section of driveway entrance on south side of the subject site will drain on to the Hazel Street and flow westward on Hazel Street ultimately draining to upstream of Outlet A. The stormwater flows from the drainage area A15 will be uncontrolled and will drain on to Ridge Road North. The proposed wet pond facility will provide enough volume to control the future stormwater flows for upto 5 year design storm event from the drainage areas A10 to A15 to the existing allowable capacity into the existing 600mm diameter by-pass storm sewer located on the south side of the Royal Ridge Drive. The proposed Stormwater Management Facility will provide quantity control for the future stormwater flows for design storm events in excess of 5 year to 100 year to the existing levels.

Stormwater quality controls will be provided to Enhanced Protection (80% TSS removal) levels prior to discharging into the existing 600mm diameter by-pass storm sewer. The proposed Wet Pond Facility will provide the require TSS removal to improve stormwater quality. Therefore, the proposed wet pond facility can provide the required stormwater quality and quantity controls in accordance with MECP guidelines.



CONCLUSIONS AND RECOMMENDATIONS

Therefore, based on the above comments and design calculations provided for this site, the following summarizes the servicing for this site.

1. The existing 150mm diameter watermain on Prospect Point Road North will have sufficient capacity to provide both domestic and fire protection water supply.
2. The existing 200mm diameter municipal sanitary sewer on Hazel Street will have adequate capacity for the proposed residential development.
3. Stormwater quantity and erosion controls can be provided by the proposed wet pond facility to allowable conditions up to and including the 100 year design storm event.
4. Stormwater quality protection can be provided to MECP Enhanced Protection (80% TSS removal) by the proposed wet pond facility.

Based on the above information, there exists adequate municipal servicing for this development. We trust the above comments and enclosed calculations are satisfactory for approval. If you have any questions or require additional information, please do not hesitate to contact our office.

Yours very truly,

Prepared by:

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November 11, 2022
Encl.

Reviewed by:

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APPENDICES



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APPENDIX A

Sanitary Sewer Calculations



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APPENDIX B

Figure 1 - Proposed Storm Drainage Areas
Figure 2 – Proposed SWM Facility

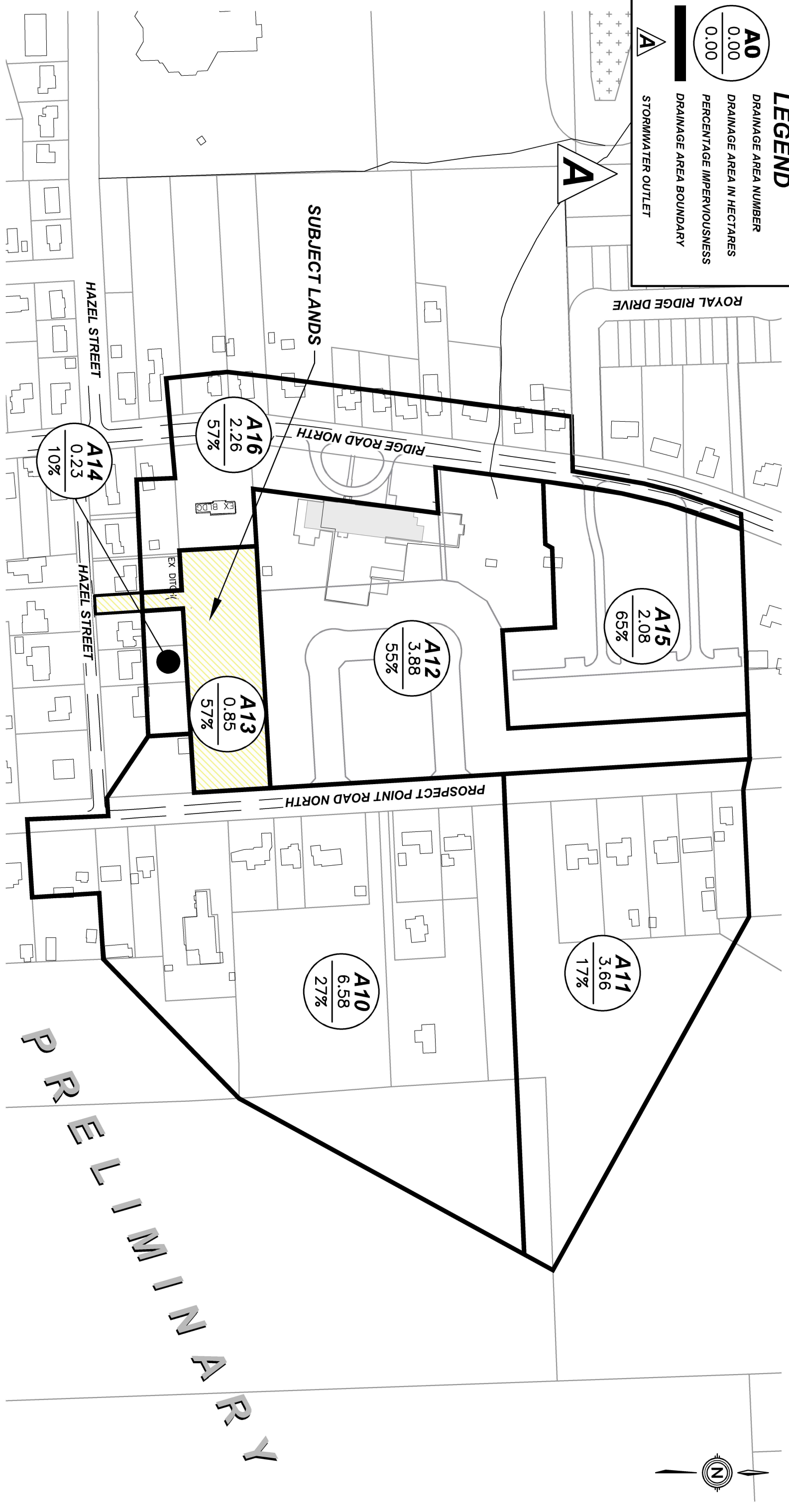
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LEGEND
DRAINAGE AREA NUMBER
DRAINAGE AREA IN HECTARES
PERCENTAGE IMPERVIOUSNESS

DRAINAGE AREA BOUNDARY

A

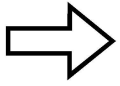
STORMWATER OUTLET



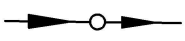
**PROPOSED STORM DRAINAGE AREAS
THE ENCLAVE
TOWN OF FORT ERIE**

DATE	2022-11-14
SCALE	1:2500 m
REF. No.	19123
DWG. No.	FIGURE 1

LEGEND



MAJOR OVERLAND FLOW PATH



STORM SEWER SYSTEM WITH DIRECTION OF FLOW



STORMWATER OUTLET



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**PROPOSED SWM FACILITY
THE ENCLAVE
TOWN OF FORT ERIE**

DATE	2022-11-14
SCALE	1:1250 m
REF No.	19123
DWG No.	FIGURE 2