



# Schedule B Class Environmental Assessment for the Lakeshore Road Sewage Pumping Station

**PROJECT FILE REPORT**  
**JULY 2022**

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## EXECUTIVE SUMMARY

### ES1. Introduction and Background

The Lakeshore Road Sewage Pumping Station (SPS) is owned and operated by the Region of Niagara (the Region) and is located at 14A Lakeshore Road in the Town of Fort Erie (the Town), Ontario. The station was commissioned in 1985 and has since undergone minor equipment replacements and various maintenance activities. The station has an existing firm capacity of 44 L/s at 10.4 m total dynamic head (TDH) with an actual operational firm capacity of 67 L/s. The overflow pump capacity is rated at 152 L/s at 5.2 m TDH. Currently, the flows from the Lakeshore Road SPS are conveyed through a 200 mm forcemain along Lakeshore Road to the upstream Catherine Street SPS located at 8 Catherine Street in the Town. Wastewater from both stations is then conveyed through a 300 mm forcemain to the Anger Avenue Wastewater Treatment Plant (WWTP).

Since construction of the Lakeshore Road SPS, several maintenance activities have been performed to prolong the station's operation; however, the facility is now reaching the end of its useful service life. The Lakeshore Road SPS and forcemain are in generally poor condition with various forcemain breaks occurring over recent years resulting in increased maintenance costs. Region operations staff are also faced with maintenance and safety issues as the site footprint is small and close to a busy road. In addition to the above concerns related to existing condition as well as operational and maintenance issues, the Region's 2016 Water and Wastewater MSP has identified growth within the area resulting in the need to increase pumping station capacity for the Lakeshore Road SPS.

A Schedule B Municipal Class Environmental Assessment Study (MCEA) was initiated to identify and assess viable alternatives for the upgrades at the Lakeshore Road SPS and select the preferred alternative.

### ES.2 Scope of Environmental Assessment Study

This MCEA was carried out in accordance with Schedule 'B' of the MCEA document (2000, as amended in 2007, 2011, and 2015; and considering the 2020 addendum currently under review). Schedule B projects are defined as having the potential for some adverse environmental effects and the proponent is required to undertake a screening process involving mandatory contact with directly affected public and relevant review agencies to ensure all are aware of the project and have opportunity to provide input and feedback.

The purpose of this MCEA is to determine the preferred alternative for the upgrades at the Lakeshore Road SPS.

### ES.3 Problem and Opportunity Statement

The focus of Phase One (1) of the MCEA process is the development of a problem/opportunity statement that identifies the opportunities and challenges that are being addressed. Based on the

Region's knowledge of the study area; this statement for the Lakeshore Road SPS MCEA is summarized as follows:

*"Identify and develop a preferred solution to meet future capacity requirements to the year 2041 at the Lakeshore Road SPS, while minimizing impacts to the natural, socio-cultural and technical environments."*

The Lakeshore Road SPS MCEA Problem and Opportunity statement considers the following strategy and goals:

- Consider all project risks, constraints and area specific issues;
- Provide a practical and construction design solution;
- Provide system capacity to meeting existing and projected growth needs to build-out;
- Minimize total capital, operational, maintenance and lifecycle costs; and
- Minimize environmental impacts (including natural, socio-cultural and socio-economic).

#### **ES.4 Study Area**

The study area is located in the Town of Fort Erie and is generally bounded by the site limits of the Lakeshore Road SPS and includes the existing forcemain alignment, up to where it ties into the sewer just before the Canadian Border Services Agency Plaza as shown in Figure ES1.

Detailed reviews of the study area were carried out to provide more information with respect to the natural environment, archaeological, cultural heritage and social characteristics that could be used to support the evaluation of the alternatives. The documents and information that were prepared under this MCEA include the following:

- Natural Environmental Assessment prepared by LGL Limited Environmental Research Associates (Appendix B);
- Stage 1 Archaeological Assessment prepared by Golder (Appendix C); and
- Cultural Heritage Landscapes & Built Heritage Resources assessment prepared by Golder (Appendix D).

It should be noted that the Region will be completing a Stage 2 archaeological assessment for this study prior to completing the detailed design. Aboriginal communities will be contacted to gauge interest in participating in the field investigations under the Stage 2 archaeological assessment.

The information from these reports was used to populate the detailed evaluation matrix (Section 7.6 and Table 7-8) and determine a preferred alternative solution.





Figure ES1 Study Area



## ES.5 Development of Servicing Strategies and Evaluation of Strategies

Alternatives to the Problem and Opportunity statement were developed through a sequential process, starting with identifying a preferred servicing approach or Strategy for the Lakeshore Road SPS catchment. The steps included the following:

**Step 1.** Develop long list of servicing strategies for the Lakeshore Road and Catherine Street SPSs Catchment (common strategies between both stations)

**Step 2.** Screen and evaluate the servicing strategies to identify the preferred

**Step 3.** Based on the preferred servicing strategy, develop alternative solutions for each individual station

**Step 4.** Screen and evaluate alternative solutions for each station

**Step 5.** Identify recommended solution for each station

The following servicing strategies were developed and considered under this study:

1. Continue to operate both Lakeshore Road and Catherine Street SPSs without significant modifications (Do Nothing)
2. Continue to operate both Lakeshore Road and Catherine Street SPSs (Status Quo)
3. Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS
4. Continue to operate Lakeshore Road SPS and decommission Catherine Street SPS
5. Decommission both stations and convey flow by gravity to the Anger Avenue WWTP

Each of the servicing strategies listed above were passed through a preliminary screening in which they were subjected to the following criteria:

- Does the servicing strategy align with the Problem and Opportunity statement?
- Is the servicing strategy feasible and reasonable?
- Is the servicing strategy economically viable and reasonable?

Following the screening of possible servicing strategies, the preferred strategies were identified to be:

**Servicing Strategy 2:** Continue to operate both Lakeshore Road and Catherine Street SPSs (Status Quo)

**Servicing Strategy 3:** Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS

These servicing strategies formed the basis for the development of the long list of alternative solutions.

## ES.6 Alternatives

Fifteen potential alternatives were identified as possible options for the Lakeshore Road SPS upgrades as described in Section 7. The long list of alternatives is detailed in the table below.

**Table ES1 Summary of Long Listed Alternatives**

| Long-Listed Alternative                                                                                                                  | Advantages                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Servicing Strategy 2: Continue to operate both Lakeshore Road and Catherine Street SPSs with upgrades or replacement (Status Quo)</b> |                                                                                                                                                                              |
| 2-i                                                                                                                                      | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Upgrade SPS at existing location                                                                     |
| 2-ii                                                                                                                                     | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot                                             |
| 2-iii                                                                                                                                    | <b>Lakeshore:</b> Upgrade SPS at existing location with outdoor generator and new forcemain<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot    |
| 2-iv                                                                                                                                     | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Relocate to Forsythe Street                                                                          |
| 2-v                                                                                                                                      | <b>Lakeshore:</b> Upgrade pump station at existing location<br><b>Catherine:</b> Relocate Catherine St SPS to the Parkway Southeast of Existing Site                         |
| 2-vi                                                                                                                                     | <b>Lakeshore:</b> Relocate Lakeshore Rd SPS west within vacant commercial property<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St                            |
| 2-vii                                                                                                                                    | <b>Lakeshore:</b> Relocate Lakeshore Rd SPS south to residential property<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot                 |
| 2-viii                                                                                                                                   | <b>Lakeshore:</b> Relocate Lakeshore Rd SPS north to the NPC Triangle<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot                     |
| 2-ix                                                                                                                                     | <b>Lakeshore:</b> Relocate Lakeshore Rd SPS to the south of the Peace Bridge<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot              |
| 2-x                                                                                                                                      | <b>Lakeshore:</b> Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot |

| Long-Listed Alternative                                                                                   | Advantages                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Servicing Strategy 3: Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS</b> |                                                                                                                                                                                                                                                        |
| <b>3-i</b>                                                                                                | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along Niagara Blvd to Forsythe St<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St                                                               |
| <b>3-ii</b>                                                                                               | <b>Lakeshore:</b> Decommission Lakeshore SPS and utilize existing gravity sewer under the CBSA Plaza to Forsythe Street<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St                                                                 |
| <b>3-iii</b>                                                                                              | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer under the CBSA Plaza to Catherine Street<br><b>Catherine:</b> Upgrade and expand pump station at existing locations (Catherine)                                               |
| <b>3-iv</b>                                                                                               | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot |
| <b>3-v</b>                                                                                                | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Gilmore Road<br><b>Catherine:</b><br>Construct new Catherine St pump station within the Gilmore Lodge property                       |

## ES.6 Analysis and Evaluation Alternatives

To identify the short list of alternative solutions to be carried forward to the detailed evaluation, each of the alternatives on the long list was subjected to the following preliminary screening criteria which were developed by the project team to reflect the major goals and objectives of the MCEA. The screening criteria applied to the long list of alternatives included the following:

- **Screening Criteria #1 - Effectiveness and Reliability**
  - Can it effectively and reliably meet 2041 capacity requirements?
- **Screening Criteria #2 - Compatibility with Existing System**
  - Is it compatible with the existing wastewater system, such that it will not require major changes if implemented?
- **Screening Criteria #3 - Implementation Challenges**

- Can it be implemented without facing major constraints or time delays, including regulatory, technical, land availability, environmental or social constraints?

Based on the results of the screening, seven (7) alternatives were carried forward for the detailed evaluation and are detailed in the table below.

**Table ES2 Summary of Short-Listed Alternatives**

| Long-List Alternative ID | Short-Listed Alternative ID for Detailed Evaluation | Description                                                                                                                                                                                                                                            |
|--------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-i                      | A                                                   | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Upgrade SPS at existing location                                                                                                                                               |
| 2-ii                     | B                                                   | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot                                                                                                                       |
| 2-iii                    | C                                                   | <b>Lakeshore:</b> Upgrade SPS at existing location with outdoor generator and new forcemain I<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot                                                                            |
| 3-i                      | D                                                   | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St                                                           |
| 3-iv                     | E                                                   | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot |
| 2-vii                    | F                                                   | <b>Lakeshore:</b> Relocate Lakeshore Rd SPS South to Residential Property<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot                                                                                           |
| 2-x                      | G                                                   | <b>Lakeshore:</b> Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot                                                                           |

## **ES.7 Preferred Alternative**

The preferred alternative includes upgrading the Lakeshore SPS within the existing footprint and constructing a new forcemain to the existing gravity sewer network, as shown in Figure ES.2. This option provides the most balanced solution and least impacts among all evaluation factors. This option provides the following:

- Removing the existing control building will enhance view of surrounding properties, reduce future operational and maintenance costs.
- Cost-effective alternative with the least schedule impact.
- Can accommodate future growth and servicing needs.



Figure ES2 Preferred Alternative





## ES.8 Public Consultation Process

Consultation with review agencies, stakeholders and the public are a necessary and important component of the MCEA process. Further documentation related to the consultation activities undertaken during this MCEA is included in Appendix A. The Region has met the MCEA consultation requirements within the following components for this project:

- Notice of Commencement and Public Information Centre (PIC)
- Direct Mailing to Stakeholders
- Project Website
- Hosting a PIC
- Agency Consultation
- Indigenous Communities' Consultation
- Notice of Completion

## ES.9 Implementation

The Region has outlined the commitments and/or mitigation measures that will be undertaken during the implementation of the preferred alternative as well as approvals that will be required to implement the preferred alternative. Commitments and mitigation measures have been identified and documented for the design, construction and post-construction and operation phases of the project.

Additionally, permits and approvals required for implementation have been identified from the following agencies:

- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Tourism, Culture and Sport (MTCS)
- Town of Fort Erie
- Niagara Parks Commission
- Niagara Region



# Notice of Completion

## Lakeshore Road Sewage Pumping Station

### Municipal Class Environmental Assessment

#### Town of Fort Erie

### The Study

Niagara Region has completed a Municipal Class Environmental Assessment Study to assess the preferred alternative for the required upgrades to the Lakeshore Road Sewage Pumping Station (SPS) located at 14A Lakeshore Road in the Town of Fort Erie. The Lakeshore Road SPS was commissioned in 1985 and has since undergone minor equipment replacements and various maintenance activities while continuing to service the community. Recent investigations indicate the station requires upgrades based on the infrastructure's deteriorating condition, high maintenance costs and to accommodate the projected population growth as indicated in the Niagara Region's ongoing 2021 Water and Wastewater Master Servicing Plan.

### Study Recommendations

In accordance with Ontario's Environmental Assessment Act, Niagara Region has planned this project under a Schedule "B" of the Municipal Engineers Association Class Environmental Assessment Process. A Public Information Center was held on Sept. 8, 2021, to present and obtain comments on the problem statement, identified solutions, and preliminary design concepts. Interested members of the public, local business communities, and agencies were encouraged to attend. Information pertaining to the Study was presented and interested members were encouraged to submit questions or concerns. Through an extensive evaluation process that included public engagement with local residents and businesses, the Town of Fort Erie and Niagara Region, a preferred solution has been identified. The study recommends upgrading the Lakeshore Road SPS at the existing site location with removal of the control building and addition of an outdoor generator.



## For More Information

A Project File Report, documenting the planning process undertaken, key elements of the preferred design is available for public review online at [niagararegion.ca/projects/lakeshore-rd-sps](http://niagararegion.ca/projects/lakeshore-rd-sps) and on display for review at the following location for 30 calendar days beginning on July 14, 2022 and ending on August 13, 2022.

The Project File Report will be made available for public review at the following locations during normal business hours:

### **Clerk's Department**

Niagara Region  
1815 Sir Isaac Brock Way, P.O. Box 1042  
Thorold, ON L2V 4T7  
**905 980-6000, ext. 3222**  
Monday-Friday 8:30 a.m. – 4:30 p.m.

### **Clerk's Department**

Town of Fort Erie  
1 Municipal Centre Dr  
Fort Erie, ON L2A 2S6  
**905 871 1600**  
Monday-Friday 8:30 a.m. – 4:30 p.m.

Written comments on this Project File should be submitted to:

### **Robert Stret**

Project Manager, Water and Wastewater Services  
Niagara Region  
3501 Schmon Pkwy., PO Box 1042  
Thorold, ON, L2V 4T7  
905-658-5451  
**Robert.Stret@niagararegion.ca**

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**amanda.beattie@gmblueplan.ca**

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive Environmental Assessment approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the Ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the Ministry is able to efficiently begin reviewing the request.

Requests should be sent by email or in writing to:

### **Minister of the Environment, Conservation and Parks**

Ministry of Environment, Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto ON M7A 2J3  
**minister.mecp@ontario.ca**

### **Director, Environmental Assessment Branch**

Ministry of Environment, Conservation and Parks  
135 St. Clair Ave. W, 1st Floor  
Toronto ON, M4V 1P5  
**EABDirector@ontario.ca**

Personal information collected or submitted in writing at public meetings will be collected, used and disclosed by members of Regional Council and Regional staff in accordance with the Freedom of Information and Protection of Privacy Act. The written submissions including names, contact information and reports of the public meeting will be made available. Questions should be referred to the Privacy Office at 905-980-6000, ext. 3779 or **FOI@niagararegion.ca**.

If you require any accommodations for a disability in order to attend and participate in meetings or events, please let us know in advance so that arrangements can be made in a timely manner. Please contact the Accessibility Advisory Coordinator at 905-980-6000 ext. 3252 or **accessibility@niagararegion.ca**.

This notice was first issued on July 14 2022.



## TABLE OF ACRONYMS

| Term of Acronym | Definition                                                  |
|-----------------|-------------------------------------------------------------|
| ANSI            | Areas of Natural and Scientific Interest                    |
| CBSA            | Canadian Border Services Agency                             |
| CHR             | Cultural Heritage Report                                    |
| CHVI            | Cultural Heritage Value or Interest                         |
| DFO             | Fisheries and Oceans Canada                                 |
| EAA             | Ontario's Environmental Assessment Act                      |
| EA              | Environmental Assessment                                    |
| ECA             | Environmental Compliance Approval                           |
| ESA             | Endangered Species Area                                     |
| ESR             | Environmental Study Report                                  |
| MBCA            | Migratory Bird Convention Act                               |
| MCEA            | Municipal Class Environmental Assessment Study              |
| MEA             | Municipal Engineers Association                             |
| MECP            | Ministry of the Environment, Conservation and Parks         |
| MHSTCI          | Ministry of Heritage, Sport, Tourism and Culture Industries |
| MNRF            | Ontario Ministry Natural Resources and Forestry             |
| MSP             | Master Servicing Plan                                       |
| MTO             | Ministry of Transportation                                  |
| NPC             | Niagara Parks Commission                                    |
| NPCA            | Niagara Peninsula Conservation Authority                    |
| OASD            | Ontario Archaeological Sites Database                       |
| OCP             | Odour Control Plan                                          |
| OP              | Official Plan                                               |
| PFR             | Project File Report                                         |
| PIC             | Public Information Centre                                   |
| PWWF            | Peak Wet Weather Flow                                       |
| PTTW            | Permit to Take Water                                        |

| Term of Acronym | Definition                 |
|-----------------|----------------------------|
| SAR             | Species at Risk            |
| SPS             | Sewage Pumping Station     |
| TDH             | Total Dynamic Head         |
| WWTP            | Wastewater Treatment Plant |

# 1 INTRODUCTION AND BACKGROUND

The Region of Niagara (the Region) retained GM BluePlan Engineering Limited (GM BluePlan) to complete a Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Lakeshore Road Sanitary Pumping Station (SPS). A related MCEA is also being completed under separate cover for the Catherine Street SPS, as described below.

The Lakeshore Road SPS is located at 14A Lakeshore Road in the Town of Fort Erie. The station was commissioned in 1985 and has since undergone minor equipment replacements and various maintenance activities. Currently, the flows from the Lakeshore Road SPS are conveyed through a 200 mm forcemain to the upstream Catherine Street SPS located at 8 Catherine Street in the Town of Fort Erie. Wastewater from both stations is conveyed through a 300 mm forcemain to the Anger Avenue Wastewater Treatment Plant (WWTP). The Region is responsible for operation and maintenance of the Lakeshore Road and Catherine Street SPSs and forcemains, trunk sewers, and the Anger Avenue WWTP.

The 2021 Water and Wastewater Master Servicing Plan (MSP) identified deficiencies at the Lakeshore Road SPS as the 2051 design allowance PWWF and the 2051 5-year storm PWWF exceeds the station's firm capacity. Additionally, the 2051 storage needs also exceed the available storage at the station.

The Lakeshore Road SPS discharges to the Catherine Street SPS and contributes to its flow; therefore, the Class EAs for the Lakeshore Road SPS and the Catherine Street SPS are interconnected. Each Project File report discusses the interdependencies between stations, while focusing on site specific information for the respective stations.

## 1.1 Study Purpose and Objectives

Since construction of the Lakeshore Road SPS, several maintenance activities have been performed to prolong the station's operation; however, the facility is now reaching the end of its useful service life. The Lakeshore Road SPS and forcemain are in generally poor condition with various forcemain breaks occurring over the recent years resulting in increased maintenance costs. Region operations staff are also faced with maintenance and safety issues as the site footprint is small and close to a busy road.

In addition to the above concerns related to existing condition as well as operational and maintenance issues, the Region's 2021 Water and Wastewater MSP has identified growth within the area resulting in the need to increase pumping station capacity for the Lakeshore Road SPS.

The Region is completing this MCEA study to determine the most feasible way to address concerns with age, condition, and safety, and to address the need to increase pumping capacity of the Lakeshore Road SPS.



## 1.2 Project File Outline

Documentation of the Schedule 'B' MCEA process is contained within this Project File. Key elements of the MCEA process, as documented in this report, include:

- Section 2 details the MCEA process.
- Section 3 defines the MCEA's problem and opportunity statement.
- Section 4 describes the MCEA study area.
- Section 5 describes policies and legislations that are relevant to the completion of this MCEA.
- Section 6 describes the existing conditions and design basis for the SPS and forcemain
- Section 7 summarizes the alternative solutions, the evaluation processes and the preferred solution.
- Section 8 summarizes the implementation plan, potential impacts and mitigation measures for the recommended solution.
- Section 9 describes the public and agency consultation process undertaken as part of the MCEA.
- Section 10 details the permits and approvals required to implement the preferred solution.
- Section 11 presents a summary of finding.

## 2 CLASS ENVIRONMENTAL ASSESSMENT PROCESS

This MCEA was completed as a Schedule 'B' undertaking in accordance with the requirements of the Municipal Class Environmental Assessment process (2000, as amended in 2007, 2011, and 2015; and considering the 2020 addendum currently under review). Schedule B projects are defined as having the potential for some adverse environmental effects and the proponent is required to undertake a screening process involving mandatory contact with directly affected public and relevant review agencies to ensure all are aware of the project and have opportunity to provide input and feedback. The MCEA process includes public and review agency consultation, evaluation of alternatives, an impact assessment of the recommended alternative, and identification of measures to mitigate potential adverse effects.

### 2.1 Class Environmental Assessment Act

Ontario's *Environmental Assessment Act* (EAA) was passed in 1975 and proclaimed in 1976, with municipal projects subject to the EAA in 1981. The EAA requires proponents to examine and document the environmental effects that could result from projects or activities and their alternatives.

The EAA's comprehensive definition of the environment is:

- Air, land or water;
- Plant and animal life, including human life;
- The social, economic and cultural conditions that influence the life of humans or a community;
- Any building, structure, machine or other device or thing made by humans;

- Any solid, liquid, gas, odour, heat, sound, vibration, or radiation resulting directly or indirectly from human activities; and,
- Any part of combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.

The purpose of the EAA is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management of the environment in Ontario (RSO1990, c.18, s.2). An EAA must also ensure that decisions result from a rational, objective, transparent, replicable, and impartial planning process.

In 1987, the Minister of the Environment approved Class Environmental Assessments as a means for municipal projects of similar nature and with predictable and mitigable impacts to meet the requirements of Ontario's EAA. MCEAs are streamlined step-by-step approaches which when followed meet the five key principles of the EAA:

- Consultation with affected parties. Consultation with the public and government review agencies is an integral part of the planning process. Consultation allows the proponent to identify and address any concerns cooperatively before final decisions are made. Consultation should begin as early as possible in the planning process.
- Consideration of a reasonable range of alternatives. Alternatives may include alternative solutions and alternative design concepts (alternative methods)" of implementing the preferred solution. The "do nothing" alternative must also be considered.
- Identification and consideration of the effects of each alternative on all aspects of the environment. These aspects include the natural, social and cultural, technical and economic environments.
- Systematic evaluation of alternatives in terms of their advantages and disadvantages to determine their net environmental effects. The evaluation considers the potential effects of each alternative relative to the other to support sound decision making and identification of a recommended solution.
- Provision of clean and complete documentation of the planning process followed to allow "traceability" of decision-making with respect to the project. The planning process must be documented in such a way that it may be repeated with similar results.

This project is subject to the Municipal Engineers Association (MEA) MCEA process, approved in 1987, and revised and updated in 1993, 2000, 2007, 2011, 2015, and recent 2020 addendums are currently under review

## 2.2 Principals of Environmental Planning

The EAA sets a framework for a rational, objective, transparent, replicable and impartial planning process based on the following five key principles:

- **Consultation with affected parties.** Consultation with the public and government review agencies is an integral part of the planning process. Consultation allows the proponent to identify and address any concerns cooperatively before final decisions are made. Consultation should begin as early as possible in the planning process.

- **Consideration of a reasonable range of alternatives.** Alternatives include functionally different solutions, “alternatives to” the proposed undertaking and “alternative methods” of implementing the preferred solution. The “do nothing” alternative must also be considered.
- **Identification and consideration of the effects of each alternative on all aspects of the environment.** These aspects include the natural, social and cultural, technical and economic environments.
- **Systematic evaluation of alternatives in terms of their advantages and disadvantages to determine their net environmental effects.** The evaluation considers the potential effects of each alternative relative to the other to support sound decision making and identification of a recommended solution.
- **Provision of clean and complete documentation of the planning process followed to allow “traceability” of decision-making with respect to the project.** The planning process must be documented in such a way that it may be repeated with similar results.

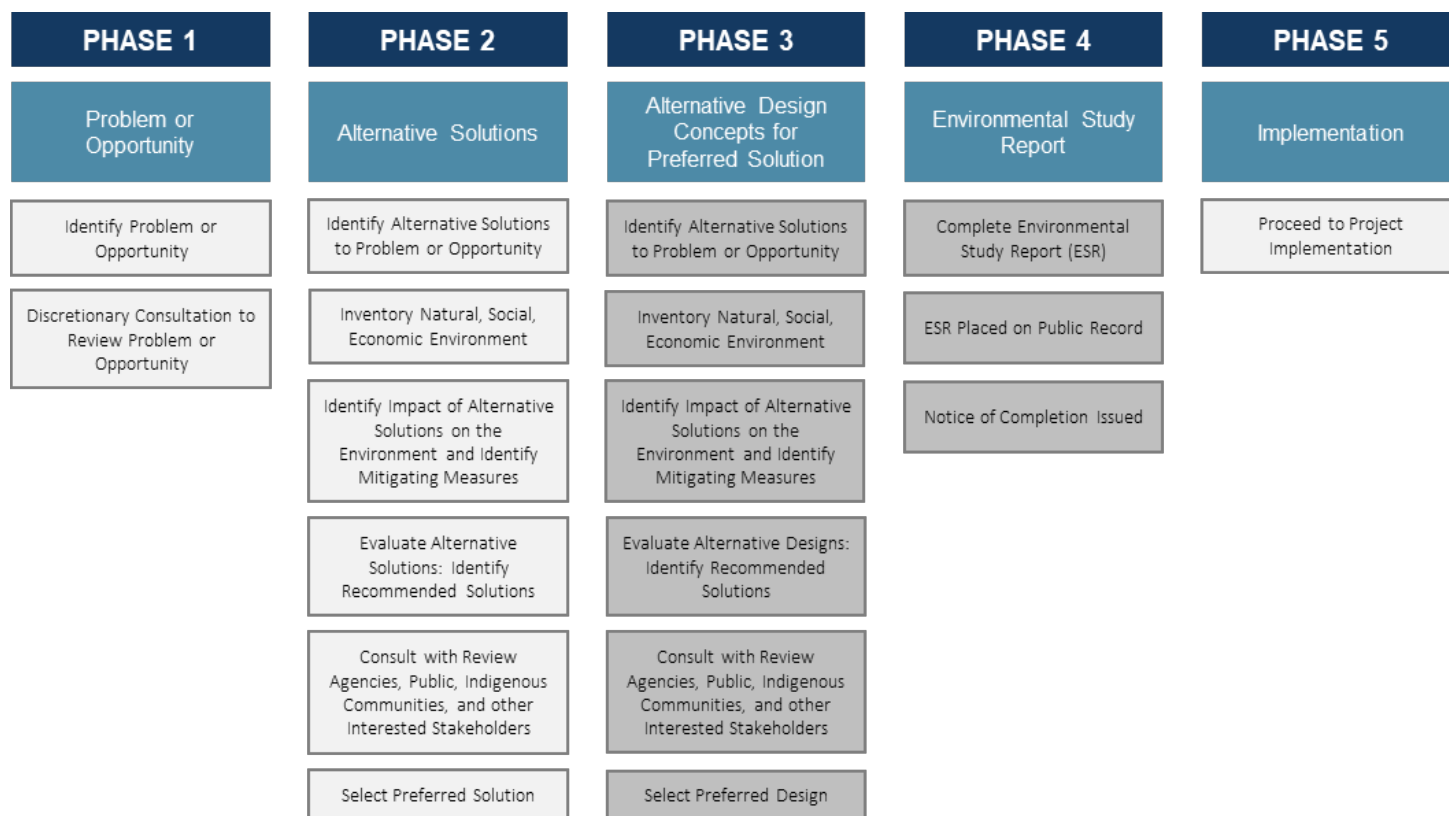
### 2.3 Class Environmental Assessment

The MCEA, prepared by the MEA, outlines the procedures to be followed to satisfy MCEA requirements for water, wastewater, stormwater, road, and transit projects.

The process includes five phases, described below and illustrated in Figure 2-1, integrating consultation with the public, review agencies, Indigenous Communities, and other interested stakeholders throughout the process:

- **Phase 1:** Problem or Opportunity Definition;
- **Phase 2:** Identification and Evaluation of Alternative Solutions to determine a preferred solution while taking input from the public and other stakeholders into consideration;
- **Phase 3:** Examination of Alternative Design Concepts (i.e., Alternative Methods) of implementation of the preferred solution while taking input from the public and other stakeholders into consideration;
- **Phase 4:** Documentation of the MCEA process in the form of an Environmental Study Report (ESR) for a Schedule C and a Project File Report for a Schedule B, for public review; and
- **Phase 5:** Implementation and Monitoring.





**Figure 2-1 Outline of the MEA MCEA Process**

Projects subject to the MCEA process are classified into the following four “schedules” depending on the degree of the expected impacts.

**Schedule ‘A’** projects are minor or emergency operational and maintenance activities and are approved without the need for further assessment. These projects are typically smaller in scale and do not have a significant environmental effect.

**Schedule ‘A+’** projects are also pre-approved; however, the public is to be advised prior to the project implementation. Although projects of this class do not usually have the potential for adverse environmental impacts, they tend to be broader in scale in comparison to Schedule ‘A’ projects.

**Schedule ‘B’** projects require a screening of alternatives for their environmental impacts and Phases 1 and 2 of the MCEA planning process must be completed. The proponent is required to consult with the affected public, review agencies, Indigenous Communities, and other interested stakeholders. If there are still outstanding issues related to Indigenous and treaty rights not resolved through discussion with the project team, requests may be made to the Minister of the Environment for a Section 16 Order. A Section 16 Order, formerly known as a Part II Order or a “bump up”, requires the project to undergo a Schedule ‘C’ MCEA or an Individual EA if the request is approved. Provided

that no significant impacts are identified and no requests for a Section 16 Order are received, Schedule 'B' projects are approved, and work may proceed directly to implementation.

**Schedule 'C'** projects must satisfy all five phases of the MCEA process. These projects have the potential for greater environmental impacts. Phase 3 involves the assessment of alternative methods of carrying out the project, as well as public consultation on the preferred conceptual design. Phase 4 normally includes the preparation of an ESR that is filed for public review. Provided no significant impacts are identified, and no requests for a Section 16 Order are received, Schedule 'C' projects are approved, and work can proceed to implementation.

Given the nature of this project, the MCEA for the Lakeshore Road SPS Upgrades is classified as a Schedule 'B' undertaking and includes Phases 1 and 2 of the MCEA process.

## 2.4 Notice of Completion

At the conclusion of Phase 2 of the MCEA process for Schedule B projects, a Project File is prepared and a Notice of Completion issued. The Project File report (PFR) for the Lakeshore Road SPS Environmental Assessment Study documents the decision-making process during the MCEA. The Notice of Completion of this MCEA (issued on July 14, 2022) notifies members of the public and agencies that the PFR would be available for public review for a thirty-day period. During the 30 day review period the PFR was made available for public review at the following locations during normal business hours:

Clerk's Department  
Regional Municipality of Niagara  
1815 Sir Isaac Brock Way, P.O. Box 1042  
Thorold, ON L2V 4T7  
Tel: (905) 980-6000, ext. 3222  
Monday-Friday 8:30 a.m. – 4:30 p.m.

Clerk's Department  
Town of Fort Erie  
1 Municipal Centre Drive  
Fort Erie, ON, L2A 2S6  
Tel: (905) 905-871-1600  
Monday-Friday 8:30 a.m. – 4:30 p.m.

A copy of the Notice is included in Appendix A of this Project File.

## 3 PHASE 1 – PROBLEM AND OPPORTUNITY

Phase 1 of the MCEA planning process requires the proponent of an undertaking to first document factors leading to the conclusion that the improvement is needed and develop a clear statement of the problem/opportunity to be investigated.

The problem and opportunity statement for the Lakeshore Road SPS MCEA has been defined as follows:

“Identify and develop a preferred solution to meet future capacity requirements to the year 2041 at the Lakeshore Road SPS, while minimizing impacts to the natural, socio-cultural and technical environments.”

The MCEA will aim to achieve the following goals:

- Consider all project risks, constraints and area specific issues;
- Provide a practical and construction design solution;
- Provide system capacity to meeting existing and projected growth needs to build-out;
- Minimize total capital, operational, maintenance and lifecycle costs; and
- Minimize environmental impacts (including environmental, technical, operational, social, and cultural).

This framework will be used to generate alternative solutions that address the problem and opportunity statement needs and applied to the evaluation process. In particular, the alternatives will be evaluated based on a multiple bottom-line approach that will include environmental, technical, operational, social and cultural considerations.

## **4 STUDY AREA OVERVIEW**

### **4.1 Lakeshore Road SPS Study Area**

The study area for the Lakeshore Road SPS is located within the Town of Fort Erie as illustrated in Figure 4-1. The study area is bounded by the existing site location which is surrounded by residential property and landscaping to separate the SPS site and residential property. The study area for Lakeshore also includes the SPS forcemain which is located within the Lakeshore Road right-of-way.

The catchment area for the Lakeshore Road SPS and the Catherine Street SPS is illustrated in Figure 4-3. Flows from the Lakeshore Road SPS are directed north to the Catherine Street SPS, then both flows are conveyed to the Anger Avenue WWTP.

Because the Catherine Street SPS receives flow from the Lakeshore Road SPS, the two Study Areas are connected and for purposes of this MCEA have been considered jointly where relevant.

### **4.2 Catherine Street SPS Study Area**

The Study area for Catherine Street SPS is located within the Town of Fort Erie as illustrated in Figure 4-2. The study area is bounded by the existing Catherine Street SPS site and the adjacent lot to the east of the existing site.

The study area is bounded by surrounding residential properties and the Niagara Boulevard. The catchment area for the Catherine Street SPS is illustrated in Figure 4-3. As mentioned, Lakeshore flows are directed to the Catherine Street SPS and the combined flow is conveyed to the Anger Avenue WWTP.





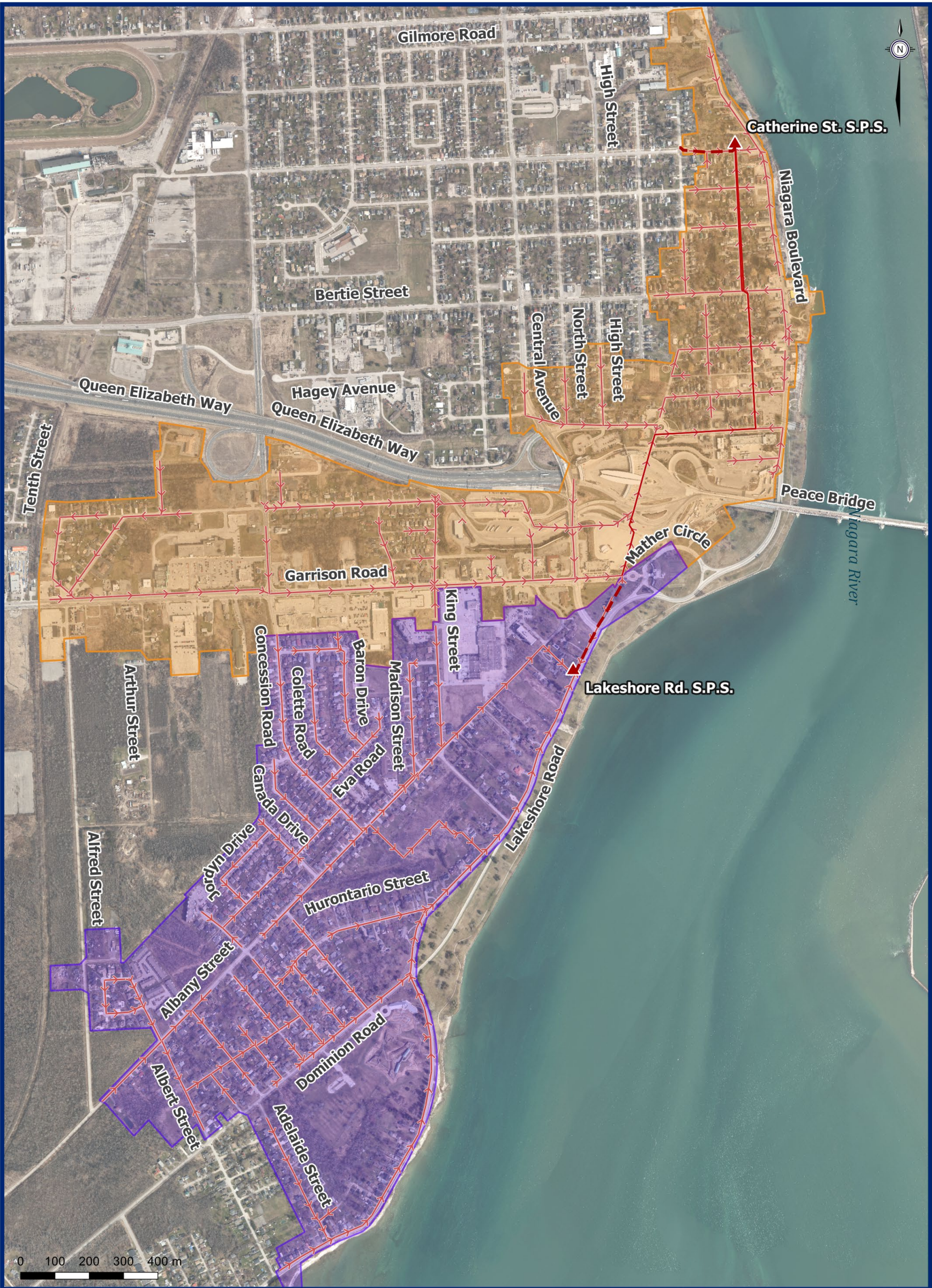
Figure 4-1 Lakeshore Road SPS Study Area Boundary





Figure 4-2 Catherine Street SPS Study Area Boundary





Niagara Region

Lakeshore Rd. & Catherine St.  
S.P.S. Environmental Assessment

Sanitary Network

- Sanitary Pumping Stations
- Forcemains
- Gravity Mains

Connecting Gravity Mains

Catchment Areas

- Catherine St. S.P.S.
- Lakeshore Rd. S.P.S.

Alternative A

Figure 4-3 Lakeshore Road and Catherine Street SPS Catchment Areas



## 5 OVERVIEW OF RELATED STUDIES AND POLICIES

The purpose of this section is to describe policies and legislation that are relevant to the completion of this MCEA. Each is described below.

### 5.1 Niagara Region Official Plan

The Niagara Region Official Plan (OP) is a set of policies that define how Niagara will use its available land to shape the physical, economic, and social development of the Region over the next 30 years. The document describes the Region's objectives for development and conservation, as well as policies that implement provincial legislation and provide planning context to lower tier municipalities. The OP allows the Region to:

- Determine how and where growth will happen, shaping Niagara into the community we want
- Make sure Niagara has an adequate and diverse supply of attainable housing
- Plan for future infrastructure needs and ensure they are properly funded
- Create the right conditions to attract and retain jobs in Niagara
- Help protect Niagara's natural environment and address changing climate through policies

The OP includes land-use policies that cover topics including Niagara's natural environment, land needs, growth allocations, housing, transportation, urban design, employment lands and agriculture. It also establishes the foundation for population and employment growth in the Region as well as urban boundaries.

The Region's 2014 OP has been updated and is currently under public review. The new 2022 OP is expected to be finalized based on public comments by June 2022.

### 5.2 Town of Fort Erie Official Plan

Similar to the Region OP, the Town of Fort Erie OP is a long-range planning document that guides, through the use of land designations and policy, how and where the Town will grow and develop for a 20-year time horizon. The Town's OP is aligned with the Regional OP and was approved by the Region in 2011.

The Town's OP identifies where residential, open space, commercial and industrial and institutional uses can be located and how such uses can develop. The OP identifies important natural heritage features and contains policies to protect or conserve these features. Lastly, the Plan also provides higher level policy guidance on servicing for development, including roads, transportation, archaeological recourse, built heritage, aggregate and petroleum resources, as well as application processing policies.

### 5.3 Water and Wastewater Master Plan

The Region's most recent Water and Wastewater MSP was completed in 2021. The aim of the study was to complete a review of the entire sanitary sewer system, including linear infrastructure and facilities. As part of the study, the Regions' sanitary system was assessed under existing and future



conditions, to identify opportunities and constraints and to accommodate further population growth expected by 2051 and beyond.

The MSP identified deficiencies at the Lakeshore Road SPS as the 2051 design allowance PWWF and the 2051 5-year storm PWWF exceeds the station's firm capacity. Additionally, the 2051 storage needs also exceed the available storage at the station.

## 6 EXISTING CONDITIONS

The following provides an overview of the existing and planned land uses, policies affecting the study area, and planning and servicing considerations that could potentially affect future infrastructure improvements.

### 6.1 Existing Facility

The Lakeshore Road SPS facility was constructed in 1984 and since its construction has not undergone any significant capital upgrades. The Lakeshore Road SPS consists of three (3) submersible pumps, one duty, one standby and a third pump which is dedicated to emergency bypass operations via a dedicated emergency bypass forcemain. The two (2) wet well pumps and process valves are housed within a 3.4 m (length) by 2.3 m (width) by 3.1 m (height) wet well structure and conveys pumped wastewater through the 3.4m (length) by 2.3 m (width) bypass/overflow chamber to the existing 200 mm diameter. Lastly, the bypass pump is located within the bypass/overflow chamber and discharges through a 300 mm forcemain which outlets to the Niagara River.

The existing firm capacity of the main duty pumps is 44 L/s at 10.4 m total dynamic head (TDH) with an actual operational firm capacity of 67 L/s. The overflow pump capacity is rated at 152 L/s at 5.2 m TDH.

The existing control building consists of a one-story superstructure that houses the electrical and control equipment and a natural gas standby power generator. The existing site limit is very tight and measures 12 m long by 12 m wide and is surrounded by adjacent residential properties on all three sides. There is a small 3.2 m wide by 6.4 m long asphalt driveway outside the control building but is not usually used for parking due to its limited space.

Since its construction, there have been a number of upgrades and maintenance/operation issues that have been addressed, however the station is now reaching the end of its useful life. The station's forcemain and process piping are in poor condition, with the forcemain experiencing breaks over the past few years. Additionally, the station experiences frequent power outages as the natural gas generator has reached the end of its service life. There are various health and safety issues for the Region's maintenance staff as the station's property limits are confined and very close to Lakeshore Road.

## 6.2 Existing Wastewater System and Connection to Catherine St SPS

The existing Lakeshore road station conveys its flows through a 200 mm diameter forcemain which travels along Lakeshore Road and continues through a grassed field just south of the Canadian Border Services Agency (CBSA) plaza and discharges to a maintenance hole. The receiving sewer continues under the CBSA plaza towards the Peace Bridge and ultimately conveys the wastewater through a 600 mm sanitary sewer to a manhole fronting Catherine Street SPS. From the Catherine Street SPS, the cumulative flows are then conveyed to the Anger Avenue WWTP through a 300 mm forcemain.

The Catherine Street SPS has a rated capacity of 151.4 L/s with an actual operational capacity of 150.8 L/s. The Catherine Street SPS conveys its flows (including Lakeshore Road SPS flow's) to the Anger Avenue WWTP through a 250 mm diameter forcemain. The Anger Avenue WWTP is located at 1 Anger Avenue and services the eastern part of the Town of Fort Erie. The WWTP is considered a conventional facility with a current rated capacity of 24.5 MLD

## 6.3 Land Uses

As shown in Figure 6-1, the lands adjacent to the Lakeshore Road SPS site are largely urbanized residential. The SPS site is located directly off Lakeshore Road and is immediately adjacent to residential homes located on the north, east and west sides.

The project area is located within the Niagara River watershed which is considered to be within the Niagara River Remedial Action Plan (RAP) boundaries and the Niagara River Peninsula Conservation Authority (NPCA) jurisdiction.

## 6.4 Existing Municipal Infrastructure

There are existing watermains, stormwater sewers and sanitary sewers within the study area; see Figure 6-2 for details. There is an easement between addresses #14 and #16 Lakeshore Road that has a 300 mm municipal sanitary sewer and a 400 mm watermain flowing east towards the Lakeshore SPS property. The municipal 300 mm sanitary sewer changes to a 400 mm sanitary through the SPS site and discharges into a MH fronting the station. The 400 mm watermain continues to flow east through the SPS site and then south along Lakeshore Road. There is also a 200 mm watermain that flows along Lakeshore Road that fronts the station. There is a 300 mm sanitary sewer that flows south towards the pumping station and discharges into a MH fronting the station (750 mm inlet sewer). The existing storm system starts a little north of the SPS and flows north past Central Avenue and discharges east through a 750 mm storm sewer towards the Niagara River.





Figure 6-1 Land Use Map





Figure 6-2 Existing Municipal Infrastructure



## 6.5 Planning and Servicing Considerations

As described in the Town of Fort Erie OP, the Lakeshore SPS site is located within the Gateway Secondary Plan Area. The overall study area consists of the following designated land uses: Environmental Protection, Low Density Residential, Medium Density Residential, Urban Residential, Open Space and Commercial. Much of the study area for the Lakeshore Road SPS is residential.

Planning projections, including current and future flows to the Lakeshore Road SPS were reviewed as part of the MCEA to provide flows for the detailed design of the station. Mapping of the study area land use is provided in Figure 6-1.

Confirmation of the operational firm capacity of the station was completed using pumping station performance test results from March 25, 2021. For this analysis, the firm capacity of the Lakeshore Road SPS was assumed to be 63.7 L/s, the average of the pump tests for Pump 2.

A build-out potential analysis was also completed, with the findings detailed in the table below.

**Table 6-1 Build Out Potential Analysis Area and Population Projections**

| Scenarios | Area (ha) | Population  |            |       |
|-----------|-----------|-------------|------------|-------|
|           |           | Residential | Employment | Total |
| Existing  | 150.3     | 2,526       | 457        | 2,983 |
| 2041      |           | 2,785       | 475        | 3,260 |
| Build Out |           | 2,866       | 478        | 3,344 |

Build-out flows were estimated based on the growth projections identified above, Table 6-2 provides a summary of the projected future design flows.

**Table 6-2 2021 MSP Existing, 2051, and Build Out Design Storm Flows**

| Lakeshore SPS                | Peak Flow (L/s) |               |           |
|------------------------------|-----------------|---------------|-----------|
|                              | Existing        | Future (2051) | Build Out |
| Operational Capacity         | 63.7            |               |           |
| PDWF                         | 17              | 20            | 21        |
| RDII                         | 60              | 60            | 60        |
| Design Peak Wet Weather Flow | 77              | 81            | 82        |



| Lakeshore SPS             | Peak Flow (L/s) |               |           |
|---------------------------|-----------------|---------------|-----------|
|                           | Existing        | Future (2051) | Build Out |
| <b>2-yr Design Storm</b>  | 124             | 128           | 129       |
| <b>5-yr Design Storm</b>  | 178             | 181           | 182       |
| <b>10-yr Design Storm</b> | 207             | 211           | 212       |

As these results demonstrate, the 63.7 L/s operational capacity of the pump does not meet the existing design peak wet weather flows based on the recent design criteria set in the 2021 MSP. Lakeshore Road SPS was recommended for high priority capacity upgrades as the 2051 design allowance PWWF and the 2051 5-year storm PWWF exceed the station's firm capacity, and the 2051 storage needs also exceed the available storage at the station.

It should be noted that the build out design PWWF is not significantly different from the 2051 design PWWF, and as such, it was recommended that the station be upgraded to 82 L/s to support future 2051 and build out design PWWF. This recommendation was made with the understanding that inflow and infiltration (I/I) reduction activities would be undertaken within the catchment to address the high 5-year design storm PWWF.

## 6.6 Physiography

The Fort Erie area of Niagara Falls is within the Haldimand Clay Plan physiographic region. The Haldimand Clay Plain extends south from the Niagara Escarpment to Lake Erie. The region is made up of a series of parallel belts or terraces with the highest elevation adjacent to the Escarpment. The overburden material increases in depth towards the south and consists of lacustrine clays, which were deposited during the period of inundation by pro-glacial Lakes Warren and Lundy. Higher relief and ridges in the west generally direct drainage to the east, including Twenty Mile Creek and the Welland River. Some watercourses, such as Twenty Mile Creek, have carved deep valleys through the Escarpment and drain into Lake Ontario.

The study area itself has no major creeks or water bodies, with the exception of bordering on the Niagara River. The existing sewer that connects the Catharine and Lakeshore SPS is a 600 mm sanitary sewer that discharges to a manhole fronting Catherine Street SPS and no creeks or streams are noted along the path of the sanitary sewer.

## 6.7 Existing Road Network and Transportation Infrastructure

The SPS site is located directly off Lakeshore Road, which is a four-lane roadway that travels along the Niagara River. Lakeshore Road passes under the Peace Bridge, which is an international bridge between Canada and the United States. There are no major roads or Regional roads within the study area.

## 6.8 Existing Utilities

The existing Lakeshore Road SPS has a gas line in front of the station within the right-of-way approximately 100mm in diameter. Going north of the station, the gas line continues to follow the neighbouring property lines on Lakeshore Road and turns off Central Avenue. On the existing station site, there is a hydro pole located on the corner of the site that supplies power to the station underground, and also travels north and south of the station overhead. At the intersection of Central Avenue and Lakeshore Road, there is NPC underground electrical that feeds from the corner light standard. All underground electrical nearing the west corner of Lakeshore Road and Central Avenue feed into junction boxes located within a median strip. From the median, the electrical continues to feed underground and overhead within the grassed area to all of the light standards along Lakeshore Road.

The Region will undertake a subsurface utility engineering (SUE) investigation of the preferred alternative during the detailed design phase of the project.

## 6.9 Natural Heritage

A Natural Heritage review of the study area was conducted by LGL Environmental Research Associates with site investigations occurring in August 2021 and November 2021. Findings from the review are detailed in the sections below with mapping of the identified significant features in Figure 6-3. For further details of the Natural Heritage review, please refer to Appendix B.

### 6.9.1 Designated Natural Areas

The study area was screened for any designations within various local, Region and Provincial policies. The following sections detail the applicable designation and the findings.

#### 6.9.1.1 Areas of Natural and Scientific Interest

There are no significant Areas of Natural and Scientific Interest (ANSI) located within the study area. No further consideration of impact to ANSI is required.

#### 6.9.1.2 Significant Wetlands

No wetland features have been identified by the Ministry of Natural Resources and Forestry (MNRF) within the study area or within 120m of the study area. No further consideration of impacts to significant wetlands is required.

#### 6.9.1.3 Significant Woodland

Neither the Region OP nor the Town of Fort Erie OP identified significant woodlands within the project area. No further consideration of impact to significant woodland is required.

#### 6.9.1.4 Significant Valley land

The Region OP defines significant nature heritage features to include significant valley lands as ecologically important in terms of features, functions, representation or amount and contributing to the quality, diversity, ecological health and integrity of the Core Natural Heritage System. The Niagara River is significant and identified as part of an Environmental Conservation Area.



#### **6.9.1.5 Environmentally Sensitive Areas**

The Town of Fort Erie's OP and Natural Area Inventory and the Region's OP do not identify any environmentally sensitive areas in proximity to the project study area.

#### **6.9.2 Wildlife and Wildlife Habitat**

A total of 129 bird species were identified in proximity to the study area through a review of secondary sources. The sources/data records incorporate areas that are outside of the immediate study area thus not all species would be found within 120 m of the adjacent lands.

Fourteen of the identified bird species are listed under the Fish and Wildlife Conservation Act and 99 species are protected under the Migratory Bird Convention Act (MBCA). The study area falls within Environment Canada's Nesting Zone C1. To comply with the requirements of MBCA it is recommended that disturbance of vegetation where birds may be nesting should be completed outside of the window of March 31 to August 31 to avoid breeding season.

#### **6.9.3 Fisheries and Aquatic Habitat**

A review of background information did not identify any streams within the study area or within 120m of the study area as fish habitat.

#### **6.9.4 Species at Risk**

A search for DFO's aquatic species at Risk mapping was conducted for the Study area. No critical habitat for aquatic Species at Risk (SAR) was identified, however there is potential for the Northern Lamprey to occur within one (1) km of the project area.

Although records of SAR bats were not found within the study area, candidate material roost habitat for SAR bats is available wherever suitable cavities are found in mature trees. Therefore, the potential effects of any proposed tree removal can be mitigated through the use of timing windows.

#### **6.9.5 Tree Inventory**

A tree inventory of the Lakeshore Road SPS and along the existing forcemain route was completed on November 8, 2021. The investigation focused on the proposed disturbance limits and extended to within a 10 m buffer.

The survey identified 80 trees within the Lakeshore Road study area limits, which ranged in size from 1 to 87 cm DBH and are in good to fair condition. No species at risk or rare tree species were observed within the limits of the tree survey conducted. Mapping of the tree survey can be found in Figure 6-4.





Figure 6-3 Significant Natural Features





Figure 6-4 Tree Inventory Surrounding the Lakeshore Road SPS

## 6.10 Archaeological Assessment

A Stage 1 archaeological assessment was conducted by Golder Associates Ltd for this MCEA study to determine whether the study area has archaeological potential and the need for a Stage 2 archaeological assessment. The assessment found that there are six (6) registered archaeological sites located within 300 m of the Lakeshore Road SPS study area which have potential for the recovery of both Indigenous and Euro-Canadian archaeological resources. The was determined based on the proximity of previously registered archeological sites, particularly the Peace Bridge Site / Sensitivity Zone as well as water sources, soil types, historical settlements, historical transportation routes, and the Town's OP archaeological potential mapping. Areas that require Stage 2 archaeological assessment are mapped on Figure 6-5. For further details on the Stage 1 archaeological assessment, please refer to Appendix C.

The Region will be undertaking the Stage 2 archaeological assessment under the detailed design project which will be completed prior to finalizing detailed design. Through this process, First Nation communities will be contacted to participate in any of the field work that will be undertaken as part of the Stage 2 assessment. If archaeological findings are present at the site, the Region will implement mitigating measures to avoid and or mitigate impacts in accordance with MHSTCI requirements.

## 6.11 Cultural Heritage Resources

A Cultural Heritage Screening Report was completed for the Catherine Street and Lakeshore Road SPS by Golder Associates Ltd. Based on the MHSTCI 2016 *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist of the Non-Specialist* (MHSTCI Checklist), background research and desktop analysis of the study area identified the following areas having Cultural Heritage Value or Interest (CHVI):

- One property located at 8 Lakeshore Road with buildings or structures 40 or more years old of potential cultural heritage value or interest.
- Mather Arch Park and the Niagara River within the study area are potential cultural heritage landscapes.

For further details on the report, please refer to Appendix C.



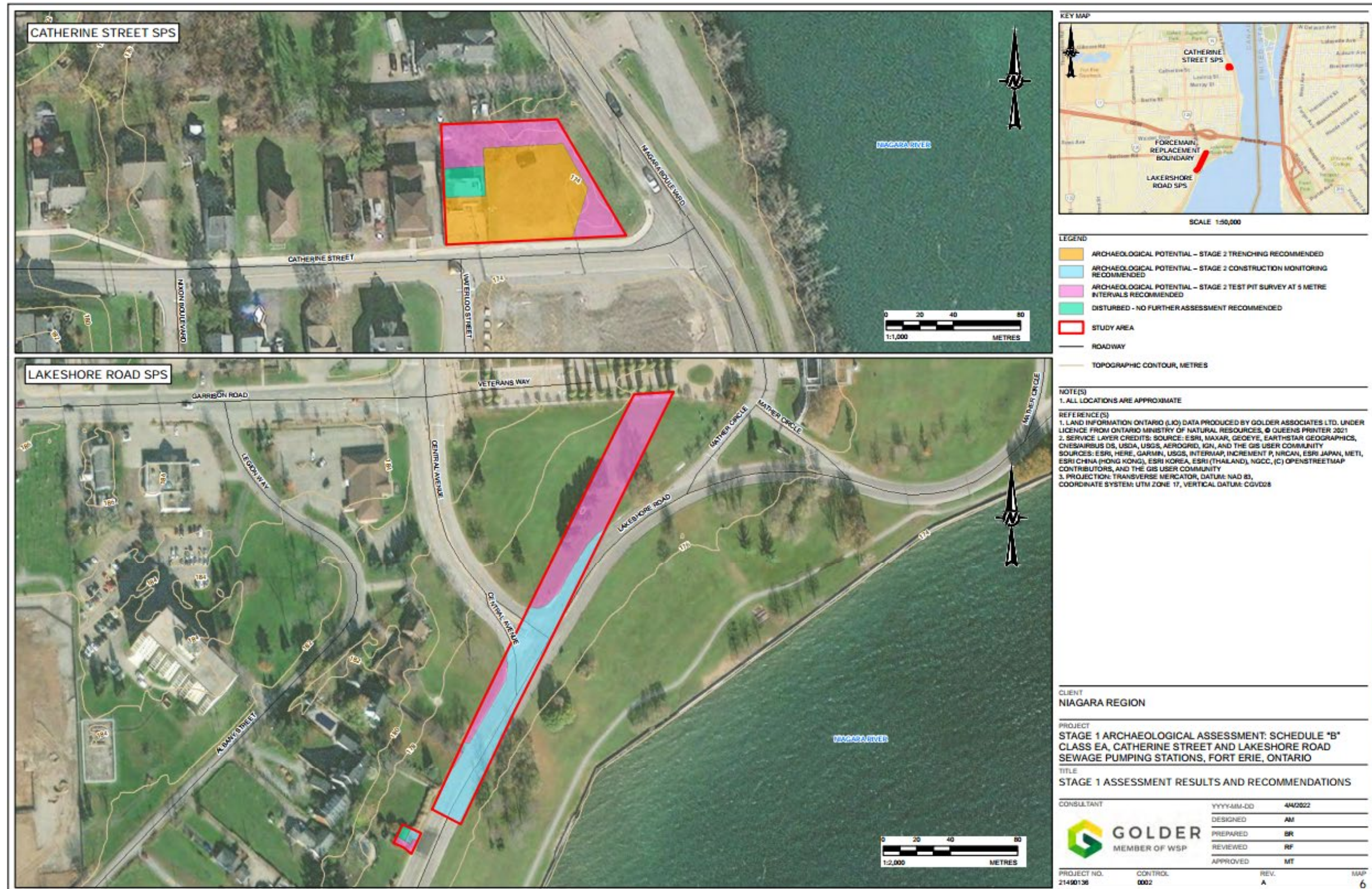


Figure 6-5 Stage 1 Archaeological Assessment Findings



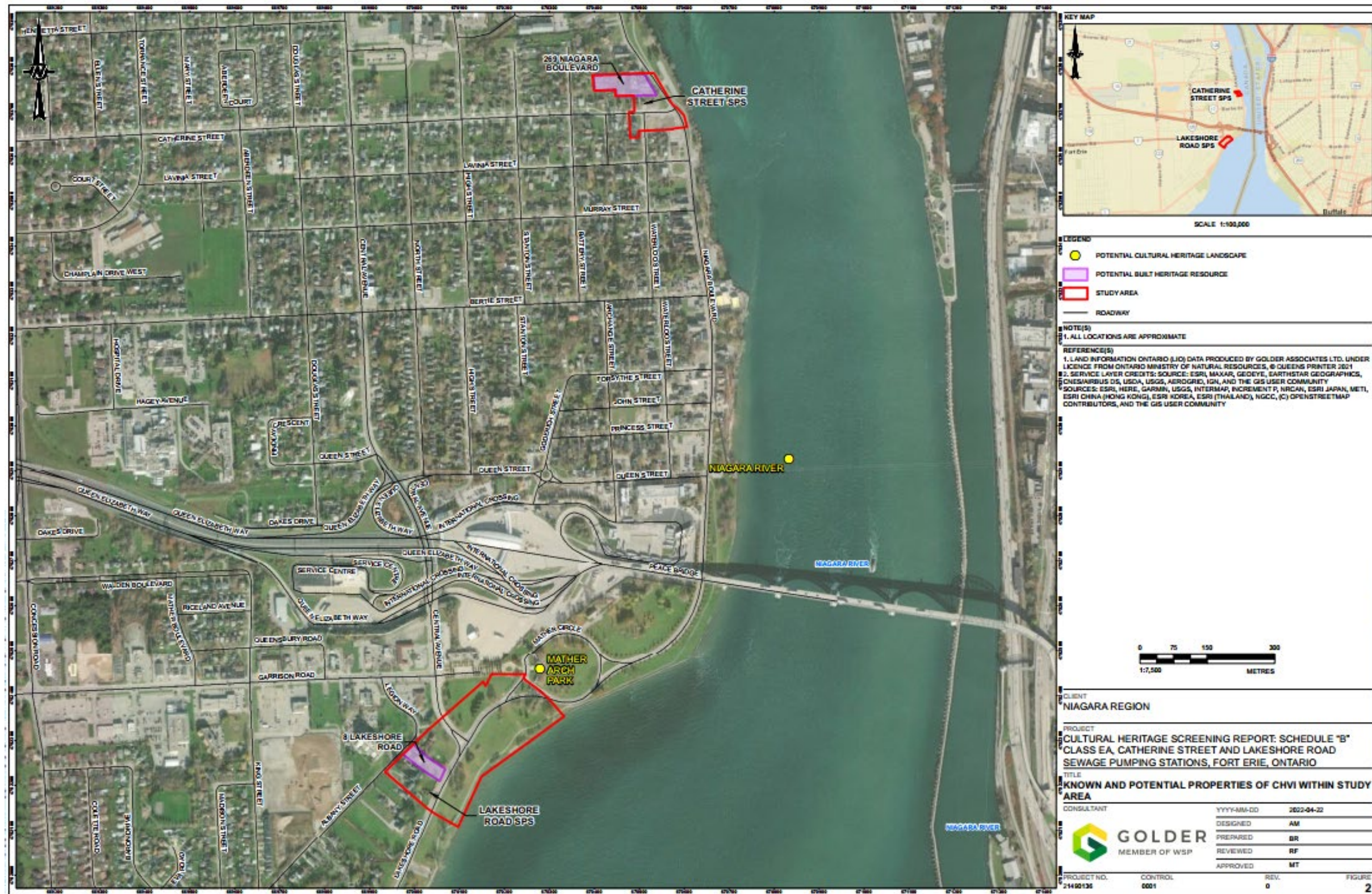


Figure 6-6 Known and Potential Properties with Cultural Heritage Interest



## 7 PHASE 2 – ALTERNATIVE SOLUTIONS TO THE PROBLEM / OPPORTUNITY

Phase 2 of the MCEA process identifies alternative solutions to address the problem or opportunity by considering the existing environment from a natural, social, technical and economic perspective. This Phase also includes the evaluation of alternatives and identification of a recommended solution. After consultation with the public, Indigenous Communities, agencies, and other interested stakeholders, the preferred solution is developed and reflects input received.

### 7.1 Approach to Development and Evaluation of Alternatives

Alternatives were developed through a sequential process, starting with identifying a preferred servicing approach, or strategy, for the Lakeshore Road SPS and Catherine Street SPS catchments. The steps included:

- Step 1** Develop long list of servicing strategies for the Lakeshore Road and Catherine Street SPSs Catchment (common strategies between both stations)
- Step 2** Screen the servicing strategies based on “must-have” criteria to identify the preferred servicing strategy (strategies)
- Step 3** Based on the preferred servicing strategy, develop a long list of alternative solutions for each individual station
- Step 4** Complete a secondary screening of the long list of alternative solutions for each station to develop a short list of alternative solutions
- Step 5** Undertake a detailed evaluation of the short list of alternative solutions
- Step 6** Identify recommended solutions for each station

Sections below provide additional detail for this process.

### 7.2 Long List of Servicing Strategies for the Lakeshore Road and Catherine Street SPSs (Step 1)

As described in in Section 6.2, the Lakeshore Road SPS collects wastewater from its catchment area and pumps to the Catherine Street SPS catchment. From there, flow is conveyed to the Anger Avenue WWTP for treatment. As such, the catchments for Lakeshore Road and Catherine Street SPSs are connected, with all flow from the Lakeshore Road SPS conveyed to the Catherine Street SPS catchment. Servicing the overall area was considered holistically through development of alternatives servicing strategies:

1. Continue to operate both Lakeshore Road and Catherine Street SPSs without significant modifications (Do Nothing)
2. Continue to operate both Lakeshore Road and Catherine Street SPSs (Status Quo)
3. Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS

4. Continue to operate Lakeshore Road SPS and decommission Catherine Street SPS
5. Decommission both stations and convey flow by gravity to the Anger Avenue WWTP

### **Servicing Strategy 1: Continue to operate both Lakeshore Road and Catherine Street SPSs without significant modifications (Do Nothing)**

Under this strategy, the Region would continue to operate both existing stations in their current state, without significant modifications or upgrades. Equipment and structures would be repaired or replaced with equivalent as they deteriorate, and capacity would not change. The catchment areas for each station would also remain unchanged, with the Lakeshore Road SPS pumping to the Catherine Street SPS and Catherine Street SPS conveying flow toward the Anger Avenue WWTP for treatment.

### **Servicing Strategy 2: Continue to operate both Lakeshore Road and Catherine Street SPSs (Status Quo)**

Under this strategy, the Region would continue with the status quo, which involves continuing to modify and upgrade the SPSs as required to support growth and any regulation changes. This strategy differs from Strategy 1 in that Strategy 2 may include station upgrades or replacement of the stations with new and capacity may be different than existing. The catchment areas for each station would remain unchanged, with the Lakeshore Road SPS pumping to the Catherine Street SPS and Catherine Street SPS conveying flow toward the Anger Avenue WWTP for treatment.

### **Servicing Strategy 3: Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS**

Servicing Strategy 3 considers servicing the current Lakeshore Road SPS catchment area by a new gravity sewer that would then convey flow to the Catherine Street SPS and decommissioning the existing Lakeshore Road SPS.

### **Servicing Strategy 4: Continue to operate Lakeshore Road SPS and decommission Catherine Street SPS**

Servicing Strategy 4 considers continued operation of the current Lakeshore Road SPS, with flow conveyed north to the current catchment area for the Catherine Street SPS; however, the Catherine Street SPS would be decommissioned and replaced by a new gravity sewer to convey flows to the Anger Avenue WWTP.

### **Servicing Strategy 5: Decommission both stations and convey flow by gravity to the Anger Avenue WWTP**

Servicing Strategy 5 would include decommissioning both existing pumping stations and replacing them with new gravity sewers to convey flow to the Anger Avenue WWTP.

## **7.3 Screening of Servicing Strategies and Preferred Servicing Strategies (Step 2)**

The above servicing strategies were screened against three (3) criteria to determine which are most feasible. This screening was completed on a pass/fail basis, where a strategy must pass all criteria



to be considered for further review. Table 7-1 presents the criteria used while Table 7-2 presents the details and results of the screening of servicing strategies.

**Table 7-1 Screening Criteria for Servicing Solutions**

| Criteria                                                                    | Description                                                                                                                   |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Does the Servicing Strategy align with the Problem / Opportunity Statement? | Does the alternative servicing strategy meet or exceed the goals and objectives set by the problem and opportunity statement? |
| Is the Servicing Strategy Feasible and Reasonable?                          | Is the alternative servicing strategy feasible and reasonable to implement without facing major constraints?                  |
| Is the Servicing Strategy Economically Viable and Reasonable?               | Is the alternative servicing strategy economically viable and reasonable to implement and maintain?                           |

Following the screening of possible servicing strategies, the preferred strategies were identified to be:

- 1. Continue to operate both Lakeshore Road and Catherine Street SPSs (Status Quo)**
- 2. Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS**

#### **7.4 Long List of Alternative Solutions (Step 3)**

For each of the recommended servicing strategies, several alternative solutions were identified to create a long list of alternatives. The long-list of alternative solutions is described in Table 7-3 and considers both the Lakeshore Road and Catherine Street SPSs together.

**Table 7-2 Screening of Possible Servicing Strategies**

| ID | Servicing Strategy Description                                                                                              | Does the Servicing Strategy align with the Problem / Opportunity Statement?                                                                                                                            | Is the Servicing Strategy Feasible and Reasonable?                                                                  | Is the Servicing Strategy Economically Viable and Reasonable?                                                                                                                                                                                          | Overall Screening                                        |
|----|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| 1  | Continue to operate both Lakeshore Road and Catherine Street SPSs without significant modifications or changes (Do Nothing) | Does not meet requirements of the Problem / Opportunity Statement by not supporting growth or maintaining state of good repair.                                                                        | The existing stations in their current states cannot continue to operate without significant repair or replacement. | Although no initial capital investment would be required, equipment and building components would need to be replaced or repaired over time and emergency works, such as bypass pumping, may be required in the event of equipment or station failure. | Screened out                                             |
|    |                                                                                                                             | ✗                                                                                                                                                                                                      | ✗                                                                                                                   | ✗                                                                                                                                                                                                                                                      |                                                          |
| 2  | Continue to operate both Lakeshore Road and Catherine Street SPSs with (Status Quo)                                         | Upgrades or replacement would support planned growth and capacity requirements and address the Problem / Opportunity Statement.                                                                        | This approach is the same as existing, with two stations servicing the overall area, and therefore is feasible.     | While there would be an initial capital cost for upgrade or replacement, costs are anticipated to be feasible and warrant additional review through development and evaluation of alternatives.                                                        | Carried forward for development of alternative solutions |
|    |                                                                                                                             | ✓                                                                                                                                                                                                      | ✓                                                                                                                   | ✓                                                                                                                                                                                                                                                      |                                                          |
| 3  | Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS                                                | Decommissioning the Lakeshore Road SPS and conveying flows by gravity sewer would support growth and capacity requirements and address the Problem / Opportunity Statement.                            | Several possible gravity sewer routes are available and technically feasible.                                       | While there would be an initial capital cost for decommissioning and construction, costs are anticipated to be feasible and warrant additional review through development and evaluation of alternatives.                                              | Carried forward for development of alternative solutions |
|    |                                                                                                                             | ✓                                                                                                                                                                                                      | ✓                                                                                                                   | ✓                                                                                                                                                                                                                                                      |                                                          |
| 4  | Continue to operate Lakeshore Road SPS and decommission Catherine Street SPS                                                | Decommissioning Catherine Street SPS and conveying flows by gravity sewer would support growth and capacity requirements and address the Problem / Opportunity Statement.                              | It is not technically feasible to convey flows toward the Anger Avenue WWTP by gravity.                             | The anticipated cost for gravity sewer conveyance is anticipated to be very high and prohibitive.                                                                                                                                                      | Screened out                                             |
|    |                                                                                                                             | ✓                                                                                                                                                                                                      | ✗                                                                                                                   | ✗                                                                                                                                                                                                                                                      |                                                          |
| 5  | Decommission both stations and convey flow by gravity to the Anger Avenue WWTP                                              | Decommissioning both the Lakeshore Road and Catherine Street SPSs and conveying flows by gravity sewer would support growth and capacity requirements and address the Problem / Opportunity Statement. | It is not technically feasible to convey flows toward the Anger Avenue WWTP by gravity alone.                       | The anticipated cost for gravity sewer conveyance is anticipated to be very high and prohibitive.                                                                                                                                                      | Screened out                                             |
|    |                                                                                                                             | ✓                                                                                                                                                                                                      | ✗                                                                                                                   | ✗                                                                                                                                                                                                                                                      |                                                          |



**Table 7-3 Long-list of Alternative Solutions**

| Servicing Strategy                                                                       | Long-Listed Alternative Solutions |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                          | ID                                | Lakeshore Road SPS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Catherine Street SPS                                                                                                                                                                                                                                                                                                                                                                            |
| <b>2. Continue to operate both Lakeshore Road and Catherine Street SPSs (Status Quo)</b> | i                                 | <b>Upgrade SPS at existing location</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical, controls, and associated civil works</li> <li>Maintain existing forcemain.</li> </ul>                                                                                                                                                                                                                                                                                                     | <b>Upgrade SPS at existing location</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical, controls, and associated civil works</li> <li>Connect to existing forcemain.</li> </ul>                                                                                                                                                                                          |
|                                                                                          | ii                                | <b>Upgrade SPS at existing location</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical, controls, and associated civil works</li> <li>Maintain existing forcemain.</li> </ul>                                                                                                                                                                                                                                                                                                     | <b>Construct new Catherine Street SPS in adjacent empty lot</b> <ul style="list-style-type: none"> <li>Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS.</li> <li>Utilize existing 300 mm forcemain along Catherine Street.</li> <li>Tie new Catherine Street SPS discharge to existing forcemain.</li> </ul> |
|                                                                                          | iii                               | <b>Upgrade SPS at existing location with outdoor generator and new forcemain</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical, controls, and associated civil works</li> <li>Remove existing control building and provide an exterior standby power generator.</li> <li>Maintain the station as a submersible station with an above ground control panel and a packaged standby power generator.</li> <li>Construct a new forcemain to suit increased pump capacity.</li> </ul> | <b>Construct new Catherine Street SPS in adjacent empty lot</b> <ul style="list-style-type: none"> <li>Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS.</li> <li>Utilize existing 300 mm forcemain along Catherine Street.</li> <li>Tie new Catherine Street SPS discharge to existing forcemain.</li> </ul> |
|                                                                                          | iv                                | <b>Upgrade and expand SPS at existing location</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical, controls, and associated civil works</li> </ul>                                                                                                                                                                                                                                                                                                                                | <b>Relocate to Forsythe Street</b> <ul style="list-style-type: none"> <li>Relocate Catherine Street SPS to vacant land at Forsythe Street and decommission existing Catherine Street SPS</li> </ul>                                                                                                                                                                                             |
|                                                                                          | v                                 | <b>Upgrade and expand pump station at existing Location (Lakeshore Rd)</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical/programming and associated civil works at existing location</li> </ul>                                                                                                                                                                                                                                                                                  | <b>Relocate Catherine St SPS to the parkway southeast of the existing site</b> <ul style="list-style-type: none"> <li>Relocate Catherine St SPS to vacant land along the Parkway and maintain Catherine St SPS at existing lot until the new SPS is built and then begin decommissioning.</li> </ul>                                                                                            |
|                                                                                          | vi                                | <b>Relocate Lakeshore Rd SPS west within vacant commercial property</b> <ul style="list-style-type: none"> <li>Relocate Lakeshore SPS to the vacant commercial lot west of Niagara Blvd while maintain Lakeshore Rd SPS and then decommission after construction after new SPS is built</li> </ul>                                                                                                                                                                                                       | <b>Relocate Catherine St. SPS to Forsythe St</b> <ul style="list-style-type: none"> <li>Relocate Catherine St SPS to vacant land at Forsythe St and maintain Catherine St SPS at existing lot until the new SPS is built and then begin decommissioning.</li> </ul>                                                                                                                             |
|                                                                                          | vii                               | <b>Relocate Lakeshore Rd SPS south to residential property</b> <ul style="list-style-type: none"> <li>Relocate Lakeshore SPS to nearby vacant residential property along Lakeshore road while maintaining Lakeshore Rd SPS and then decommission after construction of new SPS is built</li> </ul>                                                                                                                                                                                                       | <b>Construct new Catherine St pump station in adjacent empty lot</b> <ul style="list-style-type: none"> <li>Maintain Catherine St SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine St SPS</li> </ul>                                                                                                                                               |

| Servicing Strategy                                                              | Long-Listed Alternative Solutions |                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                 | ID                                | Lakeshore Road SPS                                                                                                                                                                                                                                                                      | Catherine Street SPS                                                                                                                                                                                                                                                |
|                                                                                 | viii                              | <b>Relocate Lakeshore Rd SPS north to the NPC Triangle</b> <ul style="list-style-type: none"> <li>Relocate Lakeshore Rd SPS North to the NPC triangle at Lakeshore and center street</li> </ul>                                                                                         | <b>Construct new Catherine St pump station in adjacent empty lot</b> <ul style="list-style-type: none"> <li>Maintain Catherine St SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine St SPS</li> </ul>                   |
|                                                                                 | ix                                | <b>Relocate Lakeshore Rd SPS to the south of the Peace Bridge</b> <ul style="list-style-type: none"> <li>Relocate Lakeshore Rd SPS to the south side of the Peace Bridge while maintaining Lakeshore Rd SPS and then decommission after construction of new SPS</li> </ul>              | <b>Construct new Catherine St SPS in adjacent empty</b> <ul style="list-style-type: none"> <li>Maintain Catherine St SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine St SPS</li> </ul>                                |
|                                                                                 | x                                 | <b>Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road</b> <ul style="list-style-type: none"> <li>Relocate Lakeshore Rd SPS to the south vacant lot (Parking Lot) while maintaining Lakeshore Rd SPS and then decommission after construction of new SPS</li> </ul> | <b>Construct new Catherine St SPS in adjacent empty lot</b> <ul style="list-style-type: none"> <li>Maintain Catherine St SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine St SPS</li> </ul>                            |
| 3. Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS | i                                 | <b>Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St</b>                                                                                                                                                                      | <b>Relocate Catherine St. SPS to Forsythe St</b> <ul style="list-style-type: none"> <li>Relocate Catherine St SPS to vacant land at Forsythe St and maintain Catherine St SPS at existing lot until the new SPS is built and then begin decommissioning.</li> </ul> |
|                                                                                 | ii                                | <b>Decommission Lakeshore SPS and utilize existing gravity sewer under the CBSA Plaza to Forsythe Street</b>                                                                                                                                                                            | <b>Relocate Catherine St. SPS to Forsythe St</b> <ul style="list-style-type: none"> <li>Relocate Catherine St SPS to vacant land at Forsythe St and maintain Catherine St SPS at existing lot until the new SPS is built and then begin decommissioning.</li> </ul> |
|                                                                                 | iii                               | <b>Decommission Lakeshore SPS and build new gravity sewer under the CBSA Plaza to Catherine Street</b> <ul style="list-style-type: none"> <li>Maintain bypass</li> </ul>                                                                                                                | <b>Upgrade and expand SPS at existing location</b> <ul style="list-style-type: none"> <li>Upgrade mechanical, electrical/programming and associated civil works at existing location</li> </ul>                                                                     |
|                                                                                 | iv                                | <b>Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St</b>                                                                                                                                | <b>Construct new Catherine St pump station in adjacent empty lot</b> <ul style="list-style-type: none"> <li>Maintain Catherine St SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine St SPS</li> </ul>                   |
|                                                                                 | v                                 | <b>Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Gilmore Road</b>                                                                                                                                                                     | <b>Construct new Catherine St pump station within the Gilmore Lodge property</b> <ul style="list-style-type: none"> <li>Maintain Catherine St SPS while constructing the new SPS and then decommission the old Catherine St SPS</li> </ul>                          |



## 7.5 Secondary Screening of Long List of Alternative Solutions (Step 4)

The long-list of alternative solutions was then screened to establish a short list of feasible, cost-effective alternatives for further review and evaluation, similar to the screening of servicing strategies described in section 7.2.

As explained above in Section 7.2, “Do Nothing” is not a feasible solution since it does not address the fundamental need to service future growth requirements effectively and reliably. As such, it was not included in the long list of alternatives.

The long listed alternative solutions were subjected to the three screening criteria listed and described in Table 7-4. Alternatives were either assigned a pass, fail or possible scoring which are symbolized and described below in Table 7-5. This screening was completed on a pass/fail basis, where an alternative must pass all three criteria to be considered for further review. As noted, some of the alternatives received a scoring of “possible” as the option required additional investigation and review. Those alternatives were still carried forward to the short list to allow for the project team to further investigate its’ feasibility.

**Table 7-4 Screening Criteria for Alternative Solutions**

| Criteria                           | Description                                                                                                                   |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Effectiveness and reliability      | Does the alternative effectively and reliably meet 2051 capacity requirements?                                                |
| Compatibility with existing system | Is the alternative compatible with the existing wastewater system such that it will not require major changes if implemented? |
| Implementation challenges          | Can the alternative be implemented without resulting in major constraints?                                                    |

**Table 7-5 Scoring Symbols and Descriptions**

| Symbol | Description                                                      |
|--------|------------------------------------------------------------------|
| ✓      | Pass                                                             |
| ?      | Possible – alternative requires further investigation and review |
| ✗      | Fail                                                             |

**Table 7-6 Screening of Long List of Alternative Solutions**

| Long-Listed Alternative                                                                                                                         | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Screening                     |                                    |                           |                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------|---------------------------|----------------------------------------|
|                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Effectiveness and Reliability | Compatibility with Existing System | Implementation Challenges | Screening Result                       |
| Servicing Strategy 2: Continue to operate both Lakeshore Road and Catherine Street SPSs with upgrades or replacement (Status Quo)               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                    |                           |                                        |
| <b>2-i</b><br><b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Upgrade SPS at existing location                          | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"><li>Reduced construction costs compared to building a new station.</li><li>Continued utilization of the existing sewer and forcemain infrastructure.</li><li>No need for new sewer along Niagara Boulevard.</li></ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"><li>The Region already owns existing lot</li><li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li><li>May allow for connection to existing overflow structure.</li></ul>                                                                                                                                                                                         | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"><li>Lakeshore SPS site will still have access issues.</li><li>Continued operation and maintenance of the pumping station long term (compared to gravity solution).</li><li>Continued use and maintenance of the existing forcemain may not be feasible since it’s experiencing frequent breaks.</li><li>May not be feasible to upgrade standby power generator inside the existing control building.</li><li>Limited construction laydown area, constructability challenges, and proximity to residents.</li></ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"><li>Unable to maintain service as upgrade is occurring at existing location</li><li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li></ul>               | ?                             | ✓                                  | ✓                         | Carried forward to detailed evaluation |
| <b>2-ii</b><br><b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"><li>Reduced construction costs compared to building a new station.</li><li>Continued utilization of the existing sewer and forcemain infrastructure.</li><li>No need for new sewer along Niagara Boulevard.</li></ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"><li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li><li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li><li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li></ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"><li>Lakeshore SPS site will still have access issues.</li><li>Continued operation and maintenance of the pumping station long term (compared to gravity solution).</li><li>Continued use and maintenance of the existing forcemain may not be feasible since it is experiencing frequent breaks.</li><li>Limited construction laydown area, constructability challenges, and proximity to residents.</li><li>May not be feasible to upgrade standby power generator inside the existing control building.</li></ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"><li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li><li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li></ul> | ?                             | ✓                                  | ✓                         | Carried forward to detailed evaluation |



| Long-Listed Alternative                                                                                                                                                                   | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Screening                     |                                    |                           |                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------|---------------------------|----------------------------------------|
|                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Effectiveness and Reliability | Compatibility with Existing System | Implementation Challenges | Screening Result                       |
|                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to existing overflow structure.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                    |                           |                                        |
| <b>2-iii</b><br><b>Lakeshore:</b> Upgrade SPS at existing location with outdoor generator and new forcemain<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Reduced construction costs compared to building a new station.</li> <li>New forcemain will increase pumping capacity and provide long-term reliability.</li> <li>Sufficient space is available to install an exterior standby power generator to meet increased loads.</li> <li>No need for new sewer along Niagara Boulevard.</li> <li>Removing control building will reduce impact to surrounding properties.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to existing overflow structure.</li> </ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Lakeshore SPS site will still have access issues.</li> <li>Continued operation and maintenance of the pumping station long term (compared to gravity solution).</li> <li>Limited construction laydown area, constructability challenges, and proximity to residents.</li> <li>Exterior generator will occupy space.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul> | ✓                             | ✓                                  | ✓                         | Carried forward to detailed evaluation |
| <b>2-iv</b><br><b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Relocate to Forsythe Street                                                                        | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Reduced construction costs compared to building a new station.</li> <li>Continued utilization of the existing sewer and forcemain infrastructure.</li> <li>No need for new sewer along Niagara Boulevard.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Lakeshore SPS site will still have access issues.</li> <li>Continued operation and maintenance of the pumping station long term (compared to gravity solution).</li> <li>Continued use and maintenance of the existing forcemain may not be feasible since it is experiencing frequent breaks.</li> </ul>                                                                                                                                                                                                                                                                                                                                    | ✓                             | ✗                                  | ✓                         | Screened out                           |

| Long-Listed Alternative                                                                                                                                            | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Screening                     |                                    |                           |                  |
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|                                                                                                                                                                    | <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>More "central" location between existing Catherine St SPS site and Lakeshore SPS</li> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Limited construction laydown area, constructability challenges, and proximity to residents.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Utilizing alignment under CBSA Plaza is not feasible</li> <li>Located in a tourist area and along Lakeshore (i.e., restaurants, businesses)</li> <li>Higher operating costs for pumping due to longer forcemain along Catherine St. SPS.</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul> |                               |                                    |                           |                  |
| <b>2-v</b><br><b>Lakeshore:</b> Upgrade pump station at existing location<br><b>Catherine:</b> Relocate Catherine St SPS to the Parkway Southeast of Existing Site | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Reduced construction costs compared to building a new station.</li> <li>New forcemain will increase pumping capacity and provide long-term reliability.</li> <li>No need for new sewer along Niagara Boulevard.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>More "central" location between existing Catherine St SPS site and Lakeshore SPS</li> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> </ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Lakeshore SPS site will still have access issues.</li> <li>Continued operation and maintenance of the pumping station long term (compared to gravity solution).</li> <li>Limited construction laydown area, constructability challenges, and proximity to residents.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Land location is along the waterfront</li> </ul>                                                                                                                                          | ✓                             | ✗                                  | ✓                         | Screened out     |
| <b>2-vi</b><br><b>Lakeshore:</b> Relocate Lakeshore Rd SPS West Within Vacant Commercial Property<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St   | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Commercial lot already has development on it (therefore mitigating some environmental concerns)</li> <li>Avoids residential restate area</li> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>More "central" location between existing Catherine St SPS site and Lakeshore SPS</li> </ul>                                                                        | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Utilizing alignment under CBSA Plaza is not feasible</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Utilizing alignment under CBSA Plaza is not feasible</li> </ul>                                                                                                                                                                                    | ✓                             | ✗                                  | ✗                         | Screened out     |



| Long-Listed Alternative                                                                                                                                                            | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Screening                     |                                    |                           |                                        |
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|                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Located in a tourist area and along Lakeshore (i.e., restaurants, businesses)</li> <li>Higher operating costs for pumping due to longer forcemain along Catherine St. SPS.</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                    |                           |                                        |
| <b>2-vii</b><br><b>Lakeshore:</b><br>Relocate Lakeshore Rd SPS South to Residential Property<br><b>Catherine:</b><br>Construct new Catherine St pump station in adjacent empty lot | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>New station can be constructed offline with minimal impact to existing operations.</li> <li>Space availability for construction laydown.</li> <li>Minimal sewer work along Lakeshore Road, and utilization of existing sewer network.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to existing overflow structure.</li> </ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Land is still within residential area.</li> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Construction of a new relief bypass point. May have regulatory delays/implications.</li> </ul> <b>New Gravity Sewer:</b> <ul style="list-style-type: none"> <li>Traffic impact along Lakeshore Road to construction gravity sewer and forcemain extension (150 m).</li> <li>Limited ability to store flows within the new gravity sewer.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul> | ✓                             | ✓                                  | ✓                         | Carried forward to detailed evaluation |
| <b>2-viii</b><br><b>Lakeshore:</b><br>Relocate Lakeshore Rd SPS North to the NPC Triangle<br><b>Catherine:</b><br>Construct new Catherine St pump station in adjacent empty lot    | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Site is closer to the Catherine St SPS location</li> <li>Allows for the Lakeshore SPS to be online during the construction at the new location</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Land is still within residential area.</li> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Construction of a new relief bypass point. May have regulatory delays/implications</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                 | ✓                             | ✓                                  | ✗                         | Screened out                           |

| Long-Listed Alternative                                                                                                                                                              | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Screening                     |                                    |                           |                                        |
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|                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to exiting overflow structure</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                    |                           |                                        |
| <b>2-ix</b><br><b>Lakeshore:</b><br>Relocate Lakeshore Rd SPS to the south of the Peace Bridge<br><b>Catherine:</b><br>Construct new Catherine St pump station in adjacent empty lot | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Site is closer to the Catherine Street SPS Location, thereby reducing the length of forcemain.</li> <li>Allows for the Lakeshore SPS to be online during the construction at the new location</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to exiting overflow structure</li> </ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Land is still within residential area.</li> <li>Require upgrade of sewer infrastructure.</li> <li>Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region</li> <li>Construction of a new relief bypass point. May have regulatory delays/implications</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul> | ✓                             | ✓                                  | ✗                         | Screened out                           |
| <b>2-x</b><br><b>Lakeshore:</b><br>Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road                                                                           | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>New station can be constructed offline with minimal impact to existing operations.</li> <li>Space availability for construction laydown.</li> <li>Minimal sewer work along Lakeshore Road, and utilization of existing sewer network.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Requires procurement of land as proposed site is within NPC lands which could post implementation challenges compared to other alternative where land is already owned by Region</li> <li>Construction of a new relief bypass point. May have regulatory delays/implications.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             | ✓                             | ✓                                  | ✓                         | Carried forward to detailed evaluation |



| Long-Listed Alternative                                                                                                                                                                                          | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Screening                     |                                    |                           |                                        |
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| <b>Catherine:</b><br>Construct new Catherine St pump station in adjacent empty lot                                                                                                                               | <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to exiting overflow structure</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                     | <b>New Gravity Sewer:</b> <ul style="list-style-type: none"> <li>Traffic impact along Lakeshore Road to construct gravity sewer and forcemain extension (150 m).</li> <li>Limited ability to store flows within the new gravity sewer.</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                    |                           |                                        |
| <b>Servicing Strategy 3: Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                    |                           |                                        |
| <b>3-i</b><br><b>Lakeshore:</b><br>Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br><b>Catherine:</b><br>Relocate Catherine St. SPS to Forsythe St | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Elimination of maintenance and operation of a pump station. Long term cost savings.</li> <li>Addresses current site access and safety issues.</li> <li>Possible to address resident complaints. Enhanced overall curb appeal along Lakeshore Road.</li> </ul> <b>New Gravity Sewer and Forcemain:</b> <ul style="list-style-type: none"> <li>New sewer can be sized to include storage for wet weather flows.</li> <li>Catherine Street SPS (Forsythe St)</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> </ul> <b>Catherine Street SPS (Forsythe Street):</b> <ul style="list-style-type: none"> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> </ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Elimination of existing pumped overflow relief currently at Lakeshore SPS.</li> </ul> <b>New Gravity Sewer and Forcemain:</b> <ul style="list-style-type: none"> <li>Requires approvals for sewer along Niagara Blvd (CBSA, MECP, NPC)</li> <li>Construction costs for over 2 km of sewer and partial forcemain work with excavation in rock.</li> <li>Extended construction duration due to slow excavation in rock.</li> <li>Traffic impacts along Niagara Blvd, possible impact to tourist traffic/activities</li> </ul> <b>Catherine Street SPS (Forsythe Street):</b> <ul style="list-style-type: none"> <li>Requires procurement of land</li> <li>Located in a tourist area and along Lakeshore Road (i.e., restaurants, businesses)</li> <li>Higher operating costs for pumping due to longer forcemain along Catherine St. SPS.</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul> | ✓                             | ✓                                  | ?                         | Carried forward to detailed evaluation |

| Long-Listed Alternative                                                                                                                                                                                                     | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Screening                     |                                    |                           |                                        |
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|                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                    |                           |                                        |
| <b>3-ii</b><br><b>Lakeshore:</b><br>Decommission Lakeshore SPS and utilize existing gravity sewer under the CBSA Plaza to Forsythe Street<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St                    | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Permits the decommissioning of Lakeshore Rd SPS</li> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed</li> <li>Allows for the decommissioning of Lakeshore SPS and eliminates site access and safety concerns</li> </ul> <b>Catherine Street SPS (Forsythe Street):</b> <ul style="list-style-type: none"> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> </ul> | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Potentially deep excavation will be required to accommodate gravity sewer under CBSA Plaza</li> <li>Additional maintenance concerns</li> <li>Requires additional approvals</li> </ul> <b>Catherine Street SPS (Forsythe Street):</b> <ul style="list-style-type: none"> <li>Requires procurement of land</li> <li>Located in a tourist area and along Lakeshore Road (i.e., restaurants, businesses)</li> <li>Higher operating costs for pumping due to longer forcemain along Catherine St. SPS.</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul> | ✗                             | ✗                                  | ✗                         | Screened out                           |
| <b>3-iii</b><br><b>Lakeshore:</b><br>Decommission Lakeshore SPS and build new gravity sewer under the CBSA Plaza to Catherine Street<br><b>Catherine:</b> Upgrade and expand pump station at existing locations (Catherine) | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Decommission Lakeshore SPS and resolves site access and safety concerns</li> <li>Ability for extra in-line storage</li> <li>Ability to convert existing station into a wet well for extra layer of safety</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>The Region already owns existing lot</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to existing overflow structure.</li> </ul>                                                                                                                                                                           | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Potentially deep excavation will be required to accommodate gravity sewer under CBSA Plaza</li> <li>Additional maintenance concerns</li> <li>Requires additional approvals</li> <li>Long gravity sewer length would be required</li> <li>Existing sewer alignment under the CBSA Plaza is not feasible (i.e., not deep enough)</li> </ul> <b>Catherine Street SPS:</b> <ul style="list-style-type: none"> <li>Unable to maintain service as upgrade is occurring at existing location</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul>             | ✓                             | ✗                                  | ✗                         | Screened out                           |
| <b>3-iv</b><br><b>Lakeshore:</b><br>Decommission Lakeshore SPS and                                                                                                                                                          | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Elimination of maintenance and operation of a pump station. Long term cost savings.</li> <li>Addresses current site access and safety issues.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Lakeshore Road SPS:</b> <ul style="list-style-type: none"> <li>Elimination of existing pumped overflow relief currently at Lakeshore SPS.</li> </ul> <b>New Gravity Sewer:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ✓                             | ✓                                  | ?                         | Carried forward to detailed evaluation |



| Long-Listed Alternative                                                                                                                                                                                                                              | Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Screening                     |                                    |                           |                  |
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|                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Effectiveness and Reliability | Compatibility with Existing System | Implementation Challenges | Screening Result |
| <p>build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St</p> <p><b>Catherine:</b><br/>Construct new Catherine St pump station in adjacent empty lot</p>                                 | <ul style="list-style-type: none"> <li>Possible to address resident complaints. Enhanced overall curb appeal along Lakeshore Road.</li> </ul> <p><b>New Gravity Sewer</b></p> <ul style="list-style-type: none"> <li>New sewer can be sized to include storage for wet weather flows.</li> </ul> <p><b>Catherine Street SPS:</b></p> <ul style="list-style-type: none"> <li>The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required.</li> <li>Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.</li> <li>Adjacent lot at Catherine SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed.</li> <li>An upgrade will allow for any design considerations to help mitigate odour concerns.</li> <li>May allow for connection to existing overflow structure.</li> </ul> | <ul style="list-style-type: none"> <li>Requires approvals for sewer along Niagara Blvd (CBSA, MECP, NPC)</li> <li>Construction costs for almost 2 km of sewer with excavation in rock (minimal forcemain tie-in).</li> <li>Extended construction duration due to slow excavation in rock.</li> <li>Traffic impacts along Niagara Blvd., possible impact to tourist traffic/activities.</li> </ul> <p><b>Catherine Street SPS:</b></p> <ul style="list-style-type: none"> <li>Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd).</li> <li>May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li> </ul>                                                                             |                               |                                    |                           |                  |
| <p><b>3-v Lakeshore:</b><br/>Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Gilmore Road</p> <p><b>Catherine:</b><br/>Construct new Catherine St pump station within the Gilmore Lodge property</p> | <p><b>Lakeshore Road SPS:</b></p> <ul style="list-style-type: none"> <li>Elimination of maintenance and operation of a pump station. Long term cost savings.</li> <li>Addresses current site access and safety issues.</li> <li>Possible to address resident complaints. Enhanced overall curb appeal along Lakeshore Road.</li> </ul> <p><b>New Gravity Sewer:</b></p> <ul style="list-style-type: none"> <li>New sewer can be sized to include storage for wet weather flows. Long sewer line maximizes storage.</li> </ul> <p><b>Catherine Street SPS: (Gilmore)</b></p> <ul style="list-style-type: none"> <li>Away from residents and core tourist area.</li> </ul>                                                                                                                                                                                                                                                                            | <p><b>Lakeshore Road SPS:</b></p> <ul style="list-style-type: none"> <li>Elimination of existing pumped overflow relief currently at Lakeshore SPS.</li> </ul> <p><b>New Gravity Sewer:</b></p> <ul style="list-style-type: none"> <li>Requires approvals for sewer along Niagara Blvd (CBSA, MECP, NPC)</li> <li>Construction costs for almost 2.6 km of sewer with excavation in rock. At least 10.3 m drop in sewer from Lakeshore Road to Gilmore Road.</li> <li>New 300 mm forcemain required. Length approx. 200 m.</li> <li>Extended construction duration due to slow excavation in rock.</li> <li>Traffic impacts along Niagara Blvd., possible impact to tourist traffic/activities.</li> <li>May require a new overflow point.</li> </ul> <p><b>Catherine Street SPS (Gilmore):</b></p> | ✓                             | ✗                                  | ✗                         | Screened out     |

| Long-Listed<br>Alternative | Advantages | Disadvantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Screening                           |                                          |                              |                     |
|----------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------|------------------------------|---------------------|
|                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Effectiveness<br>and<br>Reliability | Compatibility<br>with Existing<br>System | Implementation<br>Challenges | Screening<br>Result |
|                            |            | <ul style="list-style-type: none"><li>• Very deep station in rock due to long gravity sewer.</li><li>• Construction of a new 200 m long forcemain.</li><li>• Decommissioning of a relatively new forcemain along Catherine St. SPS.</li><li>• High pumping costs to the high static lift.</li><li>• May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.</li><li>• Requires land acquisition.</li><li>• Requires demolition of existing infrastructure.</li></ul> |                                     |                                          |                              |                     |



## 7.6 Detailed Evaluation of Short List of Alternative Solutions (Step 5)

Based on the screening of long-listed alternative solutions, the short-listed alternatives to be reviewed in further detail are summarized in Table 7-7. For simplicity, each alternative has been assigned a new identifier for use in the detailed evaluations. Figure 7-1 to Figure 7-6 detail the mapping of each of the short-listed alternatives.

**Table 7-7 Summary of Short-Listed Alternatives**

| Long-List<br>Alternative ID | Short-Listed<br>Alternative ID for<br>Detailed Evaluation | Description                                                                                                                                                                                                                                            |
|-----------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-i                         | A                                                         | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Upgrade SPS at existing location                                                                                                                                               |
| 2-ii                        | B                                                         | <b>Lakeshore:</b> Upgrade SPS at existing location<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot                                                                                                                       |
| 2-iii                       | C                                                         | <b>Lakeshore:</b> Upgrade SPS at existing location with outdoor generator and new forcemain I<br><b>Catherine:</b> Construct new Catherine Street SPS in adjacent empty lot                                                                            |
| 3-i                         | D                                                         | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br><b>Catherine:</b> Relocate Catherine St. SPS to Forsythe St                                                           |
| 3-iv                        | E                                                         | <b>Lakeshore:</b> Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot |

| Long-List<br>Alternative ID | Short-Listed<br>Alternative ID for<br>Detailed Evaluation | Description                                                                                                                                                                             |
|-----------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-vii                       | F                                                         | <p><b>Lakeshore:</b> Relocate Lakeshore Rd SPS South to Residential Property</p> <p><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot</p>                 |
| 2-x                         | G                                                         | <p><b>Lakeshore:</b> Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road</p> <p><b>Catherine:</b> Construct new Catherine St pump station in adjacent empty lot</p> |





Figure 7-1 Alternative A





Figure 7-2 Alternative B & Alternative C





Figure 7-3 Alternative D





Figure 7-4 Alternative E



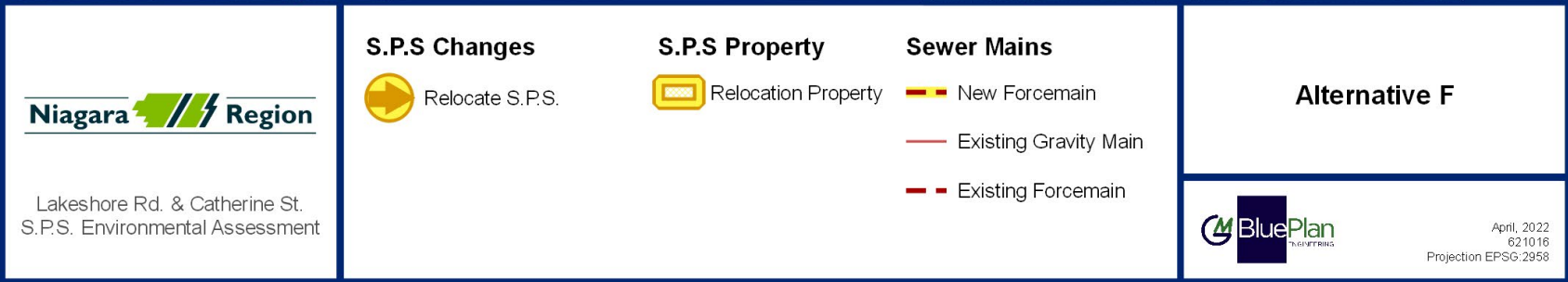


Figure 7-5 Alternative F





Figure 7-6 Alternative G



## 7.7 Evaluation of Short-Listed Alternatives

The evaluation of short-listed alternatives centered around the following major criteria:

- **Environmental Factors:** Evaluate the option's short and long-term impacts to the surrounding environment including terrestrial and aquatic features/ habitat, groundwater and species at risk
- **Social and Cultural Factors:** Evaluate the option's impact on surrounding residents and businesses, land use, traffic, archaeological/heritage features and obtaining land acquisition/easements.
- **Technical Factors:** Evaluate the option's impact on its ability to meet future needs, required permits/approvals,
- **Economic Factors:** Evaluate the option's construction costs as well as the long-term impact to the facility's lifecycle cost.

Each of the above categories consisted of several sub-criteria that were used for further detailed evaluation which are presented and described in Table 7-8 below.

**Table 7-8 Detailed Sub-Criteria for Evaluation**

| Category                    | Sub-Category Criteria                  | Rationale / Indicators                                                                                                                                                                                                                                                                                      |
|-----------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Factors       | Terrestrial System                     | <ul style="list-style-type: none"> <li>Potential for alternative solution to impact terrestrial habitats or systems, including terrestrial features/ functions (ANSIs, Endangered Species Area [ESA]), unique vegetation species, mature trees, existing park/ open spaces linkages or wildlife.</li> </ul> |
|                             | Aquatic System                         | <ul style="list-style-type: none"> <li>Potential of the solution to impact aquatic habitats or systems, including possible impacts on aquatic life and species at risk features/ functions.</li> </ul>                                                                                                      |
|                             | Groundwater Water Quality and Quantity | <ul style="list-style-type: none"> <li>Potential of the solution to impact the quality and quantity of groundwater.</li> </ul>                                                                                                                                                                              |
| Social and Cultural Factors | Odour                                  | <ul style="list-style-type: none"> <li>The potential of the solution to generate odour concerns (post-construction).</li> </ul>                                                                                                                                                                             |
|                             | Visual/Aesthetics                      | <ul style="list-style-type: none"> <li>The potential of the solution to impact the scenic attributes of the community and surrounding areas (post-construction).</li> </ul>                                                                                                                                 |

| Category          | Sub-Category Criteria                           | Rationale / Indicators                                                                                                                                                                                                                  |
|-------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Disruption During Construction                  | <ul style="list-style-type: none"> <li>The potential of the solution to impact surrounding landowners and businesses, including disruption to traffic and parking, noise and odour generation, parks and greenspace impacts.</li> </ul> |
|                   | Property Acquisition and Easement Requirements  | <ul style="list-style-type: none"> <li>The extent to which property acquisition or easements are required to implement the solution.</li> </ul>                                                                                         |
|                   | Existing and Future Land Use Compatibility      | <ul style="list-style-type: none"> <li>The extent to which the solution fits in with the existing land and future planned land uses in the area.</li> </ul>                                                                             |
|                   | Archaeology/ Built Cultural Heritage            | <ul style="list-style-type: none"> <li>The potential of solution to impact any archaeological sites and/ or significant/ natural heritage areas, including the potential to address Indigenous Community interests.</li> </ul>          |
| Technical Factors | Long-term flexibility                           | <ul style="list-style-type: none"> <li>The ability of the solution to meet future demands beyond 2041.</li> </ul>                                                                                                                       |
|                   | Ease of Operation                               | <ul style="list-style-type: none"> <li>The solutions relative complexity as it relates to operation and maintenance of the Region's wastewater collection/treatment system.</li> </ul>                                                  |
|                   | Redundancy                                      | <ul style="list-style-type: none"> <li>Ability for the sewer network to provide extra storage for wet weather flow and for emergency situations.</li> </ul>                                                                             |
|                   | Compatibility with existing infrastructure      | <ul style="list-style-type: none"> <li>The ability of the solution to be compatible with the existing sewer network and its infrastructure.</li> </ul>                                                                                  |
|                   | Geotechnical and Hydrogeology                   | <ul style="list-style-type: none"> <li>The extent of potential geotechnical challenges and impact to hydrogeology as related to the infrastructure during and post construction.</li> </ul>                                             |
|                   | Climate Change Adaptability (CSO & Wet Weather) | <ul style="list-style-type: none"> <li>The ability of the solution to adapt to climate change impacts (i.e., wet weather flow, severe events/basement flooding, higher Lake levels).</li> </ul>                                         |



| Category         | Sub-Category Criteria | Rationale / Indicators                                                                                                                                                                |
|------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  | Permits and Approvals | <ul style="list-style-type: none"> <li>Ease of receiving permits and approvals, including the agency approvals necessary.</li> </ul>                                                  |
| Economic Factors | Capital Cost          | <ul style="list-style-type: none"> <li>MCEA level capital cost estimates to provide a relative comparison of solutions.</li> </ul>                                                    |
|                  | Lifecycle Cost        | <ul style="list-style-type: none"> <li>Estimated lifecycle costs over a 50 year period including: initial construction, operation, maintenance, and equipment replacement.</li> </ul> |

To clearly differentiate the potential positive and negative impacts or outcomes of each alternative on the identified criteria, an impact rating scale was developed. The rating scale is defined as follows in Table 7-9, with 10 being the most positive impact and 1 being the most negative impact. The symbols were used for public consultation purposes to clearly depict the impacts of each alternative. Alternative impacts for each criterion were scored by a team of engineers, scientists and planners based on the existing conditions and inventories presented in Section 6, and evaluations of technical and cost considerations.

Impact rating will be summed for each criteria category and normalized, such that each category (i.e., environmental, social/cultural, technical, and economic) are weighted equally at 25% each. The alternative with the highest summed score out of 100% (or symbolically with the most positive full circles) was selected as the preferred as it has the lowest potential net effects (i.e., impacts are short term and can be mitigated). Alternatives with lower scores (or symbolically with the least positive full circles) had higher potential net effects (impacts are long lasting, and mitigation may not eliminate the impact entirely). The results of the detailed evaluation and recommended alternative were presented to the public for input at the Public Information Centre (PIC). The preferred alternative was confirmed based on comments and feedback received from project stakeholders including the public and review agencies. A summary of the evaluation of alternatives is provided in Table 7-9 and further details of the evaluation are provided in Appendix E.

**Table 7-9 Evaluation Scoring Scale**

| Scoring Scale  | Impact Score | Symbol                                                                               |
|----------------|--------------|--------------------------------------------------------------------------------------|
| Major Positive | 9-10         |   |
| Minor Positive | 7-8          |   |
| Neutral        | 5-6          |   |
| Minor Negative | 3-4          |   |
| Major Negative | 1-2          |  |



**Table 7-10 Summary of Evaluation Criteria and Scoring Rationale for Short Listed Alternatives**

| Alternatives                                                                                                                            | Environmental Factors                                                                                                                                                                       | Social and Cultural Factors                                                                                                                                                                                                                                          | Technical Factors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Economic Factors                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Alternative A</b> – Upgrade Lakeshore Road SPS and Catherine Street SPS at existing locations and property footprints                | <ul style="list-style-type: none"> <li>Minimal environmental impacts to aquatic system and groundwater</li> <li>Moderate potential impacts to terrestrial habitats</li> </ul>               | <ul style="list-style-type: none"> <li>Minimal archaeological and natural heritage impacts</li> <li>Compatible with existing land use as no property acquisitions will be required</li> <li>Impacts to adjacent landowners during construction</li> </ul>            | <ul style="list-style-type: none"> <li>No significant geotechnical challenges</li> <li>No challenges to obtaining permits and approvals</li> <li>Compatible with existing infrastructure</li> <li>Potential maintenance issues due to site constraints; limited size and storage space</li> <li>Restricted climate change adaptability due to maintaining existing forcemain</li> <li>Upgraded standby power generator may not be feasible to be installed inside existing control room</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>Lowest capital costs</li> <li>Lowest lifecycle costs</li> </ul> |
|                                                                                                                                         |                                                                                                         |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |
| <b>Alternative B</b> – Upgrade both stations, Lakeshore Road SPS at existing site and move Catherine Street to adjacent lot to the east | <ul style="list-style-type: none"> <li>Minimal impacts to surrounding aquatic systems and groundwater due to short sewer length</li> <li>Moderate impacts to terrestrial impacts</li> </ul> | <ul style="list-style-type: none"> <li>Compatible with existing land use as property acquisition will not be required</li> <li>Potential impacts to archaeological and natural heritage sites</li> <li>Impacts to adjacent landowners during construction</li> </ul> | <ul style="list-style-type: none"> <li>Minimal geotechnical challenges</li> <li>Ability to meet future flow requirements</li> <li>No challenges to obtaining permits and approvals</li> <li>Compatible with existing infrastructure</li> <li>High potential for maintenance issues due to site restrictions and moderate sewage storage space</li> <li>Improved climate change adaptability (Catherine St. SPS only)</li> <li>Restricted climate change adaptability due to maintaining existing forcemain</li> <li>Upgraded standby power generator may not be feasible</li> </ul> | <ul style="list-style-type: none"> <li>Low capital costs</li> <li>Low lifecycle costs</li> </ul>       |

| Alternatives                                                                                                                                                | Environmental Factors                                                                                                                                                                    | Social and Cultural Factors                                                                                                                                                                                                                                                                                                                                                                                                                          | Technical Factors                                                                                                                                                                                                                                                                                                                                                                                             | Economic Factors                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|                                                                                                                                                             |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                      | to be installed inside existing control room                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                  |
|                                                                                                                                                             |                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                            |               |
| <b>Alternative C</b> – Upgrade Lakeshore Road SPS with exterior generator and new forcemain. Construct new Catherine Street SPS at adjacent lot to the east | <ul style="list-style-type: none"> <li>Minimal environmental impacts to aquatic system and groundwater</li> <li>Moderate potential impacts to terrestrial habitats or systems</li> </ul> | <ul style="list-style-type: none"> <li>Compatible with existing land use as no property acquisitions will be required.</li> <li>Reduced impacts to adjacent landowners during construction.</li> <li>Moderate aesthetic impact as exterior generator will be visible from Lakeshore Road SPS however, will be improved with the removal of the control building.</li> <li>Potential impacts to archaeological and natural heritage sites.</li> </ul> | <ul style="list-style-type: none"> <li>Ability to meet future flows.</li> <li>No challenges to obtaining permits and approvals.</li> <li>Compatible with existing infrastructure.</li> <li>Improved operations and maintenance and maximized use of existing assets.</li> <li>Improved climate change adaptability by increasing pumping and transmission capacity and overall system reliability.</li> </ul> | <ul style="list-style-type: none"> <li>Low capital costs</li> <li>Low lifecycle costs</li> </ul> |
|                                                                                                                                                             |                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                          |             |



| Alternatives                                                                                                                                                                                                                                   | Environmental Factors                                                                                                                                                                           | Social and Cultural Factors                                                                                                                                                                                                                                                                                    | Technical Factors                                                                                                                                                                                                                                                                                                                                                                                            | Economic Factors                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Alternative D</b> – Decommission Lakeshore Road SPS and gravity sewer along Lakeshore Road / Niagara Boulevard. Relocate Catherine Street SPS to Forsythe Street. Extend sewer from existing Catherine Street to new SPS at Forsythe Street | <ul style="list-style-type: none"> <li>Moderate to severe impacts to aquatic system and groundwater due to sewer length</li> <li>Severe potential for impacts to terrestrial impacts</li> </ul> | <ul style="list-style-type: none"> <li>Addresses odour and aesthetics issues</li> <li>Impacts to adjacent landowners during construction</li> <li>Requires purchasing of land</li> <li>Moderate to severe impacts to archaeological and natural heritage sites</li> </ul>                                      | <ul style="list-style-type: none"> <li>Moderate ability to meet future flows</li> <li>Low potential for maintenance issues</li> <li>Ability to provide redundancy and adaptability to climate change impacts</li> <li>Potential challenges to obtaining permits and approvals</li> <li>Moderate to severe geotechnical and hydrology impacts</li> <li>Not compatible with existing infrastructure</li> </ul> | <ul style="list-style-type: none"> <li>High capital costs</li> <li>High lifecycle costs</li> </ul>         |
|                                                                                                                                                                                                                                                |                                                                                                              |                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                          |                        |
| <b>Alternative E</b> – Decommission Lakeshore Rd SPS and gravity sewer along Lakeshore Road / Niagara Boulevard. Relocate Catherine Street SPS to adjacent east lot                                                                            | <ul style="list-style-type: none"> <li>Moderate impacts to aquatic system and groundwater</li> <li>Moderate impacts to existing terrestrial habitats</li> </ul>                                 | <ul style="list-style-type: none"> <li>Addresses odour and aesthetics issues from removal of the control building</li> <li>Impacts to adjacent landowners during construction</li> <li>Requires purchasing of land</li> <li>Moderate to severe impacts to archaeological and natural heritage sites</li> </ul> | <ul style="list-style-type: none"> <li>Moderate ability to meet future flows</li> <li>Low potential for maintenance issues</li> <li>Ability to provide redundancy and adaptability to climate change impacts</li> <li>Potential challenges to obtaining permits and approvals</li> <li>Moderate to severe geotechnical hydrology impacts</li> <li>Not compatible with existing infrastructure</li> </ul>     | <ul style="list-style-type: none"> <li>Moderate capital costs</li> <li>Moderate lifecycle costs</li> </ul> |
|                                                                                                                                                                                                                                                |                                                                                                             |                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                         |                       |

| Alternatives                                                                                                                                                       | Environmental Factors                                                                                                                                                        | Social and Cultural Factors                                                                                                                                                                                                                             | Technical Factors                                                                                                                                                                                                                                                                                                                                                                                                 | Economic Factors                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Alternative F</b> – Relocate Lakeshore Road SPS to south vacant property (west of Lakeshore Road) and relocate Catherine Street SPS to adjacent lot to the east | <ul style="list-style-type: none"> <li>Minimal environmental impacts to aquatic system</li> <li>Moderate potential impacts to terrestrial habitat and groundwater</li> </ul> | <ul style="list-style-type: none"> <li>Addresses odour issues</li> <li>Moderate impacts to adjacent landowners during construction</li> <li>Requires purchasing of land</li> <li>Severe impacts to archaeological and natural heritage sites</li> </ul> | <ul style="list-style-type: none"> <li>Ability to meet future flows demands</li> <li>Ability to meet future redundancy and adaptability to climate change impacts</li> <li>Compatible with the existing infrastructure</li> <li>Potential challenges including obtaining permits and approvals</li> <li>Moderate potential for maintenance issues</li> <li>Moderate geotechnical and hydrology impacts</li> </ul> | <ul style="list-style-type: none"> <li>Moderate capital costs</li> <li>Moderate lifecycle costs</li> </ul> |
|                                                                                                                                                                    |                                                                                           |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                               |                        |
| <b>Alternative G</b> – Relocate Lakeshore Road SPS to south vacant property (east of Lakeshore Road). Relocate Catherine Street SPS to adjacent east lot           | <ul style="list-style-type: none"> <li>Minimal environmental impacts to aquatic system</li> <li>Moderate potential impacts to terrestrial habitat and groundwater</li> </ul> | <ul style="list-style-type: none"> <li>Addresses odour issues</li> <li>Moderate impacts to adjacent landowners during construction</li> <li>Requires purchasing of land</li> <li>Severe impacts to archaeological and natural heritage sites</li> </ul> | <ul style="list-style-type: none"> <li>Ability to meet future flow demands</li> <li>Ability to meet future redundancy and adaptability to climate change impacts</li> <li>Compatible with the existing infrastructure</li> <li>Severe challenges include obtaining permits and approvals</li> <li>Moderate potential for maintenance issues</li> <li>Moderate geotechnical and hydrology impacts</li> </ul>       | <ul style="list-style-type: none"> <li>Moderate capital costs</li> <li>Moderate lifecycle costs</li> </ul> |
|                                                                                                                                                                    |                                                                                          |                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                              |                       |



To aid in the evaluation of the alternatives in terms of the economic considerations, a high-level capital cost estimate was developed which is detailed in Table 7-11 below.

**Table 7-11 Capital Cost Estimates of the Short-Listed Alternatives**

| Alternative                                                                                                                                                                                                                                     | Estimated Construction Capital Cost | Present Value of Estimated Total Lifecycle Costs over a 50 year Period |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------|
| <b>Alternative A</b> – Upgrade Lakeshore Road SPS and Catherine Street SPS at existing locations and property footprints.                                                                                                                       | \$ 5.3M                             | \$ 13.6M                                                               |
| <b>Alternative B</b> – Upgrade both stations, Lakeshore Road SPS at existing site and move Catherine Street to adjacent lot to the east.                                                                                                        | \$ 7.2M                             | \$ 16.0M                                                               |
| <b>Alternative C</b> – Upgrade Lakeshore SPS at existing location with outdoor generator and new forcemain. Construct new Catherine Street SPS at adjacent lot.                                                                                 | \$ 7.7M                             | \$ 16.4M                                                               |
| <b>Alternative D</b> – Decommission Lakeshore Road SPS and gravity sewer along Lakeshore Road / Niagara Boulevard. Relocate Catherine Street SPS to Forsythe Street. Extend sewer from existing Catherine Street to new SPS at Forsythe Street. | \$ 12.0M                            | \$ 19.9M                                                               |
| <b>Alternative E</b> – Decommission Lakeshore and gravity sewer along Lakeshore Road / Niagara Boulevard. Relocate Catherine Street SPS to adjacent east lot.                                                                                   | \$ 10.6M                            | \$ 17.9M                                                               |
| <b>Alternative F</b> – Relocate Lakeshore Road SPS to south vacant property (west of Lakeshore Road) and relocate Catherine Street SPS to adjacent lot to the east.                                                                             | \$ 8.3M                             | \$ 17.3M                                                               |
| <b>Alternative G</b> – Relocate Lakeshore Road SPS to south vacant property (east of Lakeshore Road). Relocate Catherine Street SPS to adjacent east lot.                                                                                       | \$ 8.3M                             | \$ 17.3M                                                               |

## 7.8 Preferred Solution (Step 6)

Following the PIC and considering comments received from the public agencies, Indigenous communities and other interested stakeholders, the preferred alternative was identified to be Alternative C – Upgrade Lakeshore SPS removal of the control building at the existing location with the addition of an outdoor generator and construction of a new Catherine Street SPS at the adjacent lot. This alternative will also include a new forcemain which will follow the existing forcemain route. The construction of the preferred alternative is estimated to take approximately 10 months to complete, starting in mid-2023.

This alternative solution satisfies the problem and opportunity statements given it:

- Considers all project risks, constraints and area specific issues;
- Provides a practical and construction design solution;
- Provides system capacity to meeting existing and projected growth needs to build-out;
- Minimizes total capital, operational, maintenance and lifecycle costs; and
- Minimizes environmental impacts (including environmental, technical, operational, social, and cultural).

Additional benefits of this alternative include:

- Proposed work locations are already owned by the Region. Therefore, no additional delays or costs are involved for land acquisition and disruptions to the existing infrastructure compare to the other alternatives;
- This alternative results in minimal impact to surrounding businesses and residents as site works will be limited to existing SPS site footprint and follow the existing forcemain alignment;
- Lower lifecycle and capital costs when compared to the other short-listed alternatives and
- There will be improved climate change adaptability by increasing pumping and transmission capacity and overall system reliability.



Figure 7-7 Preferred Alternative





## 8 IMPACTS AND MITIGATION MEASURES

The Region intends to start construction of the upgrades to the Lakeshore Road SPS and forcemain in 2022. This construction project is planned to take approximately 8 months to complete. The following subsections provide a description of potential impacts associated with the design, construction and operation of the preferred alternative, and measures the Region will undertake to mitigate possible impacts. It should be noted that these impacts and mitigation measures are specific to the Lakeshore Road SPS site

### 8.1 Noise, Odour, and Air Quality

Noise, odour and air quality considerations of the final solution were considered, and design elements are recommended to ensure these concerns are mitigated where possible.

All of the construction associated with the recommended solution will occur within the existing site boundary and existing forcemain route, which is adjacent to potential sensitive receptors such as residential properties. Construction activities may result in additional odour, noise, and dust around adjacent sites. Mitigation measure that the Region will employ are detailed in Table 8-1.

### 8.2 Archaeological and Built/Cultural Heritage Resources

As mentioned in Section 6, a Stage 1 archaeological assessment was completed for the study area of the Lakeshore Road SPS. The results showed that areas within the Lakeshore Road study area have potential for archaeological interest recommending a Stage 2 archaeological assessment. Mapping of the areas of archaeological potential is shown on Figure 6-5.

The Region, through its detailed design project, will be completing a Stage 2 archaeological assessment and contacting First Nation communities for field investigation involvement and approval. This assessment and review will be completed before finalizing the detailed design. From the assessment, impact and mitigation measures will be outlined which the Region will implement in the design and construction phases of the project.

### 8.3 Natural Heritage

As noted in Section 6, a Natural Heritage investigation was completed within the study area which identified that where mitigation measures can be employed effectively, no residual impact to the natural heritage or tree resources is anticipated, as detailed in Table 8-1.

### 8.4 Water Courses

An erosion and sediment control plan should be developed due to the proximity to the Niagara River and associated fish habitat to minimize the risk of sedimentation. A geotechnical and hydrogeological investigation study is proposed to be completed prior to the detailed design to analyse the anticipated soil conditions and construction dewatering requirements. Mitigation measures are detailed in Table 8-1, but are undetermined at this time until the required geotechnical and hydrogeological investigations are completed.



## 8.5 Traffic Management

Construction of the preferred alternative will impact traffic along Lakeshore Road and surrounding areas. Table 8-1 summarizes some potential impacts and the associated mitigation measures that should be employed during the design and construction phases of the project. During detailed design, consideration will be given for operational access and traffic impacts to ensure mitigation measures are applied.

## 8.6 Utilities

The recommended solution for the Lakeshore Road SPS comprises utilities typical of an urban area including municipal water, sanitary and storm sewers, electrical and other utilities. The Region identified the location of known existing utilities and services within existing rights-of-way and the pumping station. All utilities in the vicinity of the project site and construction area will be confirmed during detailed design to minimize or avoid potential impacts.

## 8.7 Cultural Heritage Resources and Landscapes

As discussed in Section 6, there are several areas within the Lakeshore Road SPS study area that have CHVI, which include the following:

- One property with buildings or structures 40 or more years old of potential CHVI at 8 Lakeshore Road
- Two potential landscapes with CHVI: Mather Arch Park and the Niagara River

Mapping of these landscapes and properties can be found on Figure 6-6. Table 8-1 details the appropriate mitigation measures that should be implemented.

## 8.8 Private Property Access

Access to residential properties may be required during the construction of the Lakeshore SPS as the immediate properties surrounding the site are residential properties. Mitigation measures for potential disruption are detailed in Table 8-1.

**Table 8-1 Impact and Mitigation Measures for the Design and Construction Phases**

| Project Phase | Category                                    | Impact                                                                                        | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|---------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Design        | Noise, Odour, Air Quality (Operation)       | Impacts of everyday noise from operation of the SPS                                           | <ul style="list-style-type: none"> <li>• Ensure adequate landscaping buffer between SPS site and surrounding receptors to reduce noise</li> <li>• Supplement pumping station upgrades by having the generator exhaust system be equipped with appropriate noise abatement equipment to minimize impacts to the nearest sensitive receptors</li> <li>• Develop a construction staging plan to minimize community disruption</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|               | Natural Heritage Features                   | Impacts from construction on surrounding trees and breeding birds                             | <ul style="list-style-type: none"> <li>• Should tree and vegetation removal be required during the bird breeding season (March 31 to August 31), a qualified avian biologist should complete a bird nesting survey to identify any compliance with the MBCA</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|               |                                             | Impacts to surrounding trees / vegetation                                                     | <ul style="list-style-type: none"> <li>• Complete a tree protection plan once the construction footprint is finalized and clearly delineated. This plan should include the delineation of tree protection zone/driplines with tree protection fencing.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Water Course (Niagara River)                | Associated impacts to the Niagara River and associated fish habitat and risk of sedimentation | <ul style="list-style-type: none"> <li>• Develop an Erosion and Sediment Control Plan to minimize impacts to the Niagara River, associated fish habitat and minimize risk of sedimentation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|               |                                             | Potential to decrease water quality as a result of dewatering into the Niagara River          | <ul style="list-style-type: none"> <li>• Develop a Dewatering Plan to identify measures to protect water quality of the ultimate receiver. It is recommended that the plan provide the following mitigation measures: <ul style="list-style-type: none"> <li>○ Implement measures for managing water being pumped/diverted from excavations such that sediment is filtered out prior to the water entering a waterbody</li> <li>○ Ensure dewatering activities are addressed in a site-specific Environmental Management Plan to address alterations to the baseflow and discharge of water back to surface features</li> <li>○ Include dewatering discharge points on the final Erosion and Sedimentation Control Plans for the project</li> </ul> </li> </ul> <p><i>*Anticipated soil conditions and dewatering impacts will be determined/ analyzed during geotechnical and hydrogeological investigations</i></p> |
|               | Cultural Heritage Properties and Landscapes | Direct and or indirect impact to CHVI properties and landscapes                               | <ul style="list-style-type: none"> <li>• Complete a Cultural Heritage Report on Existing Conditions and Preliminary Impact Assessment (CHR) prior to detailed design. The report should identify and outline the impacts to potential built heritage resources and cultural heritage landscapes within and adjacent to the study area and recommend appropriate mitigations to avoid or reduce adverse impacts.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Construction  | Noise, Odour and Air Quality                | Noise and dust as a result of construction                                                    | <ul style="list-style-type: none"> <li>• Use low noise equipment during construction, where possible; and</li> <li>• Restrict working hours for construction, in accordance with local Noise Control By-laws.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               | Natural Heritage Features                   | Impacts from construction on surrounding trees and breeding birds and roosting bats           | <ul style="list-style-type: none"> <li>• Ensure vegetation removal (including dead standing trees, pruning/trimming of trees, grubbing of grassed area to facilitate construction) be timed to avoid breeding bird season which extends from March 31 to August 31 and roosting bats which extends from April 1 to September 30</li> <li>• Disturbance in proximity to the existing SPS or other built structures on the property should also be undertaken outside of the bird nesting season or after a screening of the structure has been completed by a qualified biologist to rule out use of the structure by breeding birds</li> </ul>                                                                                                                                                                                                                                                                        |



| Project Phase | Category        | Impact                                                   | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|-----------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                 | Impacts to surrounding trees / vegetation                | <ul style="list-style-type: none"> <li>Heavy equipment should remain outside of the dripline of the trees and within the delineated construction and staging area.</li> </ul>                                                                                                                                                                                                          |
|               | Traffic         | Impact to pedestrian accessibility and nearby businesses | <ul style="list-style-type: none"> <li>Provide adequate and clear construction signage and maintain clear and safe pedestrian pathway.</li> <li>Public outreach and communication including regular status updates and a hotline for the general public and surrounding businesses to report any concerns.</li> </ul>                                                                  |
|               |                 | Local Traffic delays                                     | <ul style="list-style-type: none"> <li>Maintain a Traffic Management Plan throughout the construction period with dedicated flag persons to ensure at least one lane of traffic is maintained at all times.</li> </ul>                                                                                                                                                                 |
|               | Property Access | Possible disruptions to private property access          | <ul style="list-style-type: none"> <li>Access to residential properties will be maintained at all times where possible. Should this not be possible, disruptions to property access will be planned in advance and communication with the affected property owner. For the duration of the construction, all activities should be confined to the designated working areas.</li> </ul> |

## 9 PUBLIC AND AGENCY CONSULTATION

Consultation with potentially affected or interested stakeholders, such as the public, review agencies, Indigenous communities, and other stakeholders, is an integral component of the MCEA process, enabling the Region to inform the general public about the MCEA while eliciting input from potentially interested and affected parties during the MCEA process.

At the outset of the public consultation process, the Region undertook a consultation and communication program with a goal to effectively obtain feedback from members of the public. The primary objective of the plan was to encourage two-way communication with the relevant agencies and local community. More specifically, the plan was designed to:

- Present clear and concise information to stakeholders at key stages of the MCEA process.
- Build on past communication protocols and consultation plans from previous MCEAs and municipal planning initiatives for consistency and continuity purposes.
- Contact external agencies to obtain legislative or regulatory approvals, and to collect pertinent technical information.
- Provide opportunities for the general public, local councilors, stakeholders, external agencies (including federal, provincial and regional) and special interest groups to participate in the MCEA process.
- Meaningfully engage and consult with Indigenous communities in Ontario.
- Provide relevant information to interested and affected stakeholders early and often throughout the planning process.
- Consider feedback and comments when evaluating alternative solutions and in developing a preferred solution.,
- Comply with MCEA consultation requirements.

Comments received throughout the course of the MCEA were considered and are documented in 9.1.5 below and further documentation related to the consultation activities undertaken during this MCEA is included in Appendix A.

### 9.1 Communication and Consultation Overview

The MCEA specifies two mandatory points of contact for Schedule B projects:

- An invitation for the public, Indigenous communities, agencies and other stakeholders to comment on the alternative solutions under consideration.
- A Notice of Completion for the project and an opportunity for the public, Indigenous communities, agencies and other stakeholders to review the Project File.

The following sections document how the Region has met MCEA consultation requirements.

#### 9.1.1 Contact List

A list of stakeholders, including members of the public, review agencies, Indigenous Communities and other interested parties was developed at the outset of the study to invite participation in the planning process. The contact list was updated throughout the study as more individuals became



aware of the study or provided feedback. A copy of the contact list is provided in Appendix A with sensitive information redacted.

### 9.1.2 Project Website

A link to the project website ( <https://niagararegion.ca/projects/lakeshore-rd-sps/default.aspx> ) was provided in the notices that were sent out. Project notices, PIC materials, relevant information and a copy of this Project File have been posted on the project website.

### 9.1.3 Notice of Commencement

A Notice of Commencement was issued in local newspapers to inform the public that a MCEA was being conducted to review the potential alternatives of the Lakeshore Road SPS in the Town of Fort Erie. The Notice was issued April 28, 2021 and April 29, 2021 and was made public by the following means:

- Mailed to the stakeholders listed in the contact list;
- Mailed to residential and commercial properties near the Study Area; and
- Advertised in the Fort Erie Observer (April 29, 2021), Niagara This Week (April 29, 2021), and on the Niagara Region website (April 28, 2021) (<https://www.niagararegion.ca/projects>).

### 9.1.4 Public Information Centre

As required under the MCEA process, a PIC for this project was held as a virtual session to encourage attendees to review the presentation and display boards. The MCEA's PIC was intended to elicit input on the MCEA process, constraints and opportunities, alternative concepts and strategies to address the problem and opportunity statement; specifically:

- Obtain input on the alternative solutions being investigated under the Lakeshore Road EA study.
- Obtain input on the evaluation criteria utilized to determine the recommended alternative of the Lakeshore Road SPS.

The Notice of PIC was communicated by the following means:

- Mailed to the stakeholders listed in the contact list;
- Mailed to residential and commercial properties in proximity to the study area; and
- Advertised in The Niagara This Week (August 26, 2021) and The Fort Erie Observer (September 2, 2021).

The PIC was conducted via a virtual recorded presentation with audio and transcribed as shared online. This video was made available on the Region's project website beginning September 8, 2021. This was followed by a two-week period to submit comments to the project team through the Region's project website.

The public meeting materials included:

- Display panels: Including information about the project using both text and visuals.

- **Comment Sheets:** Participants could fill out a comment sheet online as an opportunity to provide comments, make suggestions or ask questions about the project and/or the MCEA process.

Copies of the Notice, display panels and other material available at the meeting are included in Appendix A.

### 9.1.5 Comments Received

In general, there was support for the preliminary preferred alternative, however there were some key issues raised by the members of the public through the PIC and MCEA process. Table 9-1 below provides a summary of issues raised by the public and the responses provided by the Region to mitigate these issues through the proposed project implementation. A more detailed list of issues raised is provided in Appendix A.

**Table 9-1 Consultation Comments**

| Stakeholder & Date Received                                                       | Summary of Comments                                                                                                                                 | Action                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ministry of the Environment and Conservation and Parks (MECP)</b><br>28-Apr-21 | MECP provided list of Aboriginal Communities to be included in Consultation Plan.                                                                   | <ol style="list-style-type: none"> <li>1. Comment filed.</li> <li>2. Aboriginal community contacts added to the contact list.</li> </ol>                                                                                                                                                   |
| <b>Local Resident</b><br>10-May-21                                                | Inquired if the Region has decided on an alternative solution. Noted concerns regarding odour issues and preferred for the station to be relocated. | <ol style="list-style-type: none"> <li>1. Comment filed.</li> <li>2. Added contact to contact list.</li> <li>3. Advised that the project is in early stages of planning and are considering multiple solutions for the upgrades, no preferred solution has been identified yet.</li> </ol> |
| <b>Local Resident</b><br>21-Aug-21                                                | Request to be added to the mailing list.                                                                                                            | <ol style="list-style-type: none"> <li>1. Comment filed.</li> <li>2. Added contact to contact list.</li> </ol>                                                                                                                                                                             |



| Stakeholder & Date Received        | Summary of Comments                                                                                                                                                                                                                                                                                                         | Action                                                                                                                                                                                                                                            |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Local Resident</b><br>23-Sep-21 | Concerns regarding the construction of a new Catherine Street Station at the adjacent lot next to the existing Catherine Street SPS at 8 Catherine Street, Fort Erie. Expressed a preference for an underground solution for the Catherine Street Station as opposed to the proposed solution of an above ground structure. | <ol style="list-style-type: none"> <li>1. Comment filed.</li> <li>2. Added contact to contact list.</li> <li>3. Clarified the Region's design standards and noted that an equipment shelter would not suffice for the station's flows.</li> </ol> |

## 9.2 Notice of Completion

The Notice of Completion was distributed to local stakeholders on July 14, 2022 to notify the public and that this Project File was being placed on the “public record” for the required 30-day public and agency review period. Agencies, local businesses and residents were informed of the Notice of Completion by the following means:

- Mailed copy of the notice and letter addressed to the agencies within the mailing list;
- Mailed copy of the notice and letter addressed to local businesses and residential properties within the study area;
- Advertised in the local newspapers, the Fort Erie Observer and Niagara This Week; and
- Advertised on the Region's website at <https://www.niagararegion.ca/projects>.

This notice satisfies the final consultation point of contact in the MCEA process. A copy of the notice and mailed letters are provided in Appendix A.

During the review period, the MCEA entitles interested persons, Aboriginal communities, or government agencies who have significant concern which cannot be resolved to request the MECP to issue a Part II Order under the EA Act. If there are no Part II Order requests, and following the receipt of other required approvals, the proposed SPS may proceed to design and construction.

## 9.3 Agency Consultation

Consultation with review agencies is also an essential part of the communication component of the MCEA process. Agencies were consulted in an effort to gain valuable information they may have, obtain their feedback on alternatives and determine how to best proceed with the project. Relevant agencies were notified of the commencement, PIC and project completion.

The following agencies were circulated Notices and PIC details related to this MCEA:

- MECP
- Ministry of Indigenous Affairs
- Niagara Peninsula Conservation Authority
- Town of Fort Erie

In response to the Notice of Commencement, an email correspondence was initiated to the MECP West Central Region, dated April 28, 2021 to provide the Notice of Commencement and project website. A response was received May 25, 2021 that provided additional guidance with respect to the Ministry's internal protocol for Aboriginal consultation. The MECP noted that the Six Nations of the Grand River Territory (Both Elected and Haudenosaunee Confederacy Chief's Council) and the Mississaugas of the New Credit First Nations be notified for the project and participate in the activities. A copy of the letter from the MECP can be found in Appendix A.

#### 9.4 Indigenous Communities Consultation

Indigenous communities were consulted to build meaningful dialogue with Indigenous Communities and government agencies, and to ensure consultation is satisfied through this MECA process.

At the onset of the project, the MCEA team consulted the guidelines available on the Ontario Ministry of Indigenous Affairs website to determine Indigenous Communities consultation requirements ([Environmental assessments: consulting Indigenous communities | ontario.ca](https://www.ontario.ca/en/government/environmental-assessments-consulting-indigenous-communities)). The project team used the Indigenous and Northern Affairs Canada (INAC) Aboriginal and Treaty Rights Information System (ATRIS) to help identify which Indigenous Communities may be interested in or potentially impacted by the proposed project. Additionally, the project team contacted MECP to request feedback on the list of Indigenous Communities generated using ATRIS. A response was provided from MECP, and as a result these Indigenous Communities were added to the project contact list.

By searching a 100 km radius around the Town in ATRIS, and with the additional input of MECP, the following Indigenous Communities were included on the project contact list:

- Six Nations of the Grand River Territory (Both Elected Council and Haudenosaunee Confederacy Chief's Council)
- Mississaugas of the New Credit First Nation

Letters were mailed to all communities to advise of the project and the PIC. Follow up phone calls were also made to confirm receipt of the notice and letter and the invitation for a consultation meeting. The Stage 1 AA reports were sent to the Indigenous Communities mentioned above for review and comment. No responses were received from any of the Indigenous Communities.

Under this study, a Stage 2 AA will be conducted prior to completing the detailed design. Aboriginal communities will be contacted to gauge interest in a field representative attending the associated field works. If archaeological resources are found during the Stage 2 AA, the Region will implement measures to avoid or mitigate impacts in accordance with the MHSTCI requirements.



At this time there are no concerns identified through these methods of communication. A detailed list of Indigenous Communities contacted and a consultation log documenting all correspondences are included in Appendix A.

## 10 PERMITS AND APPROVALS

Compliance with the EAA and the MCEA does not preclude the Region from additional agency approvals for the recommended project. Following completion of the MCEA process, the Region must undertake discussions with relevant agencies to ensure that all applicable approvals are received prior to implementing projects.

The following table highlights approvals which may be necessary to carry out the proposed project. Additional approvals may become applicable or be specified by affected agencies at any time.

**Figure 10-1 Permits and Approvals**

| Agency                                                     | Description of Permit / Approval                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of the Environment, Conservation and Parks (MECP) | <ul style="list-style-type: none"> <li>ECA required for SPS upgrades.</li> <li>A Permit to Take Water is required for any water takings over 50,000 L/day. For a taking of greater than 50,000 L/day, but less than 400,000 L/day, the Permit should be obtained via the Environmental Activity and Sector Registry. For takings greater than 400,000 L/day, a Permit to Take water (PTTW) shall be required via the conventional application process.</li> </ul> |
| Ministry of Tourism, Culture and Sport (MTCS)              | <ul style="list-style-type: none"> <li>The Ministry of Tourism, Culture and Sports must approve of the fieldwork and reporting completed as part of the archaeological assessment and must deem it compliant with the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists.</li> <li>Additional surveys may be required contingent on the MTCS review of Stage 1 Study Report.</li> </ul>                                                       |
| Town of Fort Erie                                          | Building permit and Site Plan Approval                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Town of Fort Erie                                          | Site plan approval and building permits will be required from the Town of Fort Erie for the road construction works and works revolving around the new station                                                                                                                                                                                                                                                                                                    |
| Niagara Parks Commission                                   | Permission to Enter, New Agreement or Amendment and Traffic Control Plan                                                                                                                                                                                                                                                                                                                                                                                          |

| Agency                                   | Description of Permit / Approval                                                          |
|------------------------------------------|-------------------------------------------------------------------------------------------|
| Niagara Region                           | Road Occupancy Permit and Construction Encroachment (by the contractor)                   |
| Electrical Safety Authority (ESA) Permit | ESA permit to ensure proper electrical safety standards and codes are met for the station |

## 11 SUMMARY AND CONCLUSIONS

During this MCEA, the Region worked closely with key stakeholders to address and resolve key issues or challenges associated with evaluating alternative solutions for the Lakeshore Road SPS which continues to experience ongoing maintenance and operation concerns, as well as anticipated growth.

Based on the comprehensive review of seven different alternative solutions against a multiple bottom line evaluation process that takes into consideration environmental, social, technical, and economic factors, **Alternative C – Upgrade Lakeshore SPS at existing location with outdoor generator and new forcemain. Construct new Catherine SPS at adjacent lot** was identified as the preferred solution to the problem and opportunity statement. The preferred solution offers the best asset value to the Region from an operations, maintenance and lifecycle perspective whilst having the least overall impact to the natural and social environment.

Provided no comments or Part II orders are received during the 30-day review process, it is recommended that the Region proceed with upgrade works at the Lakeshore Road SPS and Catherine St. SPS according to the solution outlined herein.

### 11.1 Public Review Period and Next Steps

At the conclusion of Phase 2 of the MCEA process for Schedule B projects, a Project File is prepared, and a Notice of Completion is issued. The Project File report (PFR) for the Lakeshore Road SPS Environmental Assessment Study in the Town of Fort Erie (i.e., this report) documents the decision making process during the MCEA. The Notice of Completion of this MCEA (issued on July 14, 2022) notifies members of the public and agencies that the PFR would be available for public review for a thirty day period (30-days). During the 30 day review period the PFR was made available for public review at the following locations during normal business hours:



Clerk's Department  
Regional Municipality of Niagara  
1815 Sir Isaac Brock Way, P.O. Box 1042  
Thorold, ON L2V 4T7  
Tel: (905) 980-6000, ext. 3222  
Monday-Friday 8:30 a.m. – 4:30 p.m.

Clerk's Department  
Town of Fort Erie  
1 Municipal Centre Drive  
Fort Erie, ON L2A 2S6  
Tel: (905) 871-1600  
Monday-Friday 8:30 a.m. – 4:30 p.m.

Written comments on this Project File should be submitted to:

Robert Stret  
Project Manager, Water and Wastewater Services Niagara Region  
3501 Schmon Pkwy., PO Box 1042  
Thorold, ON, L2V 4T7  
905-658-5451  
[Robert.Stret@niagararegion.ca](mailto:Robert.Stret@niagararegion.ca)

In accordance with the Municipal Class Environmental Assessment (2000, as amended in 2007, 2011, and 2015; and considering the 2020 addendum currently under review), if no concerns are expressed by the conclusion of the specified review period, the Region may proceed with the design and construction of the project as described in this Project File.

# **APPENDIX A: PUBLIC CONSULTATION**



## **APPENDIX A1: STAKEHOLDER LIST**

Lakeshore Road and Catherine St SPS Class EA (Niagara Region)  
Stakeholder Register

| First Name                    | Last Name     | Company/Organization                                     | Department                                      | Job Title                                            | Street                                                | City                | Province | Postal Code | Email                               | Telephone              |
|-------------------------------|---------------|----------------------------------------------------------|-------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|---------------------|----------|-------------|-------------------------------------|------------------------|
| <b>ABORIGINAL COMMUNITIES</b> |               |                                                          |                                                 |                                                      |                                                       |                     |          |             |                                     |                        |
| Ross/Anne                     | Archibald     | Assembly of First Nations                                |                                                 | Regional Chief                                       | 400-468 Queen Street E                                | Toronto             | ON       | M5A 1T7     | ORCEA@cop.org                       | 416-597-1266           |
| Allen                         | MacNaughton   | Haudenosaunee Development Institute (HDI)                |                                                 | Chief                                                | 16 Sunrise Court, Suite 600, P.O. Box 714             | Ohsweken            | ON       | N0A 1M0     | hdi2@bellnet.ca                     | 519-445-4222           |
| Mark                          | Knell         | Metis Nation of Ontario                                  | Environmental Assessments and Regulatory Issues | Manager                                              | 311-75 Sherbourne Street                              | Toronto             | ON       | M5A 2P9     |                                     | 416-977-9881           |
| Derrick                       | Pont          | Niagara Region Metis Council                             |                                                 | President                                            | 3250 Schmon Parkway, Unit 1a                          | Thorold             | ON       | L2V 4Y6     | pontdj@hotmail.com                  | 905-682-3487 (ext 306) |
| Robin                         | Varstone      | Six Nations of the Grand River Territory                 |                                                 | Consultation Supervisor                              | 1695 Chiefswood Road, P.O. Box 5000                   | Ohsweken            | ON       | N0A 1M0     | robin.varstone@sixnations.ca        | 519-732-2905           |
| Mark B.                       | Hill          | Six Nations of the Grand River Territory                 |                                                 | Chief                                                | 1695 Chiefswood Road, P.O. Box 5000                   | Ohsweken            | ON       | N0A 1M0     | markhill@sixnations.ca              |                        |
| Joanne                        | Thomas        | Six Nations of The Grand River Territory                 | Land and Resources                              | Consultation Supervisor / Archaeology Coordinator    | 2498 Chiefswood Road, P.O. Box 5000                   | Ohsweken            | ON       | N0A 1M0     |                                     | 519-753-0665           |
| Leroy                         | Hill          | Haudenosaunee Confederacy Chiefs Council                 |                                                 | Secretary                                            | 2634 6th Line Road, P.O. Box 714, Suite 600           | Ohsweken            | ON       | N0A 1M0     | jocko@sixnations.ca                 | 519-445-4222           |
| Wayne                         | Hill          | Haudenosaunee Confederacy Chiefs Council                 |                                                 |                                                      |                                                       |                     |          |             | tworowarchaeology@gmail.com         |                        |
| Todd                          | Williams      | Haudenosaunee Confederacy Chiefs Council                 |                                                 | Archaeology Coordinator                              |                                                       |                     |          |             | williams.todde@gmail.com            |                        |
| Cathie                        | Jamieson      | Mississaugas of the Credit First Nation                  | Land, Air, Water and Natural Resources          | Councillor                                           | 2789 Mississauga Road R.R. #6                         | Hagersville         | ON       | N0A 1H0     | cathiej@mncfn.ca                    | 905-912-8940           |
| Fawn                          | Sault         | Mississaugas of the Credit First Nation                  | Department of Consultation & Accommodation      | Consultation Manager                                 | 4065 Hwy. 6                                           | Hagersville         | ON       | N0A 1H1     | Fawn.Sault@mncfn.ca                 | 905-768-4260           |
| Mark                          | LaForme       | Mississaugas of the Credit First Nation                  |                                                 | Director of Consultation and Accommodation           | 4066 Hwy. 6                                           | Hagersville         | ON       | N0A 1H2     | Mark.Laforme@mncfn.ca               | 905-768-4260           |
| Megan                         | DeVries       | Mississaugas of the Credit First Nation                  |                                                 | Archaeology Coordinator                              |                                                       |                     |          |             | Megan.DeVries@mncfn.ca              |                        |
| Joelle                        | Williams      | Mississaugas of the Credit First Nation                  |                                                 | Field Coordinator                                    | 4065 Highway 6 North                                  | Hagersville         | ON       | N0A 1H2     | Joelle.Williams@mncfn.ca            | 905-768-4260           |
| Matthew                       | Garrow        | Indigenous Relations and Reconciliation                  | Strategic Planning and Economic Policy          | Director                                             | 4th Flr, 160 Bloor St E                               | Toronto             | ON       | M7A 2E6     | matt.garrow@ontario.ca              | 416-314-1607           |
| Geoff                         | Stonefish     | Association of Iroquois and Allied Indians               |                                                 | Office Manager                                       | 387 Princess Avenue                                   | London              | ON       | N6B 2A7     | gstonefish@aiaa.on.ca               | 519-434-2761           |
| <b>LOCAL AGENCY</b>           |               |                                                          |                                                 |                                                      |                                                       |                     |          |             |                                     |                        |
| Sue                           | Mabee         | District School Board of Niagara                         |                                                 | Supervisor of Planning                               | 191 Carlton Street                                    | St. Catharines      | ON       | L2R 7P4     | sue.mabee@dsbn.org                  |                        |
| Kathy                         | Levinski      | Niagara Catholic District School Board                   |                                                 | Administrator of Facilities Services                 | 430 Rice Rd                                           | Welland             | ON       | L3C 7C1     | kathy.levinski@ncdsb.com            |                        |
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| <b>FEDERAL AGENCIES</b>       |               |                                                          |                                                 |                                                      |                                                       |                     |          |             |                                     |                        |
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| Robert                        | Phillips      | International Joint Commission                           |                                                 | Senior Water Quality and Ecosystems Advisor          | 234 Laurier Avenue West, 22nd Floor                   | Ottawa              | ON       | N9A 6T3     |                                     |                        |
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## **APPENDIX A2: PUBLIC NOTICES**

## NOTICE OF STUDY COMMENCEMENT

# LAKESHORE ROAD SANITARY PUMPING STATION MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT TOWN OF FORT ERIE

### PURPOSE OF THE STUDY

Niagara Region has initiated a Municipal Class Environmental Assessment (EA) Study to assess the preferred alternative for the required upgrades to the Lakeshore Road Sewage Pumping Station (the site) located in the Town of Fort Erie at 14A Lakeshore Rd. The station was commissioned in 1985 and has since undergone minor equipment replacements and various maintenance activities while continuing to service the Town. Recent investigations indicate the station requires upgrades based on the infrastructure's deteriorating condition and to accommodate the projected population growth.

Investigations conducted at the site indicate aging infrastructure resulting in high maintenance costs. In addition, Niagara Region's 2017 Water and Wastewater Master Servicing Plan indicates increased capacity demands due to the growing population in the area. Considering these factors, Niagara Region has initiated a Municipal Class EA to conduct an assessment of the site and determine the preferred solution to address the condition and future requirements of the station and site.

This study is being planned as a Schedule "B" Class EA, satisfying Phases 1 and 2 of the Municipal Engineers Association (MEA) Class EA process, which is a planning process approved under Ontario's Environmental Assessment Act. This study will define the problems and opportunities associated with the site, develop and evaluate alternative strategies, determine the most feasible solution and identify methods to avoid or minimize impacts to the community and natural environment.

### FOR MORE INFORMATION

Niagara Region encourages the public and stakeholders to actively participate in this planning process. A Public Information Centre will be planned and hosted virtually to present details about the study, the process used to decide on possible solutions and allow you the opportunity to share your comments and concerns.

Notification of this upcoming Public Information Centre will be advertised in the local community newspaper and via Niagara Region's website. Upon completion of the study, a Project File Report documenting the study process will be prepared and made available for public review and comment. Anyone who wishes to comment on or to be involved in this study should indicate their interest, preferably in writing to:

Stephanie McGill  
Project Manager,  
Water & Wastewater Services  
Niagara Region  
3501 Schmon Pkwy., PO. Box 1042  
Thorold, ON L2V 4T7  
905-980-6000, ext. 3176  
fax: 905-685-5205  
[stephanie.mcgill@niagararegion.ca](mailto:stephanie.mcgill@niagararegion.ca)

Amanda Beattie, P.Eng., P.Geo., CRL,  
CMRP, PMP  
Project Manager  
GM Blue Plan Engineering Limited  
1266 South Service Rd., Unit C31  
Stoney Creek, ON L8E 5R9  
905-643-6688  
[amanda.beattie@gmblueplan.ca](mailto:amanda.beattie@gmblueplan.ca)



Personal information collected or submitted in writing at public meetings will be collected, used and disclosed by members of Regional Council and Regional staff in accordance with the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA). The written submissions including names, contact information and reports of the public meeting will be made available. Questions should be referred to the **Privacy Office** at 905-980-6000, ext. 3779 or [FOI@niagararegion.ca](mailto:FOI@niagararegion.ca).

If you require any accommodations in order to attend and participate in meetings or events, please let us know in advance so that arrangements can be made in a timely manner. Please contact the **Accessibility Advisory Coordinator** at 905-980-6000, ext. 3252 or [accessibility@niagararegion.ca](mailto:accessibility@niagararegion.ca).

This notice was first issued on April 29, 2021.



## **Public Information Centre No.1**

### **Catherine Street and Lakeshore Road Sewage Pumping Stations**

#### **Municipal Class Environmental Assessment**

#### **Town of Fort Erie**

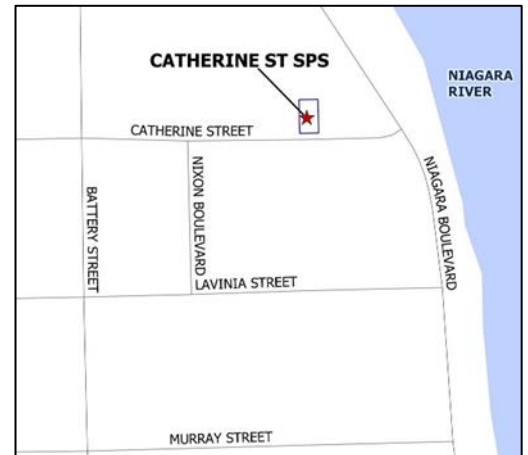
*This notice was first issued on August 27, 2021.*

#### **The Study**

Niagara Region has initiated a Municipal Class Environmental Assessment (EA) Study to assess the preferred alternative for the required upgrades to the Catherine Street and Lakeshore Road Sewage Pumping Stations (the sites) located in the Town of Fort Erie at 8 Catherine St. and 14A Lakeshore Rd. The Catherine Street station was commissioned in 1981 and the Lakeshore Road station was commissioned in 1985. Both stations have since undergone minor equipment replacements and various maintenance activities while continuing to service the Town. Recent investigations indicate the stations require upgrades based on the infrastructure's deteriorating condition, high maintenance costs and to accommodate the projected population growth as indicated in the Niagara Region's 2016 Water and Wastewater Master Servicing Plan.

#### **The Process**

This study is being planned as a Schedule "B" Class EA, satisfying Phases 1 and 2 of the Municipal Engineers Association (MAE) Class EA process, which is a planning process approved under Ontario's Environmental Assessment Act. This study will define the problem(s) / opportunities associated with the sewage pumping stations, develop and evaluate alternative strategies, determine the most feasible solutions, and identify methods to avoid or minimize impacts to the community and natural environment.





## For More Information

Niagara Region encourages the public and stakeholders to actively participate in this planning process. Information about the project will be available on Niagara Region's website as part of Public Information Centre (PIC) No. 1. You can learn about how this project will contribute to Niagara's overall growth plan, key servicing issues being considered, and how you can have your voice heard.

## Public Information Centre No. 1 Details

A recorded video and information regarding the Catherine Street and Lakeshore Road Sewage Pumping Stations will be made available on the project website (access using the links below) beginning **Wednesday Sept. 8, 2021**. This will be followed with a two-week period to submit PIC No. 1 related comments to the Project Team.

[niagararegion.ca/projects/catherine-street](https://niagararegion.ca/projects/catherine-street)

[niagararegion.ca/projects/lakeshore-rd-sps](https://niagararegion.ca/projects/lakeshore-rd-sps)

Upon completion of the study, a Project File Report documenting the study process will be prepared and made available for public review and comment. Anyone who wishes to comment on or to be involved in this study should indicate their interest, preferably in writing to the Project Team.

**Stephanie McGill**  
Project Manager, Water and  
Wastewater Services Division, Niagara  
Region  
3501 Schmon Pkwy., PO Box 1042  
Thorold, ON, L2V 4T7  
905-980-6000 ext. 3176  
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**Amanda Beattie**, P.Eng., P.Geo., CMRP, PMP  
Project Manager, Partner  
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# **APPENDIX A3: PUBLIC INFORMATION CENTRE MATERIALS**

# MOVING WATER FORWARD

## Public Information Centre No.1 Catherine Street and Lakeshore Road Sewage Pumping Stations Municipal Class Environmental Assessment Town of Fort Erie

### THE STUDY

Niagara Region has initiated a Municipal Class Environmental Assessment (EA) Study to assess the preferred alternative for the required upgrades to the Catherine Street and Lakeshore Road Sewage Pumping Stations (the sites) located in the Town of Fort Erie at 8 Catherine St. and 14A Lakeshore Rd. The Catherine Street station was commissioned in 1981, and the Lakeshore Road station was commissioned in 1985. Both stations have since undergone minor equipment replacements and various maintenance activities while continuing to service the Town. Recent investigations indicate the stations require upgrades based on the infrastructure's deteriorating condition, high maintenance costs and to accommodate the projected population growth as indicated in the Niagara Region's 2016 Water and Wastewater Master Servicing Plan.

### THE PROCESS

This study is being planned as a Schedule "B" Class Environmental Assessment, satisfying Phases 1 and 2 of the Municipal Engineers Association (MAE) Class Environmental Assessment process, which is a planning process approved under Ontario's Environmental Assessment Act. This study will define the problem(s) / opportunities associated with the sewage pumping stations, develop and evaluate alternative strategies, determine the most feasible solutions, and identify methods to avoid or minimize impacts to the community and natural environment.

### FOR MORE INFORMATION

Niagara Region encourages the public and stakeholders to actively participate in this planning process. Information about the project will be available on Niagara Region's website as part of Public Information Centre No. 1. You can learn about how this project will contribute to Niagara's overall growth plan, key servicing issues being considered, and how you can have your voice heard.



### PUBLIC INFORMATION CENTRE NO. 1 DETAILS

A recorded video and information regarding the Catherine Street and Lakeshore Road Sewage Pumping Stations will be made available on the project website beginning **Wednesday, Sept. 8, 2021.**

[niagararegion.ca/projects/catherine-street](https://niagararegion.ca/projects/catherine-street)  
[niagararegion.ca/projects/lakeshore-rd-sps](https://niagararegion.ca/projects/lakeshore-rd-sps)  
This will be followed with a two-week period to submit Public Information Centre No. 1 related comments to the Project Team.

Upon completion of the study, a Project File Report documenting the study process will be prepared and made available for public review and comment. Anyone who wishes to comment on or to be involved in this study should indicate their interest, preferably in writing to the Project Team.

**Stephanie McGill, Dipl.T. (Civil)**  
Project Manager  
Water and Wastewater Services Niagara Region  
3501 Schmon Pkwy., PO Box 1042  
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**Amanda Beattie, P.Eng., P.Geo., CMRP, PMP**

Project Manager, Partner  
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This notice was first issued on Aug. 26, 2021.



## Public Information Centre No. 1 Catherine Street and Lakeshore Road Sewage Pumping Stations Municipal Class Environmental Assessment Town of Fort Erie

### THE STUDY

Niagara Region has initiated a Municipal Class Environmental Assessment (EA) Study to assess the preferred alternative for the required upgrades to the Catherine Street and Lakeshore Road Sewage Pumping Stations (the sites) located in the Town of Fort Erie at 8 Catherine St. and 14A Lakeshore Rd. The Catherine Street station was commissioned in 1981, and the Lakeshore Road station was commissioned in 1985. Both stations have since undergone minor equipment replacements and various maintenance activities while continuing to service the Town. Recent investigations indicate the stations require upgrades based on the infrastructure's deteriorating condition, high maintenance costs and to accommodate the projected population growth as indicated in the Niagara Region's 2016 Water and Wastewater Master Servicing Plan.

### THE PROCESS

This study is being planned as a Schedule "B" Class Environmental Assessment, satisfying Phases 1 and 2 of the Municipal Engineers Association (MAE) Class Environmental Assessment process, which is a planning process approved under Ontario's Environmental Assessment Act. This study will define the problem(s) / opportunities associated with the sewage pumping stations, develop and evaluate alternative strategies, determine the most feasible solutions, and identify methods to avoid or minimize impacts to the community and natural environment.

### FOR MORE INFORMATION

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### PUBLIC INFORMATION CENTRE NO. 1 DETAILS

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[niagararegion.ca/projects/catherine-street](https://niagararegion.ca/projects/catherine-street)  
[niagararegion.ca/projects/lakeshore-rd-sps](https://niagararegion.ca/projects/lakeshore-rd-sps)

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**Stephanie McGill, Dipl.T. (Civil)**

Project Manager

Water and Wastewater Services Niagara Region  
3501 Schmon Pkwy., PO Box 1042

Thorold, ON, L2V 4T7

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This notice was first issued on Aug. 26, 2021.

A background graphic featuring a network of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some in dark gray and some in a light purple. The lines are thin and gray, creating a web-like structure that spans the entire image. The overall color palette is dark gray and purple.

# MOVING WATER FORWARD

CONNECTING MORE PEOPLE TO MORE POSSIBILITIES



# Niagara Region

## Catherine Street and Lakeshore Road Sewage Pumping Stations Environmental Assessment

Public Information Centre

September 8<sup>th</sup>, 2021

# Welcome to: Virtual Public Information Centre

The objectives for today's Public Information Centre are:



Present the study area and objectives



Present the problem and opportunity statement along with the short list of alternatives



Provide a clear and transparent process for the evaluation of alternatives



Receive feedback on the evaluation process and recommended alternative

**MOVING  
WATER  
FORWARD**

CONNECTING MORE PEOPLE TO MORE POSSIBILITIES

**Niagara Region** Eastside Sewage Pumping Station Forcemain Class Environmental Assessment - Public Comment Form

Thank you for taking the time to fill out this comment form. Please place it in the box provided or email it to the address below. **Your input is important.** Comments will become a public record with the exception of personal information.

1. Do you think any criteria or important indicators were missed? If so, please indicate which ones:

2. What do you think about the evaluating criteria? Do you think any criteria are more or less important than the others?

|                             | More Important than the other categories | Same importance as the other categories | Less important than the other categories |
|-----------------------------|------------------------------------------|-----------------------------------------|------------------------------------------|
| Environmental Impacts       |                                          |                                         |                                          |
| Social and Cultural Impacts |                                          |                                         |                                          |
| Constructability Impacts    |                                          |                                         |                                          |
| Financial Viability         |                                          |                                         |                                          |
| Operational Benefits        |                                          |                                         |                                          |

Please explain your rationale:

3. Do you agree with the identified advantages and disadvantages for the short-listed alternatives?  
☐ Yes  
☐ No

If no, please indicate below:

**Remember to fill out a comment form!**

## Submitting Questions & Comments

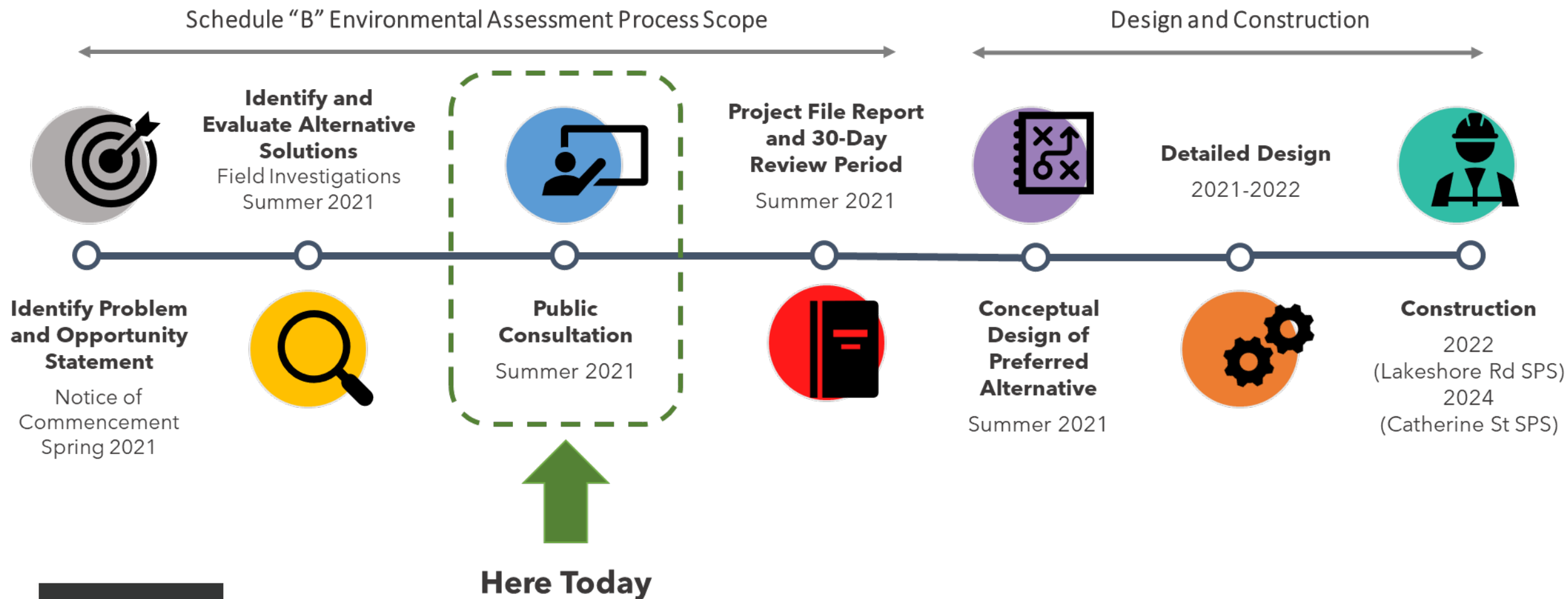
[Lakeshore Road Sewage Pumping Station Environmental Assessment - Niagara Region, Ontario](#)

[Catherine Street Sewage Pumping Station Environmental Assessment - Niagara Region, Ontario](#)

Deadline: September 22, 2021



# Class “B” Environmental Assessment Process



# Study Purpose and Objectives



## Problem Opportunity/Statement

*“Identify and develop a preferred solution to meet future capacity requirements to the year 2041 at the Lakeshore Road and Catherine Street Sewage Pumping Stations (SPS), while minimizing impacts to the natural, socio-cultural and technical environments.”*



## Our mandate will be to ensure the following goals are achieved:

1. Satisfy Schedule B Class Environmental Assessment Process
2. Provide infrastructure capacity and flexibility to meet future capacity demands identified in the Region’s 2041 Master Servicing Plan (MSP)
3. Decrease the potential for future service disruptions; and
4. Minimize environmental impacts including natural and socio-economic



# Study Area and Background Details – Catherine Street Sewage Pumping Station

- Catherine Street Sewage Pumping Station is located at 8 Catherine Street, Fort Erie
- The existing station was commissioned in 1981 and has since undergone equipment replacements with various maintenance activities, including a new 300 mm forcemain replacement
- Investigations at the site indicate aging infrastructure and poor condition warranting the need for station upgrades
- The Region's 2017 Water and Wastewater Master Servicing Plan indicated increased capacity demands due to the operational, capacity and wet weather constraints





# Study Area and Background Details – Lakeshore Road Sewage Pumping Station

- Lakeshore Road Sewage Pumping Station is located at 14A Lakeshore Road, Fort Erie
- The station was commissioned in 1985 and has since undergone minor equipment replacements and various maintenance activities
- The station conveys its flows to Catherine Street Sewage Pumping Station through a 200 mm forcemain and then both stations' flows are conveyed to the Anger Avenue Wastewater Treatment Plant
- Investigations at the site indicate aging infrastructure resulting in high maintenance costs and the Region's 2017 Water and Wastewater Master Servicing Plan indicated increasing capacity demands





# Preliminary Screening Criteria

## Screening Criteria #1: Effectiveness & Reliability



Can the alternative effectively and reliably meet 2041 capacity requirements?

## Screening Criteria #2: Compatibility with Existing System



Is the alternative compatible with the existing wastewater system such that it will not require major changes if implemented?

## Screening Criteria #3: Implementation Challenges



Can the alternative be implemented without facing major constraints or time delays, including regulatory land availability, environmental or social constraints?



**Alternatives must pass all 3 criteria to proceed to short list**

# Evaluation Categories & Criteria for Short Listed Alternatives



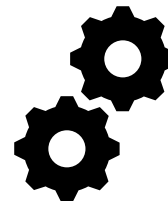
- Terrestrial System
- Aquatic System
- Groundwater, Water Quality and Quantity

## ENVIRONMENTAL (25%)



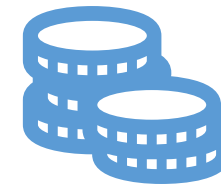
- Odour
- Visual and Aesthetics Appeal
- Disruption During Construction
- Property Acquisition and Easements
- Existing and Future Land Compatibility
- Archaeological/Built Cultural Heritage

## SOCIAL & CULTURAL (25%)



- Long-term Flexibility
- Ease of Operation
- Redundancy
- Existing Infrastructure Compatibility
- Geotechnical and Hydrogeology
- Climate Change Adaptability
- Permits and Approvals

## TECHNICAL (25%)

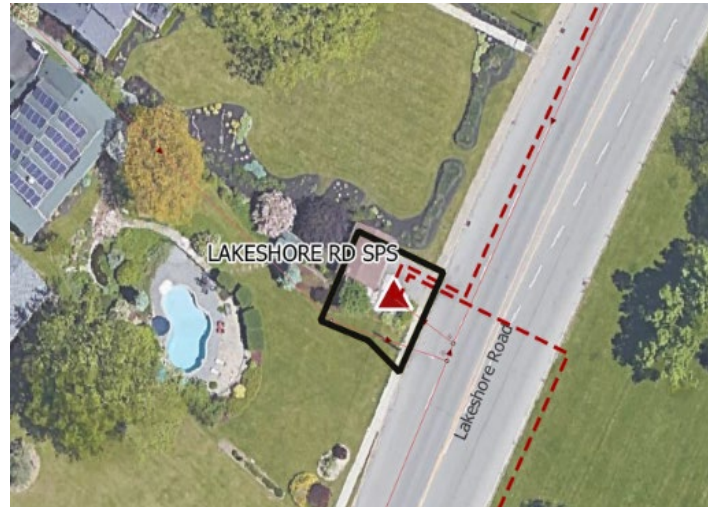


- Capital Costs
- Lifecycle Costs

## ECONOMIC (25%)



# Option A – Upgrade Lakeshore Rd SPS and Catherine St SPS at existing locations and property footprints



## ENVIRONMENTAL

- ✓ Minimal environmental impacts to aquatic system and groundwater
- ✗ Moderate potential impacts to terrestrial habitats

## SOCIAL & CULTURAL

- ✓ Minimal archaeological and natural heritage impacts
- ✓ Compatible with existing land use as no property acquisitions will be required
- ✗ Impacts to adjacent landowners during construction

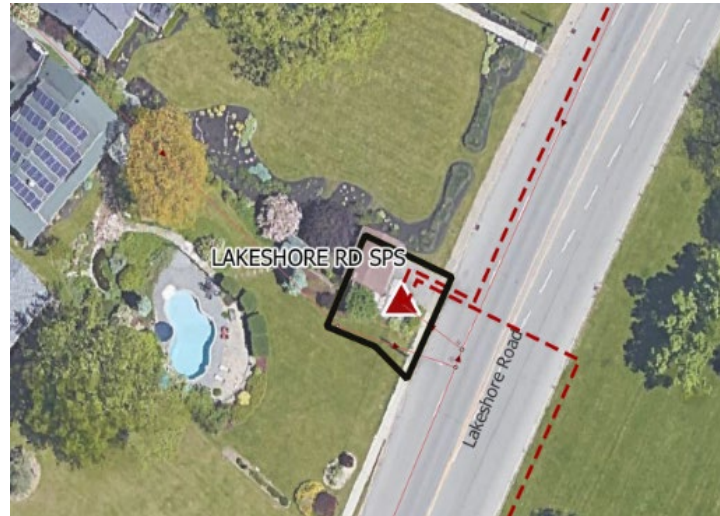
## TECHNICAL

- ✓ No significant geotechnical challenges
- ✓ No challenges to obtaining permits and approvals
- ✓ Compatible with existing infrastructure
- ✗ Potential maintenance issues due to site constraints; limited size and storage space
- ✗ Restricted climate change adaptability

## ECONOMIC

- ✓ Lowest capital costs
- ✓ Lowest lifecycle costs

# Option B – Upgrade both stations, Lakeshore Rd SPS at the existing site and move Catherine St SPS to the adjacent lot to the east



## ENVIRONMENTAL

- ✓ Minimal impacts to surrounding aquatic systems and groundwater due to short sewer length
- ✗ Moderate impacts to terrestrial habitats

## SOCIAL & CULTURAL

- ✓ Compatible with existing land use as property acquisition will not be required
- ✗ Potential impacts to archaeological and natural heritage sites
- ✗ Impacts to adjacent landowners during construction

## TECHNICAL

- ✓ Minimal geotechnical challenges
- ✓ Ability to meet future flow requirements
- ✓ No challenges to obtaining permits and approvals
- ✓ Compatible with existing infrastructure
- ✗ High potential for maintenance issues due to site restrictions and moderate sewage storage space
- ✗ Restricted climate change adaptability

## ECONOMIC

- ✓ Low capital costs
- ✓ Low lifecycle costs



**Option C – Lakeshore Rd SPS remove control building and construct a new wet well, valve chamber and forcemain. Construct new Catherine St SPS at adjacent lot to the east**



**ENVIRONMENTAL**

- ✓ Minimal environmental impacts to aquatic system and groundwater
- ✗ Moderate potential impacts to terrestrial habitats or systems

**SOCIAL & CULTURAL**

- ✓ Compatible with existing land use as no property acquisitions will be required
- ✓ Improved aesthetics from removing the control building
- ✗ Impacts to adjacent landowners during construction
- ✗ Potential impacts to archeological and natural heritage sites

**TECHNICAL**

- ✓ Minimal geotechnical challenges
- ✓ Ability to meet future flows
- ✓ No challenges to obtaining permits and approvals
- ✓ Compatible with existing infrastructure
- ✗ Moderate potential for maintenance issues as Lakeshore will be constrained with moderate sewage storage space
- ✗ Restricted climate change adaptability

**ECONOMIC**

- ✓ Low capital costs
- ✓ Low lifecycle costs

**Option D** – Decommission Lakeshore Rd SPS and gravity sewer along Lakeshore Road/Niagara Boulevard. Relocate Catherine St SPS to Forsythe Street. Extend sewer from existing Catherine St SPS to new SPS at Forsythe Street



**ENVIRONMENTAL**

- ✗ Moderate to severe impacts to aquatic system and groundwater due to sewer length
- ✗ Severe potential for impacts to terrestrial habitats

**SOCIAL & CULTURAL**

- ✓ Addresses odour and aesthetics issues
- ✗ Impacts to adjacent landowners during construction
- ✗ Requires purchasing of land
- ✗ Moderate to severe impacts to archeological and natural heritage sites

**TECHNICAL**

- ✓ Moderate ability to meet future flows
- ✓ Low potential for maintenance issues
- ✓ Ability to provide redundancy and adaptability to climate change impacts
- ✗ Potential challenges to obtaining permits and approvals
- ✗ Moderate to severe geotechnical and hydrology impacts
- ✗ Not compatible with existing infrastructure

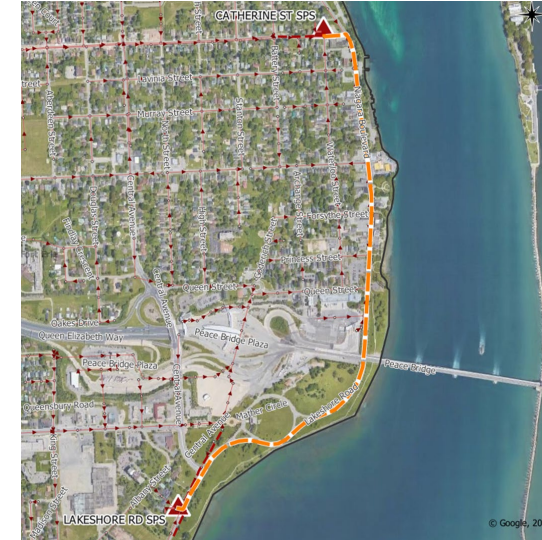
**ECONOMIC**

- ✓ High capital costs
- ✓ High lifecycle costs



## Option E – Decommission Lakeshore Rd SPS and gravity sewer along Lakeshore Road/Niagara Boulevard. Relocate Catherine St SPS to adjacent east lot

### Decommission Lakeshore Sewage Pumping Station



#### ENVIRONMENTAL

- ✗ Moderate impacts to aquatic system and groundwater
- ✗ Moderate impacts to existing terrestrial habitats

#### SOCIAL & CULTURAL

- ✓ Addresses odour and aesthetics issues from removal of the control building
- ✗ Impacts to adjacent landowners during construction
- ✗ Requires purchasing of land
- ✗ Moderate to severe impacts to archeological and natural heritage sites

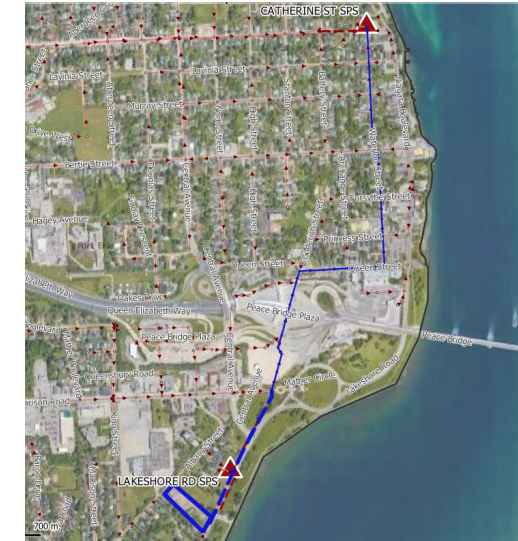
#### TECHNICAL

- ✓ Moderate ability to meet future flows
- ✓ Low potential for maintenance issues
- ✓ Ability to provide redundancy and adaptability to climate change impacts
- ✗ Potential challenges to obtaining permits and approvals
- ✗ Moderate to severe geotechnical and hydrology impacts
- ✗ Not compatible with existing infrastructure

#### ECONOMIC

- ✓ Moderate capital costs
- ✓ Moderate lifecycle costs

# Option F – Relocate Lakeshore Rd SPS to south vacant property (West of Lakeshore Road) and relocate Catherine St SPS to adjacent lot to the east



## ENVIRONMENTAL

- ✓ Minimal environmental impacts to aquatic system
- ✗ Moderate potential impacts to terrestrial habitat and groundwater

## SOCIAL & CULTURAL

- ✓ Addresses odour issues
- ✗ Moderate impacts to adjacent landowners during construction
- ✗ Requires purchasing of land
- ✗ Severe impacts to archeological and natural heritage sites

## TECHNICAL

- ✓ Ability to meet future flows demands
- ✓ Ability to meet future redundancy and adaptability to climate change impacts
- ✓ Compatible with the existing infrastructure
- ✗ Potential challenges include obtaining permits and approvals
- ✗ Moderate potential for maintenance issues
- ✗ Moderate geotechnical and hydrology impacts

## ECONOMIC

- ✓ Moderate capital costs
- ✓ Moderate lifecycle costs



Option G - Relocate Lakeshore Rd SPS to south vacant property (east of Lakeshore Road). Relocate Catherine St SPS to adjacent east lot



ENVIRONMENTAL

- ✓ Minimal environmental impacts to aquatic system
- ✗ Moderate potential impacts to terrestrial habitat and groundwater

SOCIAL & CULTURAL

- ✓ Addresses odour issues
- ✗ Moderate impacts to adjacent landowners during construction
- ✗ Requires purchasing of land
- ✗ Severe impacts to archeological and natural heritage sites

TECHNICAL

- ✓ Ability to meet future flows demands
- ✓ Ability to meet future redundancy and adaptability to climate change impacts
- ✓ Compatible with the existing infrastructure
- ✗ Severe challenges include obtaining permits and approvals
- ✗ Moderate potential for maintenance issues
- ✗ Moderate geotechnical and hydrology impacts

ECONOMIC

- ✓ Moderate capital costs
- ✓ Moderate lifecycle costs

# Alternatives Evaluation

| Alternative                                                                                                                                                                                                              | Environmental Factors | Social and Cultural Factors | Technical Considerations | Economic Considerations | Summary Score |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|--------------------------|-------------------------|---------------|
| <b>Option A</b> – Upgrade Lakeshore Rd SPS and Catherine St SPS at existing locations and property footprints                                                                                                            |                       |                             |                          |                         |               |
| <b>Option B</b> – Upgrade both stations, Lakeshore Rd SPS at the existing site and move Catherine St SPS to the adjacent lot to the east                                                                                 |                       |                             |                          |                         |               |
| <b>Option C</b> – Lakeshore Rd SPS remove control building and construct a new wet well, valve chamber and forcemain. Construct new Catherine St SPS at adjacent lot to the east                                         |                       |                             |                          |                         |               |
| <b>Option D</b> – Decommission Lakeshore SPS and gravity sewer along Lakeshore Road/Niagara Boulevard. Relocate Catherine SPS to Forsythe Street. Extend sewer from existing Catherine SPS to new SPS at Forsythe Street |                       |                             |                          |                         |               |
| <b>Option E</b> – Decommission Lakeshore and gravity sewer along Lakeshore Road/Niagara Boulevard. Relocate Catherine SPS to adjacent east lot                                                                           |                       |                             |                          |                         |               |
| <b>Option F</b> – Relocate Lakeshore Rd SPS to south vacant property (West of Lakeshore Road) and relocate Catherine St SPS to adjacent lot to the east                                                                  |                       |                             |                          |                         |               |
| <b>Option G</b> - Relocate Lakeshore Rd SPS to south vacant property (east of Lakeshore Rod). Relocate Catherine St SPS to adjacent east lot                                                                             |                       |                             |                          |                         |               |
| <b>Legend:</b> Major Positive          Minor Positive          Neutral          Minor Negative          Major Negative                                                                                                   |                       |                             |                          |                         |               |



**Preliminary Preferred Alternative: Option C – Lakeshore Rd SPS remove control building and construct a new wet well, valve chamber and forcemain. Construct new Catherine St SPS at adjacent lot to the east**



Removing the control building will improve Sewage Pumping Station aesthetics



Cost-effective alternative



Suits the existing infrastructure



Can accommodate future growth and servicing needs



Reduces disruption to existing infrastructure by utilizing owned Regional land



# Next Steps



Incorporate any stakeholder feedback received from the Public Information Centre



Finalize the recommended alternative



Prepare the Project File Report and begin the Conceptual design



30-Day Review Period



Following 30-day review, provided no comments, Region plans to proceed to Design



# Thank you for your interest!

## Questions? Concerns? Comments?

Fill out a comment form and submit to Stephanie McGill or Amanda Beattie by September 22, 2021.

Your feedback is valuable and will inform the remainder of the decision-making process!

**Niagara Region** Eastside Sewage Pumping Station Forcemain Replacement  
Class Environmental Assessment – Public Consultation

Thank you for taking the time to fill out this comment form. Please place it in the box provided or email it to the address below. **Your input is important.** Comments will become part of the public record with the exception of personal information.

1. Do you think any criteria or important indicators were missed? If so, please indicate below:

2. What do you think about the evaluating criteria? Do you think any criteria are more or less important than the others?

|                             | More Important than the other categories | Same importance as the other categories | Less important than the other categories |
|-----------------------------|------------------------------------------|-----------------------------------------|------------------------------------------|
| Environmental Impacts       |                                          |                                         |                                          |
| Social and Cultural Impacts |                                          |                                         |                                          |
| Constructability Impacts    |                                          |                                         |                                          |
| Financial Viability         |                                          |                                         |                                          |
| Operational Benefits        |                                          |                                         |                                          |

Please explain your rationale:

3. Do you agree with the identified advantages and disadvantages for the short-listed alternatives?  
☐ Yes  
☐ No

If no, please indicate below:

You can also contact the project team at:

**Stephanie McGill**

Project Manager  
Water & Wastewater Services  
Niagara Region

3501 Schmon Pkwy., PO. Box 1042  
Thorold, ON L2V 4T7

Phone: 905.980.6000 x. 3176

Email:

stephanie.mcgill@niagararegion.ca

**Amanda Beattie P.Eng., P.Geo., CRL,  
CMRP, PMP**

Project Manager  
GM BluePlan Engineering Limited  
1266 South Service Road, Unit C31  
Stoney Creek, ON L8E 5R9

Phone: 905.932.4844

Email:

amanda.beattie@gmblueplan.ca

# **APPENDIX A4: INDIGENOUS COMMUNITIES AND AGENCY CONSULTATION**



Lakeshore Road Sewage Pumping Station Upgrades  
Schedule B Municipal Class Environmental Assessment  
Consultation Tracking Summary



| Stakeholder         | Agency                                                     | From             | To         | Type         | Comment                                                                                                                                                                                                                                                                                                                    | Date Sent/Received | Status/ Response                                                                                                                                                                                                                                                  | Date of Action | Project Stage |
|---------------------|------------------------------------------------------------|------------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|
| Government Agency   | Ministry of the Environment, Conservation and Parks (MECP) | GMBP             | MECP       | Email        | Emailed NOC to confirm first nations to consult                                                                                                                                                                                                                                                                            | 28-Apr-21          | 1. Comment noted and filed<br>2. Added following indigenous groups to the contact list and provided NOC (Six Nations of the Grand River Territory(both Elected Council and Haudenosaunee Confederacy Chiefs Council) and Mississaugas of the Credit First Nation) | 25-May-21      | NOC           |
| Interested Resident | Local Resident                                             |                  | Region     | Email        | Noted interest in the Study and requested to be added to the stakeholder list                                                                                                                                                                                                                                              | 3-May-21           | 1. Comment noted and filed<br>2. The Region followed up with a phone call to further discuss the current project status and address outstanding questions                                                                                                         | 3-May-21       | NOC           |
| Government Agency   | Region of Niagara - Development Planning                   | Lola Emerson     | GMBP       | Email        | The Niagara Region's Planning Department provided guidance regarding related policies and noted no concerns with the proposed upgrades                                                                                                                                                                                     | 17-May-21          | 1. Comment noted and filed , no further action required                                                                                                                                                                                                           | 17-May-21      | NOC           |
| Government Agency   | Ministry of the Environment, Conservation and Parks (MECP) | Du Yanhong       | GMBP       | Email        | Requested to be removed from the mailing list                                                                                                                                                                                                                                                                              | 26-Aug-21          | 1. Stakeholder removed from list                                                                                                                                                                                                                                  | 26-Aug-21      | PIC           |
| Government Agency   | Transport Canada                                           | Monique Mousseau | GMBP       | Email        | Requested to be removed from the mailing list                                                                                                                                                                                                                                                                              | 26-Aug-21          | 1. Stakeholder removed from list                                                                                                                                                                                                                                  | 26-Aug-21      | PIC           |
| Government Agency   | Town of Fort Erie                                          | Carol Schfield   | GMBP       | Email        | Requested to be removed from the mailing list                                                                                                                                                                                                                                                                              | 26-Aug-21          | 1. Stakeholder removed from list                                                                                                                                                                                                                                  | 26-Aug-21      | PIC           |
| Local Resident      | Local Resident                                             |                  | The Region | Faxed Letter | Concerns regarding the construction of a new Catherine Street Station at the adjacent lot next to the existing Catherine Street SPS at 8 Catherine Street, Fort Erie. Expressed a preference for an underground solution for the Catherine Street Station as opposed to the proposed solution of an aboveground structure. | 23-Sep-21          | 1. Comment filed and stakeholder added to contact list<br>2. Clarified (via letter) the Region's design standards and noted that an equipment shelter would not suffice for the stations flows                                                                    | 15-Nov-21      | PIC           |

Ministry of the Environment,  
Conservation and Parks

*Environmental Assessment Branch*

1<sup>st</sup> Floor  
135 St. Clair Avenue W  
Toronto [ON M4V 1P5](#)  
Tel.: 416 314-8001  
Fax.: 416 314-8452

Ministère de l'Environnement, de la  
Protection de la nature et des Parcs

*Direction des évaluations  
environnementales*

Rez-de-chaussée  
135, avenue St. Clair Ouest  
Toronto [ON M4V 1P5](#)  
Tél. : 416 314-8001  
Téléc. : 416 314-8452



May 25, 2021

Stephanie McGill  
Project Manager, Water & Wastewater Services  
Niagara Region

Re: **Lakeshore Road Sanitary Pumping Station Upgrades  
Town of Fort Erie  
Municipal Class EA  
Response to Notice of Commencement**

Dear Stephanie McGill,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Niagara Region has indicated that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment (Class EA).

The **updated (February 2021)** attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project, **the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.



Based on information provided to date and the Crown's preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- Mississaugas of the Credit First Nation
- Six Nations of the Grand River (both Elected Council and Haudenosaunee Confederacy Chiefs Council)

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "[Code of Practice for Consultation in Ontario's Environmental Assessment Process](#)". Additional information related to Ontario's Environmental Assessment Act is available online at: [www.ontario.ca/environmentalassessments](http://www.ontario.ca/environmentalassessments).

**Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.**

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances subsequent to initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right
- Consultation with Indigenous communities or other stakeholders has reached an impasse
- A Part II Order request is expected on the basis of impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

---

**A draft copy of the report should be sent directly to me prior to the filing of the final report, allowing a minimum of 30 days for the ministry's technical reviewers to provide comments.**

**Please also ensure a copy of the final notice is sent to the ministry's West Central Region EA notification email account ([eanotification.wcregion@ontario.ca](mailto:eanotification.wcregion@ontario.ca)) after the draft report is reviewed and finalized.**

Should you or any members of your project team have any questions regarding the material above, please contact me at [joan.delvillarcuicas@ontario.ca](mailto:joan.delvillarcuicas@ontario.ca) or at 365-889-1180.

Yours truly,



Joan Del Villar C  
Regional Environmental Assessment Coordinator – West Central Region

cc Katy Potter, Supervisor, Environmental Assessment Services, MECP  
Kim Groombridge, Niagara District Manager, MECP  
Amanda Beattie, Project Manager, GM Blue Plan Engineering Limited

Attach: Areas of Interest  
A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with  
Aboriginal Communities



## AREAS OF INTEREST (v. February 2021)

*It is suggested that you check off each section after you have considered / addressed it.*

### ☐ Planning and Policy

- Projects located in MECP Central Region are subject to [A Place to Grow: Growth Plan for the Greater Golden Horseshoe \(2020\)](#). Parts of the study area may also be subject to the [Oak Ridges Moraine Conservation Plan \(2017\)](#), [Niagara Escarpment Plan \(2017\)](#), [Greenbelt Plan \(2017\)](#) or [Lake Simcoe Protection Plan \(2014\)](#). Applicable plans and the applicable policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
- The [Provincial Policy Statement \(2020\)](#) contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.
- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

### ☐ Source Water Protection

The *Clean Water Act*, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**
  - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

- If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.
- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.
- In order to determine if this project is occurring within a vulnerable area, proponents can use this mapping tool: <http://www.applications.ene.gov.on.ca/swp/en/index.php>. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.
- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

#### More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to [Conservation Ontario's website](#) where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in [section 1.1 of Ontario Regulation 287/07](#) made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional “local” threat activities, as approved by the MECP.

#### ☐ **Climate Change**

The document "[Considering Climate Change in the Environmental Assessment Process](#)" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

#### • **The MECP expects proponents of Class EA projects to:**

1. Consider during the assessment of alternative solutions and alternative designs, the following:
  - a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
  - b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "[Community Emissions Reduction Planning: A Guide for Municipalities](#)" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

#### ☐ **Air Quality, Dust and Noise**

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.**
- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:
  - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
  - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
  - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
  - A discussion of potential mitigation measures.
- As a common practice, "air quality" should be used an evaluation criterion for all road projects.
- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.
- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to [Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities](#) report prepared for Environment Canada. March 2005.
- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

#### ☐ **Ecosystem Protection and Restoration**

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.
- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:



- Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
- Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
- Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, you may consider the provisions of the Rouge Park Management Plan if applicable.

#### □ **Species at Risk**

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at <https://www.ontario.ca/page/species-risk>.
- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.
- For any questions related to subsequent permit requirements, please contact [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca).

#### □ **Surface Water**

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.
- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's [Stormwater Management Planning and Design Manual \(2003\)](#) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:
  - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
  - Watershed information, drainage conditions, and other relevant background information
  - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
  - Information on maintenance and monitoring commitments.
- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If the proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – O. Reg. 63/16. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the [Water Taking User Guide for EASR](#) for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

#### ☐ **Groundwater**

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.
- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.
- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.
- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – O. Reg. 63/16. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the [Water Taking User Guide for EASR](#) for more information.
- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

#### ☐ **Excess Materials Management**

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled “[On-Site and Excess Soil Management](#)” (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don’t go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit <https://www.ontario.ca/page/handling-excess-soil>.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "[Management of Excess Soil – A Guide for Best Management Practices](#)" (2014).
- All waste generated during construction must be disposed of in accordance with ministry requirements

#### □ **Contaminated Sites**

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the [MECP's D-4 guideline](#) for land use considerations near landfills and dumps.
  - Resources available may include regional/local municipal official plans and data; provincial data on [large landfill sites](#) and [small landfill sites](#); Environmental Compliance Approval information for waste disposal sites on [Access Environment](#).
- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's [website](#)).
- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.
- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

#### □ **Servicing, Utilities and Facilities**

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.
- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.
- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.
- We recommend referring to the ministry's [environmental land use planning guides](#) to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

#### □ **Mitigation and Monitoring**



- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.
- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.
- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

#### □ **Consultation**

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).
- Please include the full stakeholder distribution/consultation list in the documentation.

#### □ **Class EA Process**

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Part II Order Requests under the Environmental Assessment Act, although the plan itself would not be. **Please include a description of the approach being undertaken (use Appendix 4 as a reference).**
- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.
- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.
- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.
- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at <http://www.ontario.ca/environment-and-energy/environment-and-energy>. We encourage you to review all the available guides and to reference any relevant information in the report.

### **Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020**

Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address (for projects in MECP Southwest Region, the email is [eanotification.swregion@ontario.ca](mailto:eanotification.swregion@ontario.ca)).

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Part II Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Part II Order requests on those matters should be addressed in writing to:

Minister Jeff Yurek  
Ministry of Environment, Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto ON M7A 2J3  
[minister.mecp@ontario.ca](mailto:minister.mecp@ontario.ca)

and

Director, Environmental Assessment Branch  
Ministry of Environment, Conservation and Parks  
135 St. Clair Ave. W, 1st Floor  
Toronto ON, M4V 1P5  
[EABDirector@ontario.ca](mailto:EABDirector@ontario.ca)

## A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

### DEFINITIONS

The following definitions are specific to this document and may not apply in other contexts:

**Aboriginal communities** – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

**Consultation** – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

**Crown** – the Ontario Crown, acting through a particular ministry or ministries.

**Procedural aspects of consultation** – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

**Proponent** – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

### I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

### II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.



The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

### **III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS**

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

### **IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS**

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

**a) What might a proponent be required to do in carrying out the procedural aspects of consultation?**

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;
- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

**b) What documentation and reporting does the Crown need from the proponent?**

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;
- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

### **c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?**

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.



## **V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?**

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;
- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigate any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

## **VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?**

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

# **APPENDIX B: NATURAL HERITAGE REPORT (PREPARED BY LGL LIMITED ENVIRONMENTAL RESEARCH ASSOCIATES)**

# Lakeshore Road Sewage Pumping Station Schedule B Municipal Class Environmental Assessment

## Natural Heritage Report

for:



by:



Ecological Research Associates

**LGL Limited**

**environmental research associates**

**November 2021**

**LGL File TA9106**



**prepared by:**

| <b>Name</b>                             | <b>Title</b>                                  | <b>Signature</b>                                                                    |
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**November 2021**  
**LGL File TA9106**

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## 1.0 Introduction

The Regional Municipality of Niagara (Region) is conducting a Schedule B Municipal Class Environmental Assessment (EA) to address the need for upgrades to the Lakeshore Street Sewage Pumping Station (SPS) located at 14A Lakeshore Road in the Town of Fort Erie. The SPS was originally constructed in 1984 and according to recommendations made in the 2016 Water and Wastewater Master Servicing Plan (GM BluePlan, 2017), the SPS needs upgrading to address wet weather constraints and provide increased operational capacity.

In support of the EA, data pertaining to natural heritage was collected and reviewed for areas within and adjacent to the study area to describe existing conditions, identify sensitivities/constraints and evaluate design alternatives for the project.

### 1.1 Project Area

The project area incorporates the small roadside parcel of land on which the SPS sits and extends behind the building between 14 and 16 Lakeshore Road to reach Albany Street. Given that the existing SPS includes an emergency overflow to the Niagara River, the assessment also includes consideration for aquatic habitat associated with the river. The study area as displayed in **Figure 1** includes the Region owned property on Lakeshore Road as well as 120 m of adjacent lands to consider natural features and functions within and in proximity to the existing SPS. In addition, the area north of the SPS site is included in the study area to accommodate a new sewer alignment.

The project area is located within the Niagara River Watershed and the Niagara Peninsula Conservation Authority (NPCA) jurisdiction.





# LEGEND

- Lakeshore SPS
- Shoreline (NPCA)
- Regulatory Flood Hazard Limit (NPCA)
- Study Area
- Approximate Regulation Land (NPCA)
- Core Natural Area: Environmental Conservation Area
- Waterfowl Winter Concentration Area
- Northern Brook Lamprey (*Ichthyomyzon fossor*) Distribution
- Aquatic Resources Area (GU-9001-UNR)

Note: Entire extent is within Important Bird Area: Niagara River Corridor.



Data Sources: Department of Fisheries and Oceans Canada (DFO), Niagara Peninsula Conservation Authority (NPCA), Niagara Region, Bird Studies Canada & Ministry of Natural Resources and Forestry (LNO). Produced by LGL Limited under Licence with the Ontario Ministry of Natural Resources & Queen's Printer for Ontario, 2020. Contains information licenced under the Open Government Licence - Ontario.

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## LAKESHORE ROAD SPS NATURAL HERITAGE



|                      |                  |
|----------------------|------------------|
| Project: TA9106      | Figure: 1        |
| Date: November, 2021 | Prepared By: JJP |
| Scale: 1 : 1,800     | Checked By: LRE  |



## **2.0 Relevant Policy and Legislation**

### **2.1 Federal Fisheries Act, Fisheries and Oceans Canada (DFO)**

The project must comply with the fish and fish habitat protection provisions of the Fisheries Act. The Act applies to work being conducted in or near waterbodies that support commercial, recreational, or Aboriginal fisheries. The Niagara River provides fish habitat. The project is required to demonstrate compliance with the fish and fish habitat protection provisions of the Fisheries Act to avoid causing death of fish and harmful alteration, disruption, or destruction of fish habitat. The fish community of the Niagara River has been characterized within the project area using records from the Ministry of Natural Resources and Forestry (MNRF) and the NPCA.

### **2.2 Migratory Birds**

The Migratory Birds Convention Act, 1994 (MBCA) protects migratory birds through a broad prohibition on disturbing or destroying birds, nests and eggs, accompanied by a hunting and permitting regime set out in regulations. Generally, the MBCA states that a person who does not hold a permit authorizing one or more of the following activities or who is not otherwise authorized by the Regulation to carry out that activity must not:

- (a) capture, kill, take, injure or harass a migratory bird;
- (b) destroy, take or disturb an egg; or,
- (c) damage, destroy, remove or disturb a nest, nest shelter, eider duck shelter or duck box.

Migratory birds have been identified within the project area through review of secondary sources and the provisions of the MBCA apply.

### **2.3 Provincial Policy Statement**

The Provincial Policy Statement (PPS 2020) was issued under the Planning Act and came into effect May 1, 2020 to replace the Provincial Policy Statement issued in 2014. The PPS 2020 provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. The PPS 2020 supports improved land use planning and management, which contributes to a more effective and efficient land use planning system. The following natural heritage policies of the PPS 2020 are of relevance to the project:

#### **2.1 Natural Heritage**

##### **2.1.1 Natural features and areas shall be protected for the long term.**



2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.3 Natural heritage systems shall be identified in Ecoregions 6E & 7E, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

2.1.4 Development and site alteration shall not be permitted in:

- a) significant wetlands in Ecoregions 5E, 6E and 7E; and
- b) significant coastal wetlands.

2.1.5 Development and site alteration shall not be permitted in:

- a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- b) significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
- c) significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
- d) significant wildlife habitat;
- e) significant areas of natural and scientific interest; and
- f) coastal wetlands in Ecoregions 5E, 6E and 7E that are not subject to policy 2.1.4(b)

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and, 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

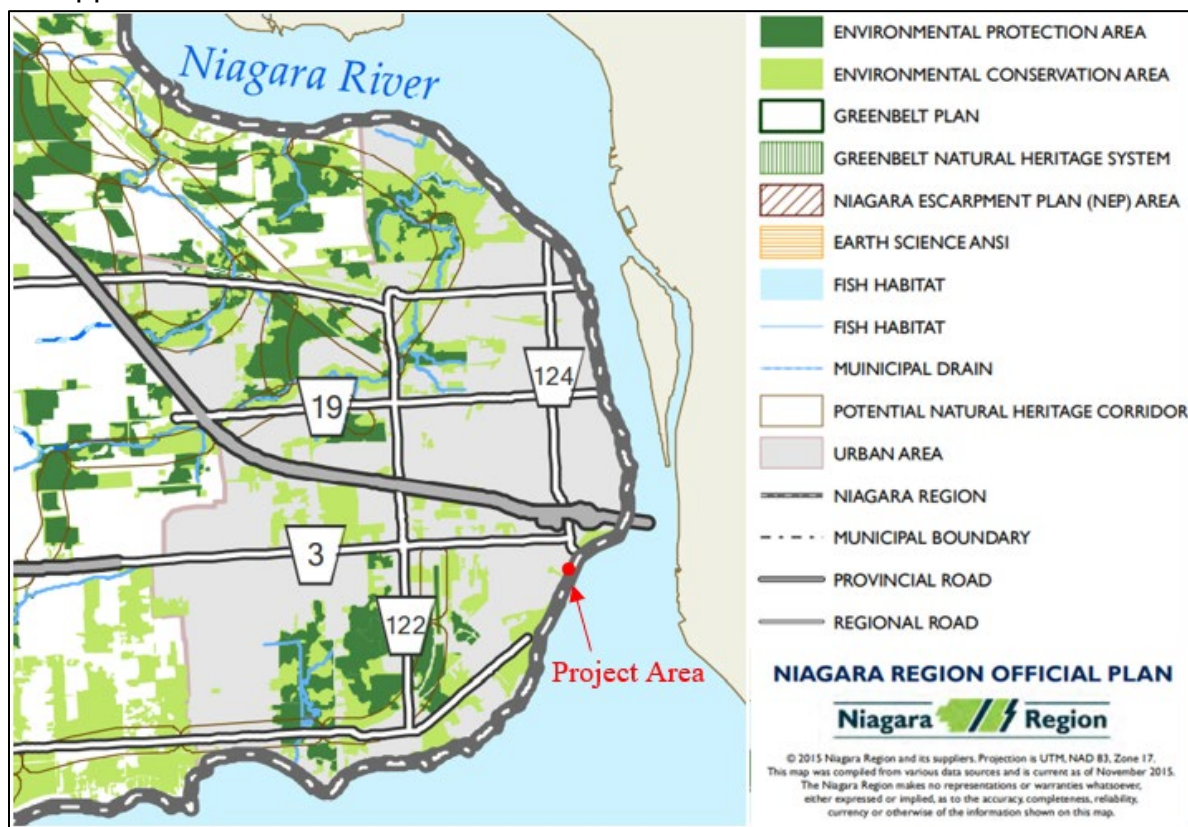
2.1.9 Nothing in policy 2.1 is intended to limit the ability of agricultural uses to continue.

Policy 4.7 of the PPS describes the importance of official plans for comprehensive, integrated and long-term implementation of the PPS. The Official Plans of municipalities identify provincial interests and set out appropriate land use designations and policies.

## 2.4 Official Plans

### 2.4.1 Region of Niagara Official Plan (2014)

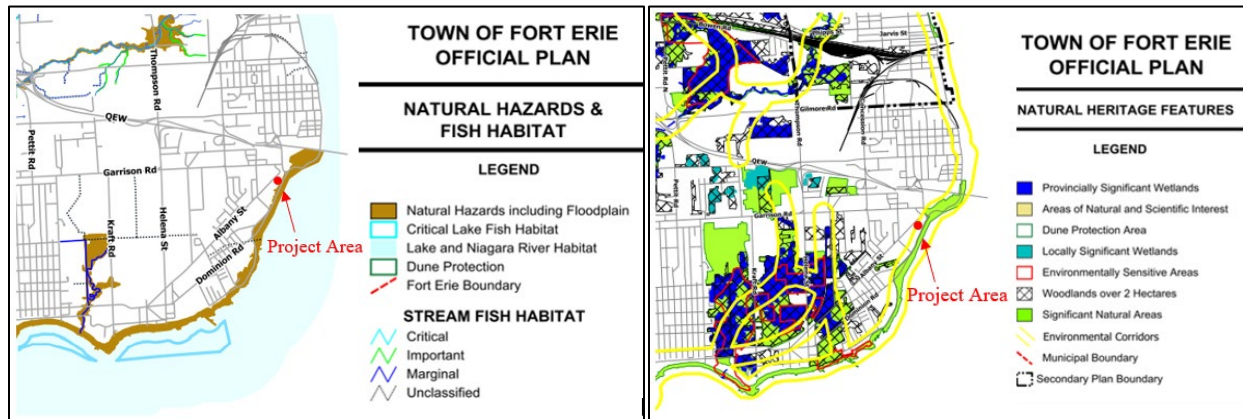
The study area is located within the urban area according to Schedule C Core Natural Heritage mapping shown below (Niagara Region, 2014). However, **Figure 1** displays that the shoreline adjacent to the study area is identified by the Niagara Region as a Core Natural Area: Environmental Conservation Area. The Niagara River is also shown to support fish habitat.



Section 7.B.1.3 of the Region of Niagara Official Plan describes Environmental Conservation Areas as including “significant woodlands; significant wildlife habitat; significant habitat of species of concern; regionally significant Life Science ANSIs; other evaluated wetlands; significant valleylands; savannahs and tallgrass prairies; and alvars; and publicly owned conservation lands.”

## 2.4.2 Town of Fort Erie Official Plan (2018)

The Schedule C Natural Heritage Features mapping from the Town of Fort Erie Official Plan below identifies the project area as within an Environmental Corridor associated with the Niagara River and directly adjacent to a Significant Natural Area. The Significant Natural Area is the green space on the east side of Lakeshore Road along the Niagara River shoreline. Schedule C1 Natural Hazards and Fish Habitat does not identify any stream habitat, nor does it identify any critical habitat in the Niagara River, within or in proximity to the project area.



Schedule C

Schedule C1

Section 4.18.12.4. of the Town's Official Plan describes Environmental Corridors as "conceptual Corridors throughout the municipality. These corridors represent a higher level linkage and are intended to demonstrate where provision of wildlife and avian routes may be considered for enhancement. The feasibility of enhancement should be examined as part of a development application process..... There is a considerable amount of existing development along portions of these Environmental Corridor routes within the Plan Area. Where feasible, any proposals for new development may be requested to address how these routes could receive enhancement to assist in wildlife movement."

Section 8.3.1 of the Official Plan describes Significant Natural Areas and further references Environmental Corridors as follows:

### 8.3.1. SIGNIFICANT NATURAL AREAS

The Town of Fort Erie has completed a Natural Areas Inventory that identifies Significant Natural Areas (SNAs), Corridors, and Linkages that should be considered for protection. These Natural Areas include, but are not limited to Significant Woodlands, Thickets, Meadowlands, Significant Wildlife Habitat Areas, and Environmentally Sensitive Areas and Environmental Corridors and Linkages. Significant Natural Areas are considered to have a higher ecological significance than other Natural Areas designated as Environmental Conservation in that they



meet three or more criteria of the Town's Natural Areas Inventory, as outlined in Appendix 'D', for assessing the significance of the natural feature.

II. Development or site alteration within or adjacent to Significant Natural Areas (SNAs) shall only be permitted if an Environmental Impact Study (EIS) demonstrated that the development of site alteration will not result in degradation that threatens the health or integrity of the natural features or ecological functions for which the area is identified as significant in the Town's Natural Areas Inventory or that are identified as significant through the EIS. The Town's Natural Areas Inventory identified the key features and functions of the SNAs.

The Fort Erie Natural Areas Inventory includes mapping of several natural area features and criteria. The aforementioned natural area adjacent to the study area on the Niagara River shoreline is identified in this mapping as having notable features or meeting several of the following criteria:

- Recognized Natural Area (Habitat Block of Natural Cover) (Map 2 in Dougan, 2003)
- Open Beach Bar/ Open Tallgrass Prairie/ Open Sand Dune (Map 3 in Dougan, 2003)
- Designated Environmental Area (Map 4-1 in Dougan, 2003)
- Area of Hydrological Importance (Map 4-2 in Dougan, 2003)
- Area of High Quality (Map 4-3 in Dougan, 2003)
- Area of High Habitat Diversity (Map 4-4 in Dougan, 2003)
- Area with Special Features (Map 4-5 in Dougan, 2003)
- Representative Area (Map 4-6 in Dougan, 2003)
- Area of Socio-Economic Importance (Map 4-7 in Dougan, 2003)
- Recommended Locally Significant Area (Map 5 in Dougan, 2003)
- Recommended Core Area (Map 6 in Dougan, 2003)
- Recommended Linkages (Map 6 in Dougan, 2003)

The project area is identified by Dougan (2003) as a Recommended Linkage (Map 6), consistent with the Environmental Corridor defined in the Town of Fort Erie Official Plan.

## **2.5 Niagara Peninsula Conservation Authority**

The existing SPS is within the area shown to be regulated (**Figure 1**) by the Niagara Peninsula Conservation Authority (NPCA) under the Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation [O. Reg.] 155/06).

### 3.0 Existing Conditions

The documentation of existing conditions relied primarily on the review of secondary source information. The following resources were used to characterize the study area in the context of natural heritage, including the following:

- Aerial imagery;
- MNRF Natural Heritage Information Centre (NHIC) database;
- MNRF Land Information Ontario data (fisheries, woodlands, wetlands, wildlife habitat, significant natural areas);
- Fisheries and Oceans Canada (DFO) mapping for aquatic species at risk (SAR);
- The Regional Municipality of Niagara Official Plan;
- The Town of Fort Erie Official Plan;
- Open data from the Niagara Peninsula Conservation Authority (NPCA);
- Open data from the Niagara Region;
- Natural Areas Inventories for the Town of Fort Erie (Dougan, 2003); and,
- Natural Areas Inventory 2006-2009 (NPCA, 2010).

#### 3.1 Physiography

A secondary source investigation was undertaken to identify physiography, bedrock, surficial geology and soils within the study area.

Information in this regard was obtained through:

- Chapman L. J. and D. F. Putnam. 1984. The Physiography of Southern Ontario. Published for the Ontario Geological Survey Special Volume 2;
- Ontario Geological Survey. 1984. Niagara-Welland Southern Ontario Quaternary Geology, Map 2496, scale 1: 50 000;
- Ontario Geological Survey 1991. Bedrock Geology of Ontario, southern sheet; Ontario Geological Survey, Map 2544, scale 1: 1 000 000;

The project area is located within the Iroquois Plains physiographic region which borders Lake Ontario from Niagara around the west side of the lake and into Northumberland County. Chapman and Putnam (1984) describe the Iroquois Plains as a region of great physiographic diversity including undulating till plains, cliffs, bars, and beaches. In the Niagara region however, the land is described as lowlands cut by a number of small streams which end in wetlands and lagoons in their lower reaches alongside Lake Ontario. Bedrock geology is that of the Detroit River Group which is

Middle Devonian in age and comprised of limestone, dolostone and shale (Ontario Geological Survey 1991).

Surficial geology is modern alluvium comprising clay, silt, sand and gravel with organic matter throughout the study area (Ontario Geological Survey, 1984). The soil type is shallow sand that typically overlies clay at two to three feet which creates wet subsoils with little natural drainage (Chapman and Putnam, 1984).

### **3.2 Designated Natural Areas**

The project area was screened for any designations within various local, regional and provincial policies, the results of which are noted in the following sections.

#### **3.2.1 Areas of Natural and Scientific Interest (ANSIs)**

Provincially significant Areas of Natural and Scientific Interest (ANSI) are determined by the MNRF. The agency defines ANSIs as “lands and waters with features that are important for natural heritage protection, appreciation, scientific study or education”. No ANSIs are present within the study area (**Figure 1**).

#### **3.2.2 Significant Wetlands**

The potential occurrence of wetland features was screened through a review of available GIS data layers provided by MNRF. Three types of wetland features are identified in MNRF data layers: provincially significant wetlands (PSWs); unevaluated wetlands; and, other wetlands. The status of wetlands is determined through an evaluation according to the Ontario Wetland Evaluation System (OWES). PSWs are those for which an OWES evaluation has resulted in a score sufficient to qualify as a provincially significant feature. Unevaluated wetlands are wetland features that have not undergone an OWES evaluation, while those presented as evaluated or as ‘other’ wetlands are features where an OWES evaluation has been completed and the resulting score was insufficient to qualify as a provincially significant feature. Evaluated/other wetlands may also be considered locally significant wetlands. No wetland features have been identified by MNRF for the study area or 120 m of adjacent lands (**Figure 1**).

#### **3.2.3 Significant Woodland**

The Niagara Region Official Plan defines significant natural heritage features, including significant woodlands as ecologically important in terms of features, functions, representation or amount, and their contribution to the quality, diversity, ecological health and integrity of the Core Natural Heritage System.

Neither the Niagara Region Official Plan, nor the Town of Fort Erie Official Plan identify any significant woodlands within the project area.



### 3.2.4 Significant Valleyland

The Niagara Region Official Plan defines significant natural heritage features, including significant valleylands as ecologically important in terms of features, functions, representation, or amount, and contributing to the quality, diversity, ecological health and integrity of the Core Natural Heritage System. The Niagara River valley is significant and identified as part of an Environmental Conservation Area which includes significant valleylands.

### 3.2.5 Environmentally Sensitive Areas

The Town of Fort Erie Natural Areas Inventory does not identify any Environmentally Sensitive Areas in proximity to the project area (Map 2 in Dougan 2003), nor do either of the Fort Erie or Region of Niagara Official Plans.

## 3.3 Vegetation and Vegetation Communities

The Fort Erie Natural Areas Inventory includes mapping of vegetation communities in settlement areas. No data is provided for the urban area within the study area. However, the shoreline in proximity to the study area is identified as Open Beach Bar/ Open Tallgrass Prairie/ Open Sand Dune (Map 3 in Dougan, 2003).

A review of available imagery for the site shows the location of the existing SPS as within a highly urban area with little in the way of vegetation. The Lakeshore SPS property is occupied by the SPS building, and paved parking. The area behind the SPS that extends to Albany Street consists of manicured lawn and private gardens. The aerial imagery shows that the vegetation along the road right-of-way north of the SPS and the banks of the river east of the property is manicured parkland (mature trees and mowed lawn), as opposed to the Open Beach Bar/Open Tallgrass Prairie/Open Sand Dune identified by Dougan (2003). Field reconnaissance by LGL Limited will be used to confirm site conditions.

## 3.4 Wildlife and Wildlife Habitat

A total of 129 bird species were identified in proximity to the study area through review of secondary sources. A list of the wildlife species records compiled for the study area is provided in **Appendix A**. Given that the data records incorporate areas outside of the immediate study area, not all species are likely to occur within the project area and 120m of adjacent lands. The intent of the wildlife list is to identify species with the potential to occur across the larger geographic setting, and in particular whether SAR are identified in local records.

Fourteen of these bird species identified are listed under the Fish and Wildlife Conservation Act and 99 species are protected under the MBCA. The MBCA prohibits

the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. While migratory insectivorous and non-game birds are protected year-round, migratory game birds are only protected from March 10 to September 1. The study area falls within Environment Canada's Nesting Zone C1 (nesting period: late March- late August). Consequently, to comply with the requirements of the MVCA, it is recommended that disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the window of March 31 to August 31 to avoid the breeding season for the majority of the species protected under the Act.

The area of the Niagara River adjacent to the project area, and in which the emergency outfall is located is designated as Significant Wildlife Habitat (Waterfowl Winter Congregation Area). Habitat within the SPS property is limited, with a notable lack of natural areas.

### **3.5 Fisheries and Aquatic Habitat**

A review of available background information did not identify any streams in or within 120 m of the project area. Fish habitat is limited to the Niagara River located east of the SPS site. An existing box culvert functions as emergency overflow for the SPS and outlets to the river. Design options for the upgraded SPS do not include any changes to the overflow.

Fisheries records were obtained from the MNRF database for the Niagara River (GU-9001-UNR in Figure 1). The species, provincial rankings, preferred thermal regimes and tolerance to environmental perturbations are summarized in **Table 1**.

#### **3.5.1 Water Quality**

The Niagara River is lined with a proliferation of industry along the river and as such, is designated federally as an area of concern due to poor water quality and environmental health. This designation requires concentrated efforts from the provincial, federal, and US government to restore the ecological integrity of this area.

One of the main reasons for this designation is due to toxic chemicals originating in sediment on the Canadian side of the river which has caused elevated levels of toxic chemicals in both the river and its fish (Government of Canada, 2019). Reporting in 2009 by Environment Canada analyzed trace metals and organic compounds in the Niagara River adjacent to Fort Erie. At that time there were several compounds detected that exceeded the strictest agency guidelines, including HCB, PAHs, Dieldrin, DDT, PCBs, Aluminum, and Iron.

**Table 1 Fish Species Occurrence Records for Upper Niagara River (GU-9001-UNR; see Figure 1 for location).**

| Common Name         | Scientific Name                | Thermal Regime | Tolerance                                                | SARA | SARO |
|---------------------|--------------------------------|----------------|----------------------------------------------------------|------|------|
| Black Bullhead      | <i>Ameiurus melas</i>          | warmwater      | intermediate                                             |      |      |
| Bluegill            | <i>Lepomis macrochirus</i>     | warmwater      | intermediate                                             |      |      |
| Bluntnose Minnow    | <i>Pimephales notatus</i>      | warmwater      | moderately tolerant of turbidity                         |      | NAR  |
| Brown Bullhead      | <i>Ameiurus nebulosus</i>      | warmwater      | intermediate                                             |      |      |
| Common Carp         | <i>Cyprinus carpio</i>         | warmwater      | tolerant of turbidity                                    |      |      |
| Common Shiner       | <i>Luxilus cornutus</i>        | coolwater      | moderately tolerant                                      |      |      |
| Creek Chub          | <i>Semotilus atromaculatus</i> | coolwater      | intermediate                                             |      |      |
| Emerald Shiner      | <i>Notropis atherinoides</i>   | coolwater      | moderately tolerant                                      |      |      |
| Freshwater Drum     | <i>Aplodinotus grunniens</i>   | warmwater      | tolerant                                                 |      |      |
| Gizzard Shad        | <i>Dorosoma cepedianum</i>     | coolwater      | tolerant                                                 |      |      |
| Goldfish            | <i>Carassius auratus</i>       | warmwater      | tolerant                                                 |      |      |
| Golden Shiner       | <i>Notemigonus crysoleucas</i> | coolwater      | moderately tolerant of turbidity                         |      |      |
| Green Sunfish       | <i>Lepomis cyanellus</i>       | warmwater      | tolerant                                                 |      | NAR  |
| Hornyhead Chub      | <i>Nocomis biguttatus</i>      | coolwater      | intermediate                                             |      | NAR  |
| Johnny Darter       | <i>Etheostoma nigrum</i>       | coolwater      | moderately tolerant                                      |      |      |
| Largemouth Bass     | <i>Micropterus salmoides</i>   | warmwater      | tolerant but moderately tolerant of turbidity            |      |      |
| Northern Hog Sucker | <i>Hypentelium nigricans</i>   | warmwater      | intolerant of turbidity, siltation, pollution            |      |      |
| Northern Pike       | <i>Esox lucius</i>             | coolwater      | intermediate                                             |      |      |
| Pumpkinseed         | <i>Lepomis gibbosus</i>        | warmwater      | intermediate                                             |      |      |
| Rainbow Trout       | <i>Oncorhynchus mykiss</i>     | coldwater      | intolerant                                               |      |      |
| Rock Bass           | <i>Ambloplites rupestris</i>   | coolwater      | intolerant of siltation                                  |      |      |
| Round Goby          | <i>Neogobius melanostomus</i>  | coolwater      | intermediate                                             |      |      |
| Smallmouth Bass     | <i>Micropterus dolomieu</i>    | coolwater      | moderately tolerant                                      |      |      |
| Spottail Shiner     | <i>Notropis hudsonius</i>      | coolwater      | moderately tolerant                                      |      |      |
| Trout-perch         | <i>Percopsis omiscomaycus</i>  | coldwater      | intermediate                                             |      |      |
| White Bass          | <i>Morone chrysops</i>         | warmwater      | tolerant                                                 |      |      |
| White Crappie       | <i>Pomoxis annularis</i>       | warmwater      | tolerant                                                 |      |      |
| White Perch         | <i>Morone chrysops</i>         | warmwater      | intermediate                                             |      |      |
| White Sucker        | <i>Catostomus commersonii</i>  | coolwater      | generally tolerant, but moderately tolerant of turbidity |      |      |
| Yellow Perch        | <i>Perca flavescens</i>        | coolwater      | moderately tolerant                                      |      |      |



**Legend:**

**Species Information Source:** Eakins, R. J. 2018. Ontario Freshwater Fishes Life History Database. Version 4.82. On-line database. (<http://www.ontariofishes.ca>), accessed 14 August 2020

**ESA;** Ontario Endangered Species Act, 2007

END-Endangered; a species facing imminent extinction or extirpation in Ontario which is candidate for regulation under Ontario's ESA.

EXP-Extirpated; a species that no longer exists in the wild in Ontario but exists elsewhere.

THR-Threatened; a species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SC-Special Concern; a species with characteristics that make it sensitive to human activities or natural events.

NAR - evaluated as not at risk

**SARA;** Species at Risk Act Schedule 1- official list of wildlife species at risk

THR-threatened; a wildlife species likely to become endangered if limiting factors are not reversed.

END-endangered; a wildlife species facing imminent extirpation or extinction.

EXT-extirpated; a species no longer existing in the wild in Canada but occurring elsewhere.

SC-special concern; a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

### **3.6 Species at Risk**

The provincial Endangered Species Act, 2007 (ESA) provides legislation to protect individuals and habitat of species at risk (SAR) in Ontario. The Committee on the Status of Species at Risk in Ontario (COSSARO) is an independent body that classifies native plants or animals in one of four categories ((extirpated, endangered, threatened, special concern). Those species assessed as special concern do not receive species or habitat protection under the ESA; however, their management is encouraged in order to prevent them from becoming further at risk. The MNRF maintains a database of SAR through the Natural Heritage Information Centre (NHIC) which organizes data into a 1 km x 1 km grid. The project area borders Square IDs 1041826 and 1045536. The database search returned records for two endangered species: Loggerhead Shrike (*Lanius ludovicianus*) and Red Mulberry (*Morus rubra*). Records were also found for two threatened species: Lake Sturgeon - Great Lakes population (*Acipenser fulvescens* pop. 3) and Spotted Wintergreen (*Chimaphila maculata*).

Migratory birds and aquatic SAR are also provided protection under the federal Species at Risk Act, 2002 (SARA). The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) provides advice to government on the status of wildlife species. Schedule 1 of the SARA is the official list of wildlife species at risk in Canada.

A search of DFO's Aquatic Species at Risk Mapping was conducted for the study area. No critical habitat for aquatic SAR is identified, however potential is identified for

individual Northern Lamprey (*Ichthyomyzon fossor*) to occur within one kilometre of the project area.

A screening of available habitat was completed for the project area in the context of the SAR records noted above as well as any additional SAR identified through review of other secondary source data. The results of the screening are provided in **Appendix B**. Although records of SAR bats were not found within the study area, candidate maternal roost habitat for SAR bats is identified wherever suitable cavities are found in mature trees. Therefore, measures are identified to mitigate potential effects of any proposed tree removal through the use of timing windows (see Section 5).

## 4.0 Results of Field Investigation

A field visit was conducted on August 11, 2021, to confirm conditions on site during the growing season for vegetation and active season for wildlife. As well, an inventory of the tree resources at 14A Lakeshore Road and areas along the road right-of-way north to Garrison Road was completed on November 9, 2021.

### 4.1 Vegetation and Vegetation Communities

No natural vegetation communities were observed within the SPS property or the road right-of-way associated with Lakeshore Road north to Garrison Road (**Figure 2**). The existing SPS site is comprised of manicured grass, small trees and ornamental plantings, and a pump building. Manicured grass and open grown trees are found within the parkland on the opposite side of Lakeshore Road, and within road rights-of-way and boulevards of Lakeshore Road and Central Avenue north to Garrison Road.

### 4.2 Tree Inventory

An inventory of tree resources was conducted on November 9, 2021 to include the SPS site at 14A Lakeshore Road and the proposed alignment for open cut construction of a sewer forcemain as part of the preferred alternative. The tree inventory was completed to provide recommendations for tree protection. The results of the tree inventory and arborist assessment are summarized in the figures and tables provided in **Appendix C**.

#### 4.2.1 Methods

An ISA Certified Arborist conducted an inventory of tree resources on November 9, 2021. The investigations focused on the proposed disturbance limits (**Figure 2**) and 10 m beyond. Attention was paid to canopy size and shape where tree canopies overhang the study area and may conflict with machinery manoeuvring. The tree inventory was conducted in accordance with the requirements of the Niagara Region Tree By-law 30-2008.





Town of Fort Erie

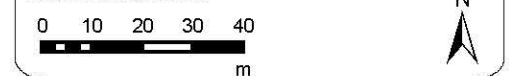
Niagara Region

# LEGEND

- Lakeshore SPS
- Tree
- Existing Sewer
- Proposed Open Cut Sewer
- Study Area



Data Sources: LGL Limited field surveys, Niagara Region & Ministry of Natural Resources and Forestry (LID). Contains information licenced under the Open Government Licence - Ontario.



## LAKESHORE ROAD SPS PREFERRED ALTERNATIVE



|                      |                  |
|----------------------|------------------|
| Project: TA9106      | Figure: 2        |
| Date: November, 2021 | Prepared By: JJP |
| Scale: 1 : 1,500     | Checked By: LRE  |



The following was completed for each tree:

- Species identification (common and scientific names)
- Measurements: diameter at breast height (DBH) and estimation of canopy dripline;
- Location: Tree locations were captured by an Ontario Land Surveyor and matched in the field where feasible. Trees that were not previously surveyed were captured using a survey level GPS unit in the field (EOS Arrow 100 with an accuracy of  $\pm 1$  m). Trees have been assigned a numerical identifier corresponding to their locations and have not been tagged in the field, by request; and,
- Health Assessment: tree condition was assessed in a matrix of trunk integrity, crown structure, and crown vigour, and each category was rated good, fair, or poor. Physical irregularities, defects and general comments were also noted for each tree.

Surveyed trees were screened for rare species as referenced by the MNRF Natural Heritage Information Centre (NHIC), which includes classification of endangered, threatened, and special concern species both at a provincial and federal scale.

#### 4.2.2 Results

A total of 80 trees were identified and assessed during the tree inventory. Trees within the study area ranged in size from 1-87 cm DBH and are in good to fair condition. The large majority of trees were located within municipal parkland and in the rights-of-way, adjacent to Lakeshore Rd. Trees located within parkland and boulevards have the potential to be impacted by the preferred alternative. Tree protection zones have been identified for use at detail design to minimize tree removals, quantify tree impacts and implement tree protection for construction works near trees. No species at risk or rare tree species were observed within the limits of the tree survey conducted. A detailed summary of all trees surveyed are presented in the figures and tables provided in **Appendix C**.

### 4.3 Wildlife and Wildlife Habitat

Vegetation on the SPS site includes manicured grass, small ornamental plantings with some planted amenity trees occurring on the boundary of the parcel. Manicured grass and open grown trees are found within the parkland on the east side of Lakeshore Road, and within road rights of way and boulevards of Lakeshore Road and Central Avenue. No wildlife species were observed during the site visit in August. Bird species (and their nests) afforded protection under the MBCA may nest in trees and/or on buildings located within the SPS site; however, no nests were identified during the field investigation in 2021. Given the high level of disturbance and lack of natural heritage features, limited

habitat function for wildlife was noted within the study area. Consequently, the wildlife assemblage expected to use areas within the project limits are those part of highly anthropogenic communities. No specialized wildlife habitats (e.g., deer wintering area, reptile hibernacula, amphibian breeding) were identified within the lands examined. A Waterfowl Winter Concentration Area is associated with the Niagara River, located east of the study area (**Figure 1**). No species at risk or habitat suitable to support them was identified within the SPS site.

## 5.0 Design Alternatives

The focus of the EA is to implement the recommendations made in the 2016 Water and Wastewater Master Servicing Plan (GM BluePlan, 2017), specifically to address wet weather constraints and the need for increased operational capacity. A number of design alternatives were considered in this regard. The preferred alternative as presented in the Environmental Study Report (GM BluePlan, 2021) restricts works to within the existing SPS property at 14A Lakeshore Road and the right-of-way and boulevards of Lakeshore Road and Central Avenue (**Figure 2**). The preferred design includes open cut construction of a new forcemain to connect to an existing sewer near the terminus of Garrison Road. Although no in-water or near water (within 30 metres) works are identified as part of the preferred alternative, erosion and sediment controls will be an important part of the mitigation identified to protect surface water quality and fish habitat within the Niagara River, particularly if dewatering is required. A summary of potential impacts to natural heritage resulting from the preferred alternative and recommendations to mitigate those effects are provided in the sections that follow.

### 5.1 Impact Assessment

The preferred alternative will result in disturbance within the property parcel at 14A Lakeshore Road and the area identified for open cut construction along the road right-of-way north to Garrison Road, as represented in **Figure 2**. The SPS site and area identified for the proposed forcemain is comprised of an existing pump building, manicured grass, ornamental plantings and open grown trees. No naturalized vegetation communities are found within, or in proximity to, the preferred alternative. Therefore, no impact to vegetation communities is associated with the proposed works. Individual open grown/planted trees are in conflict with the preferred alternative. Additional trees in proximity to construction have the potential to be harmed through compaction of soils and/or unintended conflict with construction machinery. No plants listed as threatened or endangered were found within or in proximity to the site during LGL's site visit, therefore no impacts to plant SAR are identified.

Given the lack of naturalized vegetation communities onsite, the landscape offers little opportunity for wildlife, such that the wildlife assemblage with potential to use the study

area are species tolerant of anthropogenic disturbance. Although no evidence of nesting was observed during the site visit completed in early August, tree resources and the existing SPS structure represent potential nesting and foraging opportunities for birds protected under the MBCA. Where works are proposed to occur during the active season for wildlife, there is also potential for incidental impacts to wildlife entering the construction zone. Although no wildlife SAR was identified on site during the field visit, mature trees with suitable cavities represent candidate SAR bat maternal roost habitat.

## **5.2 Mitigation Recommendations**

The timing of vegetation removal is subject to the MBCA. This activity will have the least likelihood of impact on bird nests, eggs and young if scheduled for the fall or winter months, to avoid the breeding bird season. Nesting habitat encompasses all vegetation types to include trees, grasses, and shrubs. As well, several bird species construct their nests on built structures. Disturbance to any nest, eggs or young is prohibited under the MBCA.

Mitigation measures for breeding birds include the following:

- It is strongly recommended that any vegetation removal (including dead standing trees, or pruning/trimming of trees, grubbing of grassed areas to facilitate construction) be timed to avoid the breeding bird season which extends from approximately March 31 to August 31;
- Should tree and vegetation removal be required during the bird breeding season, a qualified avian biologist should complete a bird nesting survey to identify any active nests and provide recommendations for avoidance in order to maintain compliance with the MBCA; and,
- Disturbance in proximity to the existing SPS or other built structures on the property should also be undertaken outside of the bird nesting season or, after a screening of the structure has been completed by a qualified biologist to rule out use of the structure by breeding birds.

Tree removal or pruning of any mature open grown trees with the potential to provide roosting habitat for bats (i.e., suitable cavities) should be completed outside of the roosting period of April 1 to September 30 for bats (to be confirmed with MECP in detail design once tree impacts are better understood). In order to protect tree resources, a tree protection plan is recommended at detail design once the construction footprint is better understood. Part of the mitigation for trees should include the delineation of tree protection zones/driplines with tree protection fencing. To avoid unintentional removal or damage of trees adjacent to the construction area, the limits of construction should be clearly delineated. Heavy equipment (wheeled or tracked) should remain outside of the dripline of trees and within delineated construction and staging areas.



An Erosion and Sediment Control Plan is recommended given the proximity of the site to the Niagara River and associated fish habitat. Where dewatering of the site is required for construction, a Dewatering Plan should identify measures to protect water quality of the ultimate receiver (watercourse/drain), as warranted. Where the receiver is identified to provide fish habitat (e.g., Niagara River), additional mitigation for water quality and quantity may be required. The following mitigation recommendations are provided where dewatering is proposed:

- Implement measures for managing water being pumped/diverted from excavations, such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a settling basin or other filtration system (filter bag, settling tanks, etc.), located in a vegetated area, a minimum of 30 m from existing wetlands or aquatic habitat;
- Ensure dewatering activities are addressed in a site-specific Environmental Management Plan to address alterations to baseflow and discharge of water back to surface features (from both a quantity and quality aspect); and,
- Include dewatering discharge points on the final Erosion and Sedimentation Control Plans for the project.

## 6.0 Summary

No changes (volume, quality) to the existing emergency overflow to the Niagara River are proposed as part of the preferred alternative. Given that the footprint of construction and operational disturbance is outside of any naturalized vegetation communities and in areas that represent limited opportunity for wildlife, the potential for impact to natural heritage associated with the proposed activity is considered low. Where the proposed forcemain is constructed through open cut construction, strict erosion and sediment controls are recommended to protect surface water and habitat quality in the Niagara River. LGL recommends that mitigation measures (e.g., construction timing windows, tree protection fencing, dewatering treatment and discharge) be refined at detail design and included on tender documents. Where mitigation can be employed effectively, no residual impact to natural heritage or tree resources is anticipated.

## 7.0 References

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## **Appendix A Wildlife List**



Appendix A Table 1 Wildlife Species List – Lakeshore Road SPS Study Area.

| Type | Scientific Name                     | Common Name                  | G-Rank | S-Rank   | SARA<br>Schedule | SARA | ESA | eBird- Parking<br>Beatrice St. | eBird- Peace<br>Bridge (Ontario) | NHIC | FWCA | MBCA |
|------|-------------------------------------|------------------------------|--------|----------|------------------|------|-----|--------------------------------|----------------------------------|------|------|------|
| Bird | <i>Anas rubripes</i>                | American Black Duck          | G5     | S4       |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Fulica americana</i>             | American Coot                | G5     | S4B      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Corvus brachyrhynchos</i>        | American Crow                | G5     | S5B      |                  |      |     | X                              | X                                |      |      |      |
| Bird | <i>Spinus tristis</i>               | American Goldfinch           | G5     | S5B      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Falco sparverius</i>             | American Kestrel             | G5     | S4       |                  |      |     |                                | X                                |      | P    |      |
| Bird | <i>Turdus migratorius</i>           | American Robin               | G5     | S5B      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Spizelloides arborea</i>         | American Tree Sparrow        | G5     | S4B      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Anas americana</i>               | American Wigeon              | G5     | S4       |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Haliaeetus leucocephalus</i>     | Bald Eagle                   | G5     | S2N,S4B  |                  |      | SC  | X                              | X                                |      | P    |      |
| Bird | <i>Icterus galbula</i>              | Baltimore Oriole             | G5     | S4B      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Riparia riparia</i>              | Bank Swallow                 | G5     | S4B      | Schedule 1       | THR  | THR |                                | X                                |      |      | X    |
| Bird | <i>Hirundo rustica</i>              | Barn Swallow                 | G5     | S4B      | Schedule 1       | THR  | THR | X                              | X                                |      |      | X    |
| Bird | <i>Megaceryle alcyon</i>            | Belted Kingfisher            | G5     | S4B      |                  |      |     |                                | X                                |      | P    |      |
| Bird | <i>Melanitta americana</i>          | Black Scoter                 | G5     | S4B, S4N |                  |      |     | X                              | X                                |      |      |      |
| Bird | <i>Chlidonias niger</i>             | Black Tern                   | G4     | S3B      |                  |      | SC  | X                              | X                                |      |      | X    |
| Bird | <i>Pluvialis squatarola</i>         | Black-bellied Plover         | G5     | S4N      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Poecile atricapillus</i>         | Black-capped Chickadee       | G5     | S5       |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Nycticorax nycticorax</i>        | Black-crowned Night Heron    | G5     | S3B,S3N  |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Rissa tridactyla</i>             | Black-legged Kittiwake       | G5     | SNA      |                  |      |     |                                | X                                |      |      |      |
| Bird | <i>Setophaga striata</i>            | Blackpoll Warbler            | G5     | S4B      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Setophaga virens</i>             | Black-throated Green Warbler | G5     | S5B      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Cyanocitta cristata</i>          | Blue Jay                     | G5     | S5       |                  |      |     | X                              | X                                |      | P    |      |
| Bird | <i>Chroicocephalus philadelphia</i> | Bonaparte's Gull             | G5     | S4B,S4N  |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Buteo platypterus</i>            | Broad-winged Hawk            | G5     | S5B      |                  |      |     |                                | X                                |      | P    |      |
| Bird | <i>Certhia americana</i>            | Brown Creeper                | G5     | S5B      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Molothrus ater</i>               | Brown-headed Cowbird         | G5     | S4B      |                  |      |     |                                | X                                |      |      |      |

| Type | Scientific Name                   | Common Name              | G-Rank | S-Rank  | SARA Schedule | SARA | ESA | eBird- Parking Beatrice St. | eBird- Peace Bridge (Ontario) | NHIC | FWCA | MBCA |
|------|-----------------------------------|--------------------------|--------|---------|---------------|------|-----|-----------------------------|-------------------------------|------|------|------|
| Bird | <i>Bucephala albeola</i>          | Bufflehead               | G5     | S4      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Branta canadensis</i>          | Canada Goose             | G5     | S5      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Aythya valisineria</i>         | Canvasback               | G5     | S1B,S4N |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Setophaga tigrina</i>          | Cape May Warbler         | G5     | S5B     |               |      |     | X                           |                               |      |      | X    |
| Bird | <i>Thryothorus ludovicianus</i>   | Carolina Wren            | G5     | S4      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Hydroprogne caspia</i>         | Caspian Tern             | G5     | S3B     |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Bombycilla cedrorum</i>        | Cedar Waxwing            | G5     | S5B     |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Chaetura pelagica</i>          | Chimney Swift            | G5     | S4B,S4N | Schedule 1    | THR  | THR |                             | X                             |      |      | X    |
| Bird | <i>Spizella passerina</i>         | Chipping Sparrow         | G5     | S5B     |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Petrochelidon pyrrhonota</i>   | Cliff Swallow            | G5     | S4B     |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Bucephala clangula</i>         | Common Goldeneye         | G5     | S5      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Quiscalus quiscula</i>         | Common Grackle           | G5     | S5B     |               |      |     |                             | X                             |      |      |      |
| Bird | <i>Gavia immer</i>                | Common Loon              | G5     | S5B,S5N |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Mergus merganser</i>           | Common Merganser         | G5     | S5B,S5N |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Chordeiles minor</i>           | Common Nighthawk         | G5     | S4B     | Schedule 1    | THR  | SC  |                             | X                             |      |      | X    |
| Bird | <i>Carduelis flammea</i>          | Common Redpoll           | G5     | S4B     |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Sterna hirundo</i>             | Common Tern              | G5     | S4B     |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Accipiter cooperii</i>         | Cooper's Hawk            | G5     | S4      |               |      |     | X                           | X                             |      | P    |      |
| Bird | <i>Junco hyemalis</i>             | Dark-eyed Junco          | G5     | S5B     |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Phalacrocorax auritus</i>      | Double-crested Cormorant | G5     | S5B     |               |      |     | X                           | X                             |      |      |      |
| Bird | <i>Picoides pubescens</i>         | Downy Woodpecker         | G5     | S5      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Calidris alpina</i>            | Dunlin                   | G5     | S4B,S5N |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Podiceps nigricollis</i>       | Eared Grebe              | G5     | SNA     |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Sialia sialis</i>              | Eastern Bluebird         | G5     | S5B     |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Sturnus vulgaris</i>           | European Starling        | G5     | SNA     |               |      |     | X                           | X                             |      |      |      |
| Bird | <i>Coccothraustes vespertinus</i> | Evening Grosbeak         | G5     | S4B     | Schedule 1    | SC   | SC  |                             | X                             |      |      | X    |
| Bird | <i>Leucophaeus pipixcan</i>       | Franklin's Gull          |        |         |               |      |     |                             | X                             |      |      |      |

| Type | Scientific Name                               | Common Name              | G-Rank | S-Rank   | SARA Schedule | SARA | ESA | eBird- Parking Beatrice St. | eBird- Peace Bridge (Ontario) | NHIC | FWCA | MBCA |
|------|-----------------------------------------------|--------------------------|--------|----------|---------------|------|-----|-----------------------------|-------------------------------|------|------|------|
| Bird | <i>Sterna forsteri</i>                        | Forster's Tern           | G5     | S2B      |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Anas strepera</i>                          | Gadwall                  | G5     | S4       |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Larus hyperboreus</i>                      | Glaucous Gull            | G5     | S4N      |               |      |     |                             | X                             |      |      |      |
| Bird | <i>Regulus satrapa</i>                        | Golden-crowned Kinglet   | G5     | S5B      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Dumetella carolinensis</i>                 | Grey Catbird             | G5     | S4B      |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Larus marinus</i>                          | Great Black-backed Gull  | G5     | S2B      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Ardea herodias</i>                         | Great Blue Heron         | G5     | S4       |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Ardea alba</i>                             | Great Egret              | G5     | S2B      |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Aythya marila</i>                          | Greater Scaup            | G5     | S4       |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Anas crecca</i>                            | Green-winged Teal        | G5     | S4       |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Picoides villosus</i>                      | Hairy Woodpecker         | G5     | S5       |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Histrionicus histrionicus</i>              | Harlequin Duck           | G4     | SNA      |               |      |     |                             | X                             |      |      |      |
| Bird | <i>Larus argentatus</i>                       | Herring Gull             | G5     | S5B, S5N |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Lophodytes cucullatus</i>                  | Hooded Merganser         | G5     | S5B,S5N  |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Podiceps auritus</i>                       | Horned Grebe             | G5     | S1B,S4N  | Schedule 1    | SC   | SC  | X                           | X                             |      |      | X    |
| Bird | <i>Haemorhous mexicanus</i>                   | House Finch              | G5     | SNA      |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Passer domesticus</i>                      | House Sparrow            | G5     | SNA      |               |      |     | X                           | X                             |      |      |      |
| Bird | <i>Larus glaucoides</i>                       | Iceland Gull             | G5     | S4N      |               |      |     |                             | X                             |      |      |      |
| Bird | <i>Charadrius vociferus</i>                   | Killdeer                 | G5     | S5B,S5N  |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Somateria spectabilis</i>                  | King Eider               | G5     | SHB      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Larus fuscus</i>                           | Lesser Black-backed Gull | G5     | SNA      |               |      |     |                             | X                             |      |      | X    |
| Bird | <i>Aythya affinis</i>                         | Lesser Scaup             | G5     | S4       |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Hydrocoloeus minutus</i>                   | Little Gull              | G5     | S1B      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Lanius ludovicianus Eastern subspecies</i> | Loggerhead Shrike        | G4     | S2B      | Schedule 1    | END  | END |                             |                               | X    |      | X    |
| Bird | <i>Clangula hyemalis</i>                      | Long-tailed Duck         | G5     | S3B      |               |      |     | X                           | X                             |      |      | X    |
| Bird | <i>Anas platyrhynchos</i>                     | Mallard                  | G5     | S5       |               |      |     | X                           | X                             |      |      | X    |



| Type | Scientific Name                         | Common Name                   | G-Rank | S-Rank  | SARA<br>Schedule | SARA | ESA | eBird- Parking<br>Beatrice St. | eBird- Peace<br>Bridge (Ontario) | NHIC | FWCA | MBCA |
|------|-----------------------------------------|-------------------------------|--------|---------|------------------|------|-----|--------------------------------|----------------------------------|------|------|------|
| Bird | <i>Falco columbarius</i>                | Merlin                        | G5     | S5B     |                  |      |     |                                | X                                |      | P    |      |
| Bird | <i>Zenaida macroura</i>                 | Mourning Dove                 | G5     | S5      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Cygnus olor</i>                      | Mute Swan                     | G5     | SNA     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Oreothylpis ruficapilla</i>          | Nashville Warbler             | G5     | S5B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Cardinalis cardinalis</i>            | Northern Cardinal             | G5     | S5      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Colaptes auratus</i>                 | Northern Flicker              | G5     | S4B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Mimus polyglottos</i>                | Northern Mockingbird          | G5     | S4      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Setophaga americana</i>              | Northern Parula               | G5     | S4B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Anas acuta</i>                       | Northern Pintail              | G5     | S5      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Stelgidopteryx serripennis</i>       | Northern Rough-winged Swallow | G5     | S4B     |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Icterus spurius</i>                  | Orchard Oriole                | G5     | S4B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Pandion haliaetus</i>                | Osprey                        | G5     | S5B     |                  |      |     | X                              | X                                |      | P    |      |
| Bird | <i>Stercorarius parasiticus</i>         | Parasitic Jaeger              | G5     | S2B     |                  |      |     | X                              |                                  |      |      | X    |
| Bird | <i>Falco peregrinus/anatum/tundrius</i> | Peregrine Falcon              | G4     | S3B     | Schedule 1       | SC   | SC  | X                              | X                                |      | P    |      |
| Bird | <i>Podilymbus podiceps</i>              | Pied-billed Grebe             | G5     | S4B,S4N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Setophaga pinus</i>                  | Pine Warbler                  | G5     | S5B     |                  |      |     | X                              |                                  |      |      | X    |
| Bird | <i>Progne subis</i>                     | Purple Martin                 | G5     | S4B     |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Melanerpes carolinus</i>             | Red-bellied Woodpecker        | G5     | S4      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Mergus serrator</i>                  | Red-breasted Merganser        | G5     | S4B,S5N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Aythya americana</i>                 | Redhead                       | G5     | S2B,S4N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Podiceps grisegena</i>               | Red-necked Grebe              | G5     | S3B,S4N |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Phalaropus lobatus</i>               | Red-necked Phalarope          | G4G5   | S3S4B   | Schedule 1       | SC   | SC  | X                              | X                                |      |      | X    |
| Bird | <i>Buteo jamaicensis</i>                | Red-tailed Hawk               | G5     | S5      |                  |      |     | X                              | X                                |      | P    |      |
| Bird | <i>Gavia stellata</i>                   | Red-throated Loon             | G5     | S1N,S3B |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Agelaius phoeniceus</i>              | Red-winged Blackbird          | G5     | S4      |                  |      |     | X                              | X                                |      |      |      |
| Bird | <i>Larus delawarensis</i>               | Ring-billed Gull              | G5     | S5B,S4N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Aythya collaris</i>                  | Ring-necked Duck              | G5     | S5      |                  |      |     |                                | X                                |      |      | X    |

| Type | Scientific Name                    | Common Name             | G-Rank | S-Rank  | SARA<br>Schedule | SARA | ESA | eBird- Parking<br>Beatrice St. | eBird- Peace<br>Bridge (Ontario) | NHIC | FWCA | MBCA |
|------|------------------------------------|-------------------------|--------|---------|------------------|------|-----|--------------------------------|----------------------------------|------|------|------|
| Bird | <i>Columba livia</i>               | Rock Pigeon             | G5     | SNA     |                  |      |     | X                              | X                                |      |      |      |
| Bird | <i>Regulus calendula</i>           | Ruby-crowned Kinglet    | G5     | S4B     |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Oxyura jamaicensis</i>          | Ruddy Duck              | G5     | S4B,S4N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Xema sabini</i>                 | Sabine's Gull           | G5     | SNA     |                  |      |     |                                | X                                |      |      |      |
| Bird | <i>Accipiter striatus</i>          | Sharp-shinned Hawk      | G5     | S5      |                  |      |     |                                | X                                |      | P    |      |
| Bird | <i>Plectrophenax nivalis</i>       | Snow bunting            | G5     | SNA     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Bubo scandiaca</i>              | Snowy Owl               | G5     | SNA     |                  |      |     |                                | X                                |      | P    |      |
| Bird | <i>Melospiza melodia</i>           | Song Sparrow            | G5     | S5B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Melanitta perspicillata</i>     | Surf Scoter             | G5     | S4B,S4N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Melospiza georgiana</i>         | Swamp Sparrow           | G5     | S5B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Tachycineta bicolor</i>         | Tree Swallow            | G5     | S4B     |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Baeolophus bicolor</i>          | Tufted Titmouse         | G5     | S4      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Cygnus columbianus</i>          | Tundra Swan             | G5     | S4      |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Cathartes aura</i>              | Turkey Vulture          | G5     | S5B     |                  |      |     | X                              | X                                |      | P    |      |
| Bird | <i>Vireo gilvus</i>                | Warbling Vireo          | G5     | S5B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Sitta carolinensis</i>          | White-breasted Nuthatch | G5     | S5      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Zonotrichia albicollis</i>      | White-throated Sparrow  | G5     | S5B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Melanitta fusca</i>             | White-winged Scoter     | G5     | S4B,S4N |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Meleagris gallopavo</i>         | Wild Turkey             | G5     | S5      |                  |      |     |                                | X                                |      | G    |      |
| Bird | <i>Aix sponsa</i>                  | Wood Duck               | G5     | S5      |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Setophaga palmarum palmarum</i> | Palm Warbler            | G5TU   | S1B     |                  |      |     | X                              | X                                |      |      | X    |
| Bird | <i>Setophaga petechia</i>          | Yellow Warbler          | G5     | S5B     |                  |      |     |                                | X                                |      |      | X    |
| Bird | <i>Setophaga coronata</i>          | Yellow-rumped Warbler   | G5     | S5B     |                  |      |     | X                              | X                                |      |      | X    |

## Appendix A Table 1 Legend

**G-Rank** (Global Rank): assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts and The Nature Conservancy to designate a rarity rank based on the range-wide status of species, subspecies or variety, according to the following.

G1- extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals or because of some factor (s) making it especially vulnerable

G2-very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences or because of some factor (s) making it vulnerable to extinction

G3- rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences but with a large number of individuals in some populations or may be susceptible to large-scale disturbances

G4-common; usually more than 100 occurrences, usually not susceptible to immediate threats

G5-very common; demonstrably secure under present conditions

GH-historic; no records in the past 20 years

GU-status uncertain; often because of low search effort or cryptic nature of species, more data needed

GX-globally extinct; no records despite specific searches

?-denotes inexact numeric rank

G- global rank has not been obtained from the Nature Conservancy

G?-unranked; or if following a ranking the rank is tentatively assigned

Q-denotes taxonomic status of species, subspecies or variety as questionable

T-denotes the rank applies to a subspecies or variety

**S-Rank** (Provincial or Subnational ranks): used by the Natural Heritage Information Centre to set protection priorities for rare species and natural communities. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

SX-presumed extirpated; not located despite intensive searches

SH-historical; no known extant occurrences in past 20 years

S1-critically imperiled; typically 1 to 5 extant occurrences

S2-imperiled; typically 6 to 20 extant occurrences

S3-vulnerable; typically 21 to 80 extant occurrences

S4-apparently secure; uncommon but not rare; some cause for long-term concern; usually >80 extant occurrences

S5-secure; common, widespread and abundant

SNA-status not applicable; not a suitable target for conservation (e.g. non-native species)

SU-unrankable; insufficient information to rank confidently

SNR-not ranked

## ESA

Ontario Endangered Species Act, 2007

END-Endangered; a species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA



EXP-Extirpated; a species that no longer exists in the wild in Ontario but exists elsewhere

THR-Threatened; a species that is at risk of becoming endangered in Ontario if limiting factors are not reversed

SC-Special Concern; a species with characteristics that make it sensitive to human activities or natural events

**SARA**

Species at Risk Act Schedule 1- official list of wildlife Species at Risk

THR-threatened; a wildlife species likely to become endangered if limiting factors are not reversed

END-endangered; a wildlife species facing imminent extirpation or extinction

EXT-extirpated; a species no longer existing in the wild in Canada but occurring elsewhere

SC-special concern; a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats

## **Appendix B Species at Risk Habitat Screening**

Screening for Species at Risk with Potential to Occur in the Study Area.

| Group | Species                                           | SARO Status/ ESA Protection                                                                        | Data Source | Habitat Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Habitat Potential within the Study Area                                                                                   | Further Effort Recommended in Detail Design                                                                    |
|-------|---------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Plant | Red Mulberry<br>( <i>Morus rubra</i> )            | Endangered /Species and General Habitat Protection, Category 1 & Category 2                        | NHIC        | In Ontario, red mulberry occurs in moist, well-drained, forested habitats including floodplains, bottomlands, the slopes and ravines along the southern portion of the Niagara escarpment and in swales on some western Lake Erie sand spits. This species is moderately shade tolerant but grows best in forest openings.                                                                                                                                                                                                       | Habitat potential lacking within the project area.                                                                        | No further effort recommended.                                                                                 |
| Plant | Spotted Wintergreen                               | Endangered /Species and General Habitat Protection                                                 | NHIC        | In Ontario, spotted wintergreen occurs in sandy, well-drained soils associated with dry to fresh oak-pine or oak dominated woodlands. It requires partial shade and limited competition from other groundcover species. It is restricted to southern Ontario, and the only currently known populations are from Norfolk County and Niagara Region.                                                                                                                                                                               | Habitat potential lacking within the project area.                                                                        | No further effort recommended.                                                                                 |
| Bird  | Bald Eagle<br>( <i>Haliaeetus leucocephalus</i> ) | Special Concern/ESA protections do not apply                                                       | eBird       | In Ontario, bald eagle nests are typically found near the shorelines of lakes or large rivers, often on forested islands. The large, conspicuous nests are typically found in large super-canopy trees along water bodies.                                                                                                                                                                                                                                                                                                       | Suitable habitat potential along the Niagara River across from the study area.                                            | The project area is not within or contiguous with potential habitat-project works not expected to interfere.   |
| Bird  | Bank Swallow<br>( <i>Riparia riparia</i> )        | Threatened /Species and General Habitat Protection                                                 | eBird       | In Ontario, the bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and riverbanks, sand and gravel pits, and roadcuts. Nests are generally built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided.                                                                                                | Suitable habitat potential along the Niagara River and its banks across from the project area.                            | The project area is not within or contiguous with potential habitat-project works not expected to interfere.   |
| Bird  | Barn Swallow<br>( <i>Hirundo rustica</i> )        | Endangered/ Species and General Habitat Protection, Category 1, Category 2 & Category 3 Protection | eBird       | In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake, and river shorelines, cleared right-of-ways, and wetlands. Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused. | Suitable habitat potential amongst buildings and within the Niagara River and its shoreline across from the project area. | No evidence of use of the project area (i.e., nests) by the species identified. No further effort recommended. |
| Bird  | Black Tern<br>( <i>Chlidonias niger</i> )         | Special Concern/ESA protections do not apply                                                       | eBird       | Black terns breed in freshwater marshlands where it forms small colonies. It prefers marshes or marsh complexes greater than 20 ha in area and which are not surrounded by wooded area. Black terns are sensitive to the presence of agricultural activities. The black tern nests in wetlands with an even combination of open water and emergent vegetation, and still waters of 0.5-1.2 m deep. Preferred nest sites have short dense vegetation or tall sparse                                                               | Habitat potential lacking within the project area.                                                                        | No further effort recommended.                                                                                 |



|      |                                                           |                                                                                        |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                           |                                                                                                                                                                                                               |
|------|-----------------------------------------------------------|----------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                           |                                                                                        |       | vegetation often consisting of cattails, bulrushes and occasionally bur reed or other marshland plants. Black terns also require posts or snags for perching.                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                           |                                                                                                                                                                                                               |
| Bird | Chimney Swift<br>( <i>Chaetura pelagica</i> )             | Threatened /Species and General Habitat Protection & Category 1 Protection             | eBird | In Ontario, chimney swift breeding habitat is varied and includes urban, suburban, rural, and wooded sites. They are most associated with towns and cities with large concentrations of chimneys. Preferred nesting sites are dark, sheltered spots with a vertical surface to which the bird can grip. Unused chimneys are the primary nesting and roosting structure, but other anthropogenic structures and large diameter cavity trees are also used.                                                                                                                | Suitable habitat potential in chimneys adjacent to the project area.                      | No evidence of use of the project area (i.e., nests) by the species identified. No suitable chimneys on existing pump station. No suitable habitat for the species identified. No further effort recommended. |
| Bird | Common Nighthawk<br>( <i>Chordeiles minor</i> )           | Special Concern/ESA protections do not apply                                           | eBird | Common nighthawks require areas with large open habitat. This includes farmland, open woodlands, clear cuts, burns, rock outcrops, alvars, bog ferns, prairies, gravel pits and gravel rooftops in cities.                                                                                                                                                                                                                                                                                                                                                               | Habitat potential lacking within the project area.                                        | No further effort recommended.                                                                                                                                                                                |
| Bird | Evening Grosbeak<br>( <i>Coccothraustes vespertinus</i> ) | Special Concern/ESA protections do not apply                                           | eBird | During the breeding season, the Evening Grosbeak is generally found in open, mature mixed-wood forests dominated by fir species, White Spruce and/ or Trembling Aspen. Its abundance is strongly linked to the cycle of its primary prey, the Spruce Budworm. Outside the breeding season, the species depends mostly on seed crops from tree species in the boreal forest such as firs and spruces. It is also attracted to ornamental trees that have seeds of fruit and may visit bird feeders.                                                                       | Habitat potential amongst urban properties and the parkland adjacent to the project area. | No evidence of use of the project area (i.e., nests) by the species identified. No suitable habitat for the species identified. No further effort recommended.                                                |
| Bird | Horned Grebe<br>( <i>Podiceps auratus</i> )               | Special Concern/ESA protections do not apply                                           | eBird | The horned grebe usually nests in small ponds, marshes and shallow bays that contain areas of open water and emergent vegetation. Nests are usually located within a few metres of open water. The species is found across North America and Eurasia. Most of its North American breeding range is in Canada, extending from northwestern Ontario to British Columbia and north to Alaska (Western population). A small, isolated breeding population also exists in Quebec, where it is limited to the Magdalen Islands. The horned grebe is a rare breeder in Ontario. | Habitat potential lacking within the project area.                                        | No further effort recommended.                                                                                                                                                                                |
| Bird | Loggerhead Shrike ( <i>Lanius ludovicians</i> )           | Endangered/ Species and General Habitat Protection, Category 1 & Category 2 Protection | NHIC  | In Ontario, the loggerhead shrike breeds in open country habitat characterized by short grasses with scattered shrubs or low trees. Unimproved pasture containing scattered hawthorns ( <i>Crataegus</i> spp.) on shallow soils over limestone bedrock is the preferred habitat. Preferred nest sites include isolated hawthorns or red cedar. Males defend large territories of approximately 50 ha.                                                                                                                                                                    | Habitat potential lacking within the project area.                                        | No further effort recommended.                                                                                                                                                                                |

|      |                                                                                                        |                                                          |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                      |                                                                                                                                                                              |
|------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bird | Peregrine Falcon<br>( <i>Falco peregrinus</i> )                                                        | Special Concern/ESA<br>protections do not<br>apply       | eBird       | In Ontario, peregrine falcon breeds in areas containing suitable nesting locations and sufficient prey resources. Such habitat includes both natural locations containing cliff faces (heights of 50 - 200 m preferred) and also anthropogenic landscapes including urban centres containing tall buildings, open pit mines and quarries, and road cuts. Peregrine falcons nest on cliff ledges and crevices and building ledges.                                                                                                                                                                                                                                                                          | Habitat potential lacking within the project area.                                                                                                                   | No further effort recommended.                                                                                                                                               |
| Bird | Red-necked Phalarope<br>( <i>Phalaropus lobatus</i> )                                                  | Special Concern/ESA<br>protections do not<br>apply       | eBird       | Red-necked phalaropes live in coastal and inland marshes where it feeds in shallow ponds and nests on the grassy edges. It avoids mud and dense shrubs. Nests are located on the ground in dense grasses and sedges. During migration and in the winter, the Red-necked Phalarope is always near water, either saltwater, or freshwater ponds, lakes, ditches or lagoons. The species breeds on Hudson Bay and James Bay in the summer but during spring and fall migration may occasionally be observed in the rest of Ontario. It is most abundant in summer in Polar Bear Provincial Park. In the fall it migrates out of the province to overwinter offshore in the Pacific Ocean from Panama to Peru. | Habitat potential is lacking within the project area.                                                                                                                | No further effort recommended.                                                                                                                                               |
| Fish | Northern Brook Lamprey (Great Lakes – Upper St. Lawrence Population)<br>( <i>Ichthyomyzon fossor</i> ) | Special Concern/ESA<br>protections do not<br>apply       | DFO Mapping | Northern brook lamprey occur in clear streams of varying sizes. Adults prefer riffle and run areas of coldwater streams and rivers with gravel and sand substrates. Spawning habitat usually includes a swift current and coarse gravel or rocky substrate, with which males construct inconspicuous nests.                                                                                                                                                                                                                                                                                                                                                                                                | Habitat potential identified by DFO within the Niagara River. No in-water works proposed. Potential for impact relates to changes in water quality within the river. | No change in existing overflow from pumping station is proposed, therefore no change to water quality is expected to result from the project. No further effort recommended. |
| Fish | Lake Sturgeon (Great Lakes – Upper St. Lawrence population)<br>( <i>Acipenser fulvescens</i> )         | Endangered/<br>Species and General<br>Habitat Protection | NHIC        | This species typically inhabits highly productive shoal areas of large lakes and rivers. They are bottom dwellers and prefer depths between 5-10 metres and mud or gravel substrates. Small sturgeons are often found on gravelly shoals near the mouths of rivers. They spawn in depths of 0.5 to 4.5 metres in areas of swift water or rapids. Where suitable spawning rivers are not available, such as in the lower Great Lakes, they are known to spawn in wave action over rocky ledges or around rocky islands.                                                                                                                                                                                     | Habitat potential within the Niagara River. No in-water works proposed. Potential for impact relates to changes in water quality within the river.                   | No change in existing overflow from pumping station is proposed, therefore no change to water quality is expected to result from the project. No further effort recommended. |

## **Appendix C Tree Inventory Results**

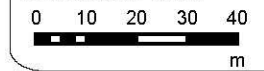




# LEGEND

- 57 Tree ID
- Hedgerow
- Dripline
- Tree Protection Zone (TPZ)
- Study Area

Data Sources: LGL Limited field surveys, Niagara Region & Ministry of Natural Resources and Forestry (LIO). Contains information licenced under the Open Government Licence - Ontario.



## LAKESHORE ROAD SPS TREE RESOURCES



|                      |                  |
|----------------------|------------------|
| Project: TA9106      | Figure: C-1      |
| Date: November, 2021 | Prepared By: JJP |
| Scale: 1 : 1,500     | Checked By: LRE  |



| Tree # | Scientific Name                    | Common Name             | DBH (cm) | Additional Stems | CONDITION |    |    |                     | Location |                | TPZ (m) | COMMENTS                                          |
|--------|------------------------------------|-------------------------|----------|------------------|-----------|----|----|---------------------|----------|----------------|---------|---------------------------------------------------|
|        |                                    |                         |          |                  | TI        | CS | CV | Radial Dripline (m) | Number   | Street         |         |                                                   |
| 1      | Picea pungens                      | blue spruce             | 18.0     |                  | g         | g  | g  | 1                   | 14A      | Lakeshore Road | 2.00    |                                                   |
| 2      | Fagus sylvatica                    | European Beech          | 20.0     | 19               | g         | g  | g  | 3                   | 14A      | Lakeshore Road | 4.00    |                                                   |
| 3      | Salix sp.                          | willow                  | 10.0     | 9,9,5            | g         | g  | g  | 2                   | 14A      | Lakeshore Road | 3.00    | Epicormic                                         |
| 4      | Celtis occidentalis                | common hackberry        | 17.0     |                  | g         | g  | g  | 2                   | 14A      | Lakeshore Road | 3.00    | Growing 50cm from sidewalk                        |
| 5      | Aesculus glabra                    | Ohio buckeye            | 2.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    |                                                   |
| 6      | Aesculus glabra                    | Ohio buckeye            | 2.0      |                  | g         | f  | g  | 1                   |          | Lakeshore Road | 2.00    |                                                   |
| 7      | Picea abies                        | Norway spruce           | 8.0      |                  | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    |                                                   |
| 8      | Picea abies                        | Norway spruce           | 15.0     |                  | g         | g  | g  | 3                   |          | Lakeshore Road | 4.00    |                                                   |
| 9      | Picea glauca                       | white spruce            | 12.0     |                  | g         | g  | g  | 3                   |          | Lakeshore Road | 4.00    |                                                   |
| 10     | Gleditsia triacanthos var. inermis | honey locust            | 59.0     |                  | g         | g  | g  | 4                   |          | Lakeshore Road | 5.00    |                                                   |
| 11     | Gleditsia triacanthos var. inermis | honey locust            | 71.0     |                  | g         | g  | g  | 6                   |          | Lakeshore Road | 7.00    |                                                   |
| 12     | Gleditsia triacanthos var. inermis | honey locust            | 49.0     |                  | g         | g  | g  | 5                   |          | Lakeshore Road | 6.00    |                                                   |
| 13     | Gleditsia triacanthos var. inermis | honey locust            | 65.0     |                  | g         | g  | g  | 5                   |          | Lakeshore Road | 6.00    |                                                   |
| 14     | Gleditsia triacanthos var. inermis | honey locust            | 32.0     |                  | g         | f  | g  | 5                   |          | Lakeshore Road | 6.00    |                                                   |
| 15     | Gleditsia triacanthos var. inermis | honey locust            | 65.0     |                  | g         | g  | g  | 5                   |          | Lakeshore Road | 6.00    |                                                   |
| 16     | Gleditsia triacanthos var. inermis | honey locust            | 43.0     |                  | g         | g  | g  | 4                   |          | Lakeshore Road | 5.00    |                                                   |
| 17     | Sorbus x hybrida                   | oak-leaved mountain ash | 23.0     | 12,12            | f         | g  | g  | 3                   |          | Lakeshore Road | 4.00    | Scars on main trunk                               |
| 18     | Celtis occidentalis                | common hackberry        | 43.0     | 25               | g         | f  | g  | 6                   |          | Lakeshore Road | 7.00    | Low hanging branches                              |
| 19     | Celtis occidentalis                | common hackberry        | 40.0     | 32,22            | g         | f  | g  | 4                   |          | Lakeshore Road | 5.00    | Some trunk fusing in canopy                       |
| 20     | Celtis occidentalis                | common hackberry        | 49.0     |                  | g         | g  | g  | 7                   |          | Lakeshore Road | 8.00    | Measured below flare, low hanging branches        |
| 21     | Celtis occidentalis                | common hackberry        | 35.0     | 23,21,19         | g         | g  | g  | 5                   |          | Lakeshore Road | 6.00    | Low hanging branches                              |
| 22     | Celtis occidentalis                | common hackberry        | 37.0     | 33,30            | g         | g  | g  | 6                   |          | Lakeshore Road | 7.00    | Low hanging branches                              |
| 23     | Celtis occidentalis                | common hackberry        | 32.0     | 31,27,22         | g         | g  | g  | 6                   |          | Lakeshore Road | 7.00    | Low hanging branches                              |
| 24     | Celtis occidentalis                | common hackberry        | 45.0     |                  | f         | g  | g  | 6                   |          | Lakeshore Road | 7.00    | Low hanging branches                              |
| 25     | Celtis occidentalis                | common hackberry        | 50.0     |                  | f         | g  | g  | 6                   |          | Lakeshore Road | 7.00    | Low hanging branches, large wound/cavity on trunk |
| 26     | Quercus robur                      | English oak             | 73.0     |                  | g         | g  | g  | 7                   |          | Lakeshore Road | 8.00    | Low hanging branches                              |
| 27     | Quercus robur                      | English oak             | 39.0     |                  | g         | g  | g  | 6                   |          | Lakeshore Road | 7.00    | Low hanging branches                              |
| 28     | Quercus bicolor                    | swamp white oak         | 35.0     |                  | g         | g  | g  | 4                   |          | Lakeshore Road | 5.00    |                                                   |
| 29     | Liquidambar styraciflua            | Sweet Gum               | 13.0     |                  | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    |                                                   |
| 30     | Acer negundo                       | Manitoba maple          | 10.0     |                  | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    |                                                   |
| 31     | Betula papyrifera                  | white birch             | 20.0     |                  | g         | f  | f  | 3                   |          | Lakeshore Road | 4.00    |                                                   |
| 32     | Quercus bicolor                    | swamp white oak         | 1.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted                                           |
| 33     | Quercus bicolor                    | swamp white oak         | 1.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted                                           |
| 34     | Quercus bicolor                    | swamp white oak         | 1.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted                                           |
| 35     | Quercus bicolor                    | swamp white oak         | 1.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    |                                                   |
| 36     | Quercus bicolor                    | swamp white oak         | 1.0      |                  | g         | f  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted, leader dead                              |
| 37     | Tilia cordata                      | little leaf linden      | 2.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    |                                                   |
| 38     | Tilia cordata                      | little leaf linden      | 2.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    |                                                   |
| 39     | Tilia cordata                      | little leaf linden      | 2.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted                                           |

| Tree # | Scientific Name             | Common Name             | DBH (cm) | Additional Stems | CONDITION |    |    |                     | Location |                | TPZ (m) | COMMENTS                       |
|--------|-----------------------------|-------------------------|----------|------------------|-----------|----|----|---------------------|----------|----------------|---------|--------------------------------|
|        |                             |                         |          |                  | TI        | CS | CV | Radial Dripline (m) | Number   | Street         |         |                                |
| 40     | Ulmus japonica x wilsoniana | Accolade Elm            | 29.0     |                  | g         | g  | g  | 5                   |          | Lakeshore Road | 6.00    |                                |
| 41     | Malus pumila                | apple                   | 48.0     | 35               | f         | f  | g  | 6                   |          | Lakeshore Road | 7.00    | Large crack at base of trunk   |
| 42     | Malus baccata c.v.          | Crabapple               | 28.0     |                  | g         | g  | g  | 3                   |          | Lakeshore Road | 4.00    |                                |
| 43     | Prunus serotina             | black cherry            | 1.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted                        |
| 44     | Prunus serotina             | black cherry            | 1.0      |                  | g         | g  | g  | 1                   |          | Lakeshore Road | 2.00    | Planted                        |
| 45     | Prunus serotina             | black cherry            | 1.0      |                  | g         | g  | f  | 1                   |          | Lakeshore Road | 2.00    | Planted                        |
| 46     | Acer campestre              | hedge maple             | 18.0     |                  | f         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound at base                  |
| 47     | Acer campestre              | hedge maple             | 13.0     |                  | f         | g  | f  | 1                   |          | Veterans Way   | 2.00    | Wound at base, canopy 40% dead |
| 48     | Acer campestre              | hedge maple             | 19.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound on base                  |
| 49     | Acer campestre              | hedge maple             | 13.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound on base                  |
| 50     | Acer campestre              | hedge maple             | 14.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound on base                  |
| 51     | Acer campestre              | hedge maple             | 9.0      |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound on base                  |
| 52     | Acer campestre              | hedge maple             | 12.0     |                  | f         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound at base                  |
| 53     | Acer campestre              | hedge maple             | 10.0     |                  | f         | g  | f  | 2                   |          | Veterans Way   | 3.00    | Wound on base                  |
| 54     | Acer campestre              | hedge maple             | 13.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    |                                |
| 55     | Acer campestre              | hedge maple             | 14.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    |                                |
| 56     | Acer campestre              | hedge maple             | 9.0      |                  | f         | g  | f  | 1                   |          | Veterans Way   | 2.00    | Canopy 30% dead, wound at base |
| 57     | Acer campestre              | hedge maple             | 14.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    |                                |
| 58     | Acer campestre              | hedge maple             | 14.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    |                                |
| 59     | Acer campestre              | hedge maple             | 16.0     |                  | g         | g  | g  | 2                   |          | Veterans Way   | 3.00    |                                |
| 60     | Acer campestre              | hedge maple             | 10.0     |                  | f         | g  | g  | 2                   |          | Veterans Way   | 3.00    | Wound at base                  |
| 61     | Quercus robur               | English oak             | 20.0     |                  | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 62     | Quercus robur               | English oak             | 13.0     | 12,12,12         | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 63     | Quercus robur               | English oak             | 16.0     |                  | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 64     | Quercus robur               | English oak             | 21.0     | 16               | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 65     | Quercus robur               | English oak             | 7.0      |                  | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 66     | Quercus robur               | English oak             | 20.0     |                  | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 67     | Quercus robur               | English oak             | 18.0     | 10               | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 68     | Quercus robur               | English oak             | 16.0     | 13               | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 69     | Quercus robur               | English oak             | 6.0      |                  | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 70     | Quercus robur               | English oak             | 22.0     | 11               | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 71     | Quercus robur               | English oak             | 20.0     | 15,11            | g         | g  | g  | 1                   |          | Veterans Way   | 2.00    | Columnar                       |
| 72     | Juniperus virginiana        | Eastern red cedar       | 22.0     | 19,17,15...      | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    | Hedge, 9 stems                 |
| 73     | Juniperus virginiana        | Eastern red cedar       | 23.0     | 17,15,14,13...   | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    | Hedge, 8 stems                 |
| 74     | Juniperus virginiana        | Eastern red cedar       | 23.0     | 21,19,18,9...    | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    | Hedge, 7 stems                 |
| 75     | Juniperus virginiana        | Eastern red cedar       | 19.0     | 18,18,14,9...    | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    | Hedge, 8 stems                 |
| 76     | Juniperus virginiana        | Eastern red cedar       | 14.0     | 8                | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    |                                |
| 77     | Juniperus virginiana        | Eastern red cedar       | 21.0     | 17,17,8          | g         | g  | g  | 2                   |          | Lakeshore Road | 3.00    |                                |
| 78     | Quercus bicolor             | swamp white oak         | 1.0      |                  | g         | f  | f  | 1                   |          | Lakeshore Road | 2.00    | Dead stem, epicormic, planted  |
| 79     | Sorbus x hybrida            | oak-leaved mountain ash | 67.0     |                  | f         | f  | g  | 5                   |          | Lakeshore Road | 6.00    | Wounds on trunk                |
| 80     | Acer saccharinum            | silver maple            | 87.0     |                  | g         | g  | g  | 7                   |          | Lakeshore Road | 8.00    |                                |



# **APPENDIX C: STAGE 1 ARCHAEOLOGICAL ASSESSMENT (PREPARED BY GOLDER)**

**ORIGINAL REPORT**

## Stage 1 Archaeological Assessment

*Catherine Street and Lakeshore Road Sewage Pumping Stations Schedule "B"  
Municipal Class Environmental Assessment, Part of Lot 4, Concession 1 Niagara  
River and the Government Reserve, Former Township of Bertie, County of  
Welland, now the Town of Fort Erie, Regional Municipality of Niagara, Ontario*

**Licensee: Rhiannon Fisher (P468), MSc, RPA**

**PIF Number: P468-0082-2021**

Submitted to:

**Regional Municipality of Niagara**

Stephanie McGill, Project Manager  
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L2V 4T7

Submitted by:

**Golder Associates Ltd.**

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4 April 2022

## Distribution List

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## Executive Summary

*The Executive Summary highlights key points from the report only, for complete information and findings as well as limitations, the reader should examine the complete report.*

Golder Associates Ltd. (Golder) was retained by the Regional Municipality of Niagara (Niagara Region) to undertake a Stage 1 archaeological assessment to support a Schedule “B” Municipal Class Environmental Assessment (EA) to assess alternative solutions for the Catherine Street and Lakeshore Road Sewage Pumping Stations (SPS) in the Town of Fort Erie, Niagara Region, Ontario (the Project).

The Catherine Street SPS was constructed in 1981 and is located at 8 Catherine Street. Due to the station's age and the condition of the existing infrastructure, the Niagara Region proposes to complete mechanical and electrical/ programming upgrades as well as any associated upgrades to the civil and linear infrastructure works. The Lakeshore Road SPS was constructed in 1984 and is located at 14A Lakeshore Road. Due to the station's age, deteriorating condition and 2041 population estimates, the Niagara Region proposes to complete mechanical, electrical/ programming and civil works upgrades as well as the replacement of the station's 200 millimetre (mm) forcemain.

For the purpose of this Stage 1 archaeological assessment, the “study area” is comprised of the current Catherine Street SPS property (i.e., the existing lot at 8 Catherine Street, plus the adjacent vacant lot owned by the Niagara Region equalling approximately 0.17 hectares [ha] combined) and the current Lakeshore Road SPS property (i.e., the existing lot at 14A Lakeshore Road, plus the adjacent forcemain replacement boundary/ easement equalling approximately 1 ha combined) (Map 1). The study area is located within part of Lot 4, Concession 1 Niagara River, as well as part of the Government Reserve, both in the Geographic Township of Bertie, former County of Welland, now the Town of Fort Erie, Niagara Region.

Background research determined the study area has archaeological potential for the recovery of both Indigenous and Euro-Canadian archaeological resources. This determination was based on the proximity of previously registered archaeological sites, particularly the Peace Bridge Site/ Sensitivity Zone, as well as water sources, soil types, historical settlements, historical transportation routes, and the Town of Fort Erie's *Official Plan* archaeological potential mapping.

Based on these findings, the following recommendations are presented:

- 1) Portions of the study area that were observed during the Stage 1 property inspection to be extensively and deeply disturbed are determined to have low archaeological potential and are recommended to be exempt from further assessment (i.e., green areas on Map 6).
- 2) Portions of the study area that were observed during the Stage 1 property inspection to be dirt/ gravel surfaces or paved asphalt surfaces adjacent to (i.e., within 50 m) of registered archaeological site AfGr-99 could not be confirmed to be extensively or deeply disturbed and thus still retain archaeological potential. As such, these portions are recommended to be subject to Stage 2 mechanical trenching in accordance with Section 2.1.7 of the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists* (MHSTCI 2011) (i.e., orange areas on Map 6).

- 3) Portions of the study area that were observed during the Stage 1 property inspection to be paved asphalt surfaces within 300 m of the overall Peace Bride Site (AfGr-1; 2; 7 and 9) boundaries/ Sensitivity Zone could not be confirmed to be extensively or deeply disturbed and thus still retain archaeological potential. As such, these portions are recommended to be subject to Stage 2 construction monitoring in accordance with Section 2.1.7 of the MHSTCI 2011 (i.e., blue areas on Map 6).
- 4) Portions of the study area that were observed during the Stage 1 property inspection to be grassed or treed surfaces, landscaped gardens, and manicured lawns are determined to have archaeological potential and are recommended to be subject to Stage 2 archaeological assessment by means of shovel test pit survey at 5 m intervals in accordance with Section 2.1.2 of the MHSTCI 2011 (i.e., pink areas on Map 6).

The MHSTCI is requested to review, and provide a letter indicating their satisfaction with the results and recommendations presented herein, with regard to the 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.

## Study Limitations

Golder has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied, is made.

This report has been prepared for the specific site, design objective, developments, and purpose described to Golder by Niagara Region (the Client). The factual data, interpretations, and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations, and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the Client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings, and other documents as well as electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client cannot rely upon the electronic media versions of Golder's report or other work products.

Unless otherwise stated, the suggestions, recommendations, and opinions given in this report are intended only for the guidance of the Client in the design of the specific project.

Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study, if any, comply with those identified in the Ministry of Heritage, Sport, Tourism, Culture Industries' 2011 *Standards and Guidelines for Consultant Archaeologists*.



## Personnel

|                               |                                                 |
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| <b>Project Director</b>       | Michael Teal (P364), MA, Senior Archaeologist   |
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| <b>Field Inspection</b>       | Alisha Mohamed (R1149), MA, Archaeologist       |
| <b>Report Production</b>      | Alisha Mohamed                                  |
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| <b>Administrative Support</b> | Courtney Adey                                   |

## Acknowledgements

|                  |                                                                                     |
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## 1.0 PROJECT CONTEXT

### 1.1 Development Context

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This Stage 1 archaeological assessment was conducted under the professional archaeological consulting licence of Rhiannon Fisher (P468).

### 1.2 Objectives

The objectives of a Stage 1 archaeological assessment, as outlined by the 2011 *Standards and Guidelines for Consultant Archaeologists* published by the *Ministry of Heritage, Sport, Tourism and Culture Industries* (MHSTCI 2011), are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork and current land condition.
- To evaluate in detail the study area's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property, if needed.
- To recommend appropriate strategies for Stage 2 archaeological survey, if needed.

## 2.0 HISTORICAL CONTEXT

To establish the historical context of the study area, a review of Indigenous and Euro-Canadian settlement history was undertaken. This information is presented below in chronological order.

### 2.1 Pre-Contact Indigenous Period

The general culture history of the Indigenous pre-contact period of southern Ontario, based on Ellis and Ferris (1990), is summarised in Table 1.

**Table 1: Overview of Pre-contact Cultural Chronology of Southern Ontario**

| Period  |        | Time Range Before Present Date (BP)* | Characteristics                                                                                                                                                                                                                              |
|---------|--------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paleo   | Early  | 10,950 – 10,350 BP                   | Gainey, Barnes and Crowfield traditions; small bands; mobile hunters and gatherers; utilization of seasonal resources and large territories; fluted projectiles                                                                              |
|         | Late   | 10,350 – 9,950 BP                    | Holcombe, Hi-Lo and Lanceolate biface traditions; continuing mobility; campsite/way-station sites; smaller territories are utilized; non-fluted projectiles                                                                                  |
| Archaic | Early  | 9,950 – 7,950 BP                     | Side-notched, Corner-notched (e.g., Nettling, Thebes) and Bifurcate Base traditions; growing diversity of stone tool types; heavy woodworking tools appear (e.g., ground stone axes and chisels)                                             |
|         | Middle | 7,950 – 4,450 BP                     | Stemmed (e.g., Kirk, Stanly/Neville), Brewerton side- and corner-notched traditions; reliance on local resources; populations increasing; more ritual activities; fully ground and polished tools; net-sinkers common; earliest copper tools |
|         | Late   | 4,450 – 2,900 BP                     | Narrow Point (e.g., Lamoka), Broad Point (e.g., Genesee) and Small Point (e.g., Crawford Knoll) traditions; less mobility; use of fish-weirs; formal cemeteries appear; stone pipes emerge; long-distance trade (marine shells and galena)   |



| Period   |              | Time Range Before Present Date (BP)* | Characteristics                                                                                                                                                                                                                                        |
|----------|--------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Woodland | Early        | 2,900 – 2,350 BP                     | Meadowood tradition; cord-roughened ceramics emerge; Meadowood cache blades and side-notched points; bands of up to 35 people                                                                                                                          |
|          | Middle       | 2,350 – 1,400 BP                     | Saugeen tradition; stamped ceramics appear; Saugeen projectile points; cobble spall scrapers; Seasonal settlements and resource utilization; post holes, hearths, middens, cemeteries and rectangular structures identified                            |
|          | Transitional | 1,400 – 1,050 BP                     | Princess Point tradition; cord roughening, impressed lines, and punctate designs on pottery; adoption of maize horticulture at the western end of Lake Ontario; oval houses and 'incipient' longhouses; first palisades; villages with up to 75 people |
|          | Late         | 1,050 – 650 BP (early Late)          | Glen Meyer tradition; settled village-life based on agriculture; small villages (0.4 ha) with 75–200 people and 4–5 longhouses; semi-permanent settlements                                                                                             |
|          |              | 650 – 550 BP (middle Late)           | Uren and Middleport traditions; classic longhouses emerge; larger villages (1.2 ha) with up to 600 people; more permanent settlements (30 years)                                                                                                       |
|          |              | 550 – 350 BP (late Late)             | larger villages (1.7 ha); examples up to 5 ha with 2,500 people; extensive croplands; Also hamlets, cabins, camps and cemeteries; potential tribal units; fur trade begins ca. 1580 CE (Common Era); European trade goods appear                       |

\* (BP) Before Present Era dates are calculated using the year 1950 as the recognized start date of the present era.

### 2.1.1 Paleo Period

Occupation of southern Ontario became possible just after the end of the Wisconsin Glacial Period. Although there were a complex series of ice retreats and advances which played a large role in shaping the local topography, this portion of Ontario was finally ice free by 12,500 years ago. The first human settlement can be traced back 11,000 years, when this area was settled by Indigenous groups that had been living south of the Great Lakes. The period of these early Indigenous inhabitants is known as the Paleo Period (Ellis and Deller 1990). The Paleo period marks the beginning of human settlement in southern Ontario. It is characterized by small bands of nomadic hunter-gatherers who largely depended on the communal hunting of big game such as caribou, and possible mammoth and/or mastodon. This early period of occupation is divided into early and late phases, which span from ca. 10,950 – 9,950 BP (Ellis and Deller 1990) and from ca. 10,350 -9,950 BP (Jackson 2004), respectively.

Our current understanding of settlement patterns of Early Paleo peoples suggests that small bands, consisting of probably no more than 25-35 individuals, followed a pattern of seasonal mobility extending over large territories (Ellis and Deller 1990). Early Paleo sites tend to be located in elevated locations on well-drained loamy soils. Many of the known sites were located on former beach ridges associated with glacial lakes. There are a few extremely large Early Paleo sites, such as one located close to Parkhill, Ontario, which covered as much as six hectares. It appears that these sites were formed when the same general locations were occupied for short periods of time over the course of many years. Given their placement in locations conducive to the interception of migratory mammals such as caribou, it has been suggested that they may represent communal hunting camps. There are also smaller Early Paleo camps scattered throughout the interior of southwestern and south-central Ontario, usually situated adjacent to wetlands.

The most recent research suggests that population densities were very low during the Early Paleo Period (Ellis and Deller 1990: 54). Archaeological examples of Early Paleo sites are rare.

The Late Paleo Period (10,350 – 9,950 BP / 8,400 – 8000 BCE) has been less researched and is consequently more poorly understood. By this time the environment of south-central Ontario was coming to be dominated by closed coniferous forests with some minor deciduous elements. It seems that many of the large game species that had been hunted in the early part of the Paleo Period had either moved further north, or as in the case of the mastodons and mammoths, become extinct.

Like the Early Paleo peoples, Late Paleo peoples covered large territories as they moved about in response to seasonal resource fluctuations. On a province-wide basis, Late Paleo projectile points are far more common than Early Paleo materials, suggesting a relative increase in population.

The end of the Late Paleo Period was heralded by numerous technological and cultural innovations that appeared throughout the Archaic Period. These innovations may be best explained in relation to the dynamic nature of the post-glacial environment and region-wide population increases.

### 2.1.2 Archaic Period

During the Early Archaic Period (9,950 – 7,950 BP / 8000 – 6000 BCE), the jack and red pine forests that characterized the Late Paleo environment were replaced by forests dominated by white pine with some associated deciduous trees (Ellis et al. 1990: 68-69). One of the more notable changes in the Early Archaic Period is the appearance of side and corner-notched projectile points.

Other significant innovations include the introduction of ground stone tools such as celts and axes, suggesting the beginnings of a simple woodworking industry. The presence of these often large and not easily portable tools suggests there may have been some reduction in the degree of seasonal movement, although it is still suspected that population densities were quite low, and band territories large.

During the Middle Archaic Period (7,950 – 4,450 BP / 6000 – 2500 BCE), the trend to more diverse toolkits continued, as the presence of net-sinkers suggest that fishing was becoming an important aspect of the subsistence economy. It was also at this time that "bannerstones" were first manufactured.

Bannerstones are carefully crafted ground stone devices that served as a counterbalance for *atlatls* or spear-throwers. Another characteristic of the Middle Archaic Period is an increased reliance on local, often poorer quality, chert resources for the manufacturing of projectile points and other stone tools. It seems that during earlier periods, when groups occupied large territories, it was possible for them to visit a primary outcrop of high-quality chert at least once during their seasonal round. However, during the Middle Archaic Period, groups inhabited smaller territories that often did not encompass a source of high-quality raw material. In these instances, lower quality materials which had been deposited by the glaciers in the local till and river gravels were utilized.

This reduction in territory size was probably the result of gradual region-wide population growth which led to the infilling of the landscape. This process forced a reorganization of Indigenous subsistence practices, as more people had to be supported from the resources of a smaller area. During the latter part of the Middle Archaic Period, technological innovations such as fish weirs have been documented as well as stone tools especially designed for the preparation of wild plant foods.

It is also during the latter part of the Middle Archaic Period that long distance trade routes began to develop, spanning the northeastern part of the continent. In particular, indigenous copper tools manufactured from a source located northwest of Lake Superior were being widely traded (Ellis et al. 1990: 66). By 5,450 BP (3500 BCE) the local environment had stabilized and began to reflect the more modern landscape (Ellis et al. 1990: 69).

During the Late Archaic Period (4,450 – 2,900 BP / 2500 – 950 BCE), the trend towards decreased territory size and a broadening subsistence strategy continued. Late Archaic sites are far more numerous than either Early or Middle Archaic sites, and it seems that the local population had expanded. It is during the Late Archaic Period that the more formal cemeteries appear. The appearance of cemeteries during the Late Archaic Period has been interpreted as a response to increased population densities and competition between local groups for access to resources. It is argued that cemeteries would have provided strong symbolic claims over a local territory and its resources. These cemeteries are often located on heights of well-drained sandy/gravel soils adjacent to major watercourses.

This suggestion of increased territoriality is also consistent with the regionalized variation present in Late Archaic Period projectile point styles. It was during the Late Archaic Period that distinct local styles of projectile points appear. Also, it was during the Late Archaic Period that trade networks which had been established during the Middle Archaic Period continued to flourish. Indigenous copper from northern Ontario and marine shell artifacts from as far away as the Mid-Atlantic coast are frequently encountered as grave goods at Southern Ontario sites. Other artifacts such as polished stone pipes and banded slate gorgets also appear on Late Archaic sites in Southern Ontario. One of the more unusual and interesting of the Late Archaic Period artifacts is the birdstone, which are small, bird-like effigies usually manufactured from green banded slate.

### 2.1.3 Woodland Period

The Early Woodland Period dates between 2,900 – 2,350 BP (950 – 400 Before Common Era [BCE]), is distinguished from the Late Archaic Period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were thick walled and often friable when recovered from the archaeological record. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil. These vessels were not easily portable, and individual pots likely did not have a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that pottery vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of this limited ceramic technology, the lifeways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic Period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads.

Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic Period continue in use. However, the Early Woodland Period variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance.



The trade networks which were established in the Middle and Late Archaic Periods also continued to function, although there does not appear to have been as much trade in marine shell during the Early Woodland Period. During the last 200 years of the Early Woodland Period, projectile points manufactured from high quality raw materials from the American Midwest begin to appear on sites in southwestern Ontario.

In terms of settlement and subsistence patterns, the Middle Woodland Period between 2,350 – 1,400 BP (400 B.C. – 500 CE) provides a major point of departure from the Archaic and Early Woodland Periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet.

In addition, Middle Woodland peoples relied much more extensively on ceramic technology. Middle Woodland vessels are often heavily decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland Period that rich, densely occupied sites appear along the margins of major rivers and lakes. While these areas had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was occupied off and on for as long as several hundred years and large deposits of artifacts often accumulated. Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on over the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from at least Middle Archaic times and provides a prelude to the developments that follow during the Late Woodland Period.

The Late Woodland began with a shift in settlement and subsistence patterns involving an increasing reliance on corn horticulture (Fox 1990: 185; Smith 1990; Williamson 1990: 312). Corn may have been introduced into southwestern Ontario from the American Midwest as early as 1,300 BP (600 CE) or a few centuries before. Corn did not become a dietary staple, however, until at least three to four hundred years later, when the cultivation of corn gradually spread into south-central and southeastern Ontario.

During the early Late Woodland Period, particularly within the Princess Point Complex circa 1,450 -900 BP (500-1050 CE), a number of archaeological material changes have been noted including the appearance of triangular projectile point styles, first seen during this period beginning with the Levanna form; cord-wrapped stick decorated ceramics using the paddle and anvil forming technique evolving from the mainly coil-manufactured and dentate stamped and pseudo-scallop shell impressed ceramics; and if not appearance, increasing use of maize (*Zea mays*) as a food source (e.g., Crawford et al. 1997; Ferris and Spence 1995: 103; Spence et al. 1990; Williamson 1990: 299).

The Late Woodland Period is widely accepted as the beginning of agricultural life ways in south-central Ontario. Researchers have suggested that a warming trend during this time may have encouraged the spread of maize into southern Ontario, providing a greater number of frost-free days (Stothers and Yarnell 1977). Further, shifts in the location of sites have also been identified with an emphasis on riverine, lacustrine and wetland occupations set against a more diffuse use of the landscape during the Middle Woodland (Dieterman 2001).

One such site, located on the Grand River near Cayuga, Ontario is the Grand Banks site (AfGx-3). As of 1997, 40 maize kernels and 29 cupules had been recovered at this site (Crawford et al. 1997). The earliest AMS radiocarbon assay run on maize from paleosol II produced a date of approximately 1,450 BP (500 CE) (Crawford

et al. 1997: 116). This site is interpreted as a long-term basecamp that may have been used year-round or nearly year-round. This growing sedentism is seen as a departure from Middle Woodland hunting and gathering and may reflect growing investment in the care of garden plots of maize (Smith 1997: 15). The riverine location of Grand Banks (AfGx-3) may have also provided light, nutrient-rich soil for agriculture (Crawford et al. 1997). While Levanna projectile points are formal tools, Princess Point Complex toolkits are predominantly characterized by informal or expedient flake tools and ground stone and bone artifacts are rare (Ferris and Spence 1995: 103). At Grand Banks, experimental archaeology suggests that chert flakes were put to a variety of useful tasks, from butchering to bone-working to wood-working to plant-working. Formal bifaces and projectile points had less evidence of use-wear. Local cherts appear to have been used, although Onondaga, albeit also a local resource, was preferred at Grand Banks (AfGx-3).

The first agricultural villages in southern Ontario date to the 10th century CE. Unlike the riverine base camps of the Middle Woodland Period, these sites are located in the uplands, on well-drained sandy soils. Categorized as early Late Woodland (1,050 – 650 BP / 900 – 1300 CE), many archaeologists believe that it is possible to trace a direct line from the Iroquoian groups which later inhabited southern Ontario at the time of first European contact, back to these early villagers.

Village sites dating between 1,050 – 650 BP (900 and 1300 CE), share many attributes with the historically reported Iroquoian sites, including the presence of longhouses and sometimes palisades. However, these early longhouses were actually not all that large, averaging only 12.4 metres (m) in length (Dodd et al. 1990: 349; Williamson 1990: 304-305). It is also quite common to find the outlines of overlapping house structures, suggesting that these villages were occupied long enough to necessitate re-building.

The Jesuits reported that the Huron moved their villages once every 10 – 15 years, when the nearby soils had been depleted by farming and conveniently collected firewood grew scarce (Pearce 2010). It seems likely that villages were occupied for considerably longer during the early Late Woodland Period, as they relied less heavily on corn than did later groups, and their villages were much smaller, placing less demand on nearby resources.

Judging by the presence of carbonized corn kernels and cob fragments recovered from sub-floor storage pits, agriculture was becoming a vital part of the early Late Woodland economy. However, it had not reached the level of importance it would in the middle and late Late Woodland Periods. There is ample evidence to suggest that more traditional resources continued to be exploited and comprised a large part of the subsistence economy. Seasonally occupied special purpose sites relating to deer procurement, nut collection, and fishing activities, have all been identified. While beans are known to have been cultivated later in the Late Woodland Period, they have yet to be identified on early Late Woodland sites.

The middle Late Woodland Period has a date range of 650 – 550 BP (1300 – 1400 CE) and witnessed several interesting developments in terms of settlement patterns and artifact assemblages. Changes in ceramic styles have been carefully documented, allowing the placement of sites in the first or second half of this 100-year period. Moreover, villages, which averaged approximately 0.6 hectares in extent during the early Late Woodland Period, now consistently range between one and two hectares in size.

House lengths also change dramatically, more than doubling to an average of 30 m, while houses of up to 45 m have been documented. This increase in longhouse length has been variously interpreted. The simplest possibility is that increased house length is the result of a gradual, natural increase in population (Dodd et al. 1990: 323;350;357; Smith 1990). However, this does not account for the sudden shift in longhouse lengths around 650 BP (1300 CE). Other possible explanations involve changes in economic and socio-political organization (Dodd et al. 1990: 357). One suggestion is that during the middle Late Woodland Period small villages were

amalgamating to form larger communities for mutual defence (Dodd et al. 1990: 357). If this was the case, the more successful military leaders may have been able to absorb some of the smaller family groups into their households, thereby requiring longer structures. This hypothesis draws support from the fact that some sites had up to seven rows of palisades, indicating at least an occasional need for strong defensive measures. There are, however, other middle Late Woodland villages which had no palisades present (Dodd et al. 1990). More research is required to evaluate these competing interpretations.

The lay-out of houses within villages also changes dramatically by 650 years ago. During the early Late Woodland Period villages were haphazardly planned, with houses oriented in various directions. During the middle Late Woodland Period villages are organized into two or more discrete groups of tightly spaced, parallel aligned, longhouses. It has been suggested that this change in village organization may indicate the initial development of the clans which were a characteristic of the historically known Iroquoian peoples (Dodd et al. 1990: 358).

Initially at least, the late Late Woodland Period (550 – 350 BP / 1400-1650 CE) continues many of the trends which have been documented for the proceeding century. For instance, between 550 and 500 years ago (1400 and 1450 CE) house lengths continue to grow, reaching an average length of 62 m. One longhouse excavated on a site southwest of Kitchener was an incredible 123 m (Lennox and Fitzgerald 1990: 444-445). After this time house lengths begin to decrease, with houses dating between 450 – 370 BP (1500 and 1580 CE) averaging 30 m in length.

Why house lengths started to decrease roughly 450 years ago is poorly understood, although it is believed that the even shorter houses witnessed on Historical Period sites can be at least partially attributed to the population reductions associated with the introduction of European diseases such as smallpox (Lennox and Fitzgerald 1990: 405;410).

Village size also continues to expand throughout the late Late Woodland Period, with many of the larger villages showing signs of periodic expansions. The end of the middle Late Woodland Period and the first century of the late Late Woodland Period was a time of village amalgamation. One large village situated just north of Toronto has been shown to have expanded on no fewer than five occasions. These large villages were often heavily defended with numerous rows of wooden palisades, suggesting that defence may have been one of the rationales for smaller groups banding together. Late Late Woodland Period village expansion has been clearly documented at several sites throughout southwestern and south-central Ontario. The excavations at the Lawson site, a large late Late Woodland village located in southwestern Ontario, has shown that the original village was expanded by at least twenty percent to accommodate the construction of nine additional longhouses.

During the late 1600s and early 1700s, the French explorers and missionaries reported a large population of Iroquoian peoples clustered around the western end of Lake Ontario. The area which was later to become Halton Region was known to have been occupied by ancestors of two different late Late Woodland groups who evolved to become the historically known Neutral and Huron. For this reason the late Late Woodland groups which occupied parts of southern Ontario prior to the arrival of the French are often identified as "Prehistoric Neutral" and "Prehistoric Huron" (Lennox and Fitzgerald 1990; Smith 1990: 283).

## 2.2 Contact Indigenous Period

The Huron-Wendat and Haudenosaunee called those within the territory of the Niagara Peninsula the 'Attiewandaron' (also spelled Attiwondaronks and Atiquandaronk) (Brown 2009: 26). According to Samuel de Champlain, who first referred to the Attiewandaron as *la Nation neutre*, the Attiewandaron inhabited forty villages and could field 4,000 warriors (Jury 1974: 04; White 1978: 410; Warrick 2008: 80). It is speculated that prior to the great epidemics of the 1630s, the Attiewandaron Confederacy numbered approximately 35,000 to 40,000 individuals (White 1978: 409; Warrick 2008: 86).



Their territory at the western end of Lake Ontario and along the north shore of Lake Erie was favourably located for easy trade with the Erie, Haudenosaunee, Tionnontaté, and Huron-Wendat (Trigger 1994: 47). The interior lands occupied by the Attiewandaron contained rapidly running streams, large rivers, and portage routes. A significant trail beginning at Lake Simcoe, following the Nottawasaga River to the Pine River to the source of the Irvine River and into the Grand River and banks of Lake Erie, formed an Indigenous portage route favoured for travel and trade between Huron-Wendat and Attiewandaron territorial lands (Bricker 1934: 58).

There are limited records documenting European contact with the Attiewandaron. In 1626, Reverend Father Joseph de la Roche D'aillon, a Récollet (or Recollect) missionary, journeyed from the Huron-Wendat to the Attiewandaron under the pretense of trade, and spent months studying the Attiewandaron language in an attempt to instruct them in the principals of Christian religion (Jury 1974: 03; White 1978: 409; Gingras 2000). However, the Huron-Wendat guarded their trade advantage and travelled from village to village, warning the Attiewandaron of "misfortune and ruin if they received the French in their midst" (Jury 1974: 20). This action caused the dismissal of Father D'aillon from the Attiewandaron and no direct trade relationship was ever formed between the French and Attiewandaron (White 1978: 407). In the winter of 1640-41, Jesuit Missionaries stayed in ten Attiewandaron villages and produced a map of the Attiewandaron territory, but it has not survived (Jury 1974: 04; White 1978: 407; Brown 2009: 27).

By 1645, having grown dependent on European goods and with their territory no longer yielding enough animal pelts, the Haudenosaunee became increasingly aggressive towards the Huron-Wendat Confederacy (Trigger 1994: 53). From 1649 to 1650, the Haudenosaunee engaged in warfare with the Huron-Wendat Confederacy, destroying several Huron-Wendat villages throughout Southern Ontario (Trigger 1994: 53). The small groups that remained of the Huron-Wendat Confederacy became widely dispersed throughout the Great Lakes region, ultimately resettling in Quebec (Schmalz 1991: 17). Many Huron-Wendat groups sought refuge and protection within the Attiewandaron, until the Haudenosaunee attacked in the 1650s (Trigger 1994: 56; Warrick 2008: 208). Many were captured and incorporated into the Haudenosaunee or sought refuge within other tribes (Lennox and Fitzgerald 1990: 410; Trigger 1994: 57).

The last mention of the Attiewandaron in French writing was in 1671 (Noble 2012). After the 1649-50 warfare, and "for the next forty years, the Haudenosaunee used present-day Ontario to secure furs with the Dutch, then with the English" (Coyne 1895: 20; Schmalz 1991: 17; Smith 2013: 19).

Although their homeland was located south of the lower Great Lakes, the Haudenosaunee controlled most of southern Ontario after the 1660s, occupying at "least half a dozen villages along the north shore of Lake Ontario and into the interior" (Schmalz 1991: 17; Williamson 2013: 60). The Haudenosaunee established "settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. Their settlements were on canoe-and-portage routes that linked Lake Ontario to Georgian Bay and the upper Great Lakes" (Williamson 2013: 60). The Haudenosaunee had established a village at the Rouge River, the Humber River, and at the Niagara River (Robinson 1965: 15-16; Schmalz 1991: 29).

At this time, several Algonquin-speaking linguistic and cultural groups within the Anishinaabeg (or Anishinaabe) began to challenge the Haudenosaunee in the region (Johnston 2004: 9-10; Gibson 2006: 36). The Anishinaabeg were originally located primarily in northern Ontario. Before contact with the Europeans, the Ojibwa territorial homeland was situated inland from the north shore of Lake Huron (MNCFN n.d.: 03). The English referred to those Algonquin-speaking linguistic and cultural groups that settled in the area bounded by Lakes Ontario, Erie, and Huron as Chippewas or Ojibwas (Smith 2002: 107). In 1640, the Jesuit fathers had recorded the name "*oumisagai*, or Mississaugas, as the name of an Algonquin group near the Mississagi River on the northwestern shore of Lake Huron. The French and later English applied this same designation to all Algonquian [-speaking

groups] settling on the north shore of Lake Ontario” (Smith 2002: 107; Smith 2013: 19-20). “The term ‘Mississauga’ perplexed the Algonquins, or Ojibwas, on the north shore of Lake Ontario, who knew themselves as the Anishinaabeg” (Smith 2013: 20).

Following a major smallpox epidemic, combined with the capture of New Netherland by the English, access to guns and powder became increasingly restricted for the Haudenosaunee. After a series of successful attacks against the Haudenosaunee by groups within the Anishinaabeg, the Haudenosaunee dominance in the region began to fail. By the 1690s, Haudenosaunee settlements along the northern shores of Lake Ontario were abandoned, and in 1701, the Haudenosaunee were defeated. After these battles, the Anishinaabeg replaced the Haudenosaunee in Southern Ontario (Coyne 1895: 28; Schmalz 1991: 20;27;29; Gibson 2006: 37; Warrick 2008: 242; Williamson 2013: 60).

In 1701, representatives of several groups within the Anishinaabeg and the Haudenosaunee, collectively known as the First Nations, assembled in Montreal to participate in Great Peace negotiations, sponsored by the French (Johnston 2004: 10). The Mississaugas were granted possession of the territory along and extending northward of Lake Ontario and Lake Erie (Hathaway 1930: 433). The Seneca, a group within the Haudenosaunee, had settled along the eastern banks of the Niagara River at Fort Niagara, a French fort, at the mouth of the Niagara River (Abler and Tooker 1978: 506; Surtees 1994: 96). From 1701 to the fall of New France in 1759, the Anishinaabeg experienced a “golden age” of trade, holding no conclusive alliance with either the British or the French while maintaining their middle-man position between Indigenous groups to the north and in southwestern Ontario (Schmalz 1991: 35). Mississauga subsistence patterns include a primary focus on hunting, fishing and gathering with little emphasis on agriculture. Temporary and moveable house structures were utilized which were easy to construct and disassemble, allowing swift travel throughout their territory. Consequently, little archaeological material was left behind.

The Seven Years War brought warfare between the French and British in North America. In 1763, the Royal Proclamation declared the Seven Years War over, giving the British control of New France. The British did not earn the respect of the Anishinaabeg or the Haudenosaunee, as the British did not honour fair trade or the land as the French had. Consequently, the Pontiac Uprising, also known as the Beaver Wars, began that same year (Schmalz 1991: 70; Johnston 2004: 13-14). This uprising involved groups both within the Haudenosaunee and the Anishinaabeg. The Seneca remained pro-French and supported the Pontiac Uprising (Abler and Tooker 1978: 507; Surtees 1994: 96). The Seneca utilized the Niagara River as an advantage against the British. During an ambush at Devil’s Hole, a trail between Fort Schlosser at the top of the falls and Fort Niagara, over 70 British soldiers were killed (Abler and Tooker 1978: 507; Surtees 1994: 96). The Seneca eventually made peace with the British and the Seneca surrendered a tract of land six and a half kilometres (km) in depth on the east side of the Niagara River and three km deep on the west side of the Niagara River along the full length of the river (Surtees 1994: 97). This surrender secured a navigable route for the British and punished the Seneca for their support of the French during the Seven Years’ War and for the Devil’s Hole massacre (Surtees 1994: 97).

During the American Revolutionary War, the Haudenosaunee were divided in their support of the British and their support of the Americans. The Mohawk, Onondaga, Cayuga and Seneca supported the British and many fled from their territorial homelands south of Lake Ontario to the Niagara Peninsula and remained there until the Treaty of Paris was signed in 1784 (Tooker 1978: 435). However, the Treaty made no provisions for the Indigenous, and “consequently, the [divided Iroquois] had to treat each government separately. This meant that as individuals the [Haudenosaunee] had to decide where they should go live and with which country they wished to enter into a treaty agreement with” (Tooker 1978: 435). Fort Niagara remained in the control of the British, under the command of John Butler from 1777 to 1784. The Haudenosaunee who had sought refuge at Fort Niagara placed enormous strain on the fort’s resources and these individuals were ultimately relocated to the Grand River Valley (Surtees 1994: 97-101).

## 2.3 Post-Contact Indigenous Period

The historical Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking peoples by the New York State Iroquois, and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17<sup>th</sup> century and beginning of the 18<sup>th</sup> century (Schmalz 1991).

Following the introduction of Europeans to North America, the nature of Indigenous settlement size, population distribution, and material culture shifted as settlers began to colonize the land. Despite this shift in life ways, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought” (Ferris 2009: 114). As a result, Indigenous peoples throughout southern Ontario have left behind archaeologically significant resources which show continuity with past peoples. Many of these archaeological sites are not recorded in historical Euro-Canadian documentation.

The study area is part of a large swath of land that made up the 19 July 1701 Deed, or Nanfan Treaty, between the Five Nations of the Iroquois Confederacy and John Nanfan, on behalf of the British Crown. The treaty ceded a large area of the Five Nations’ beaver hunting grounds to the Crown. This area included portions of southern Ontario and the Midwestern United States; France did not recognize this Deed/ Treaty. The treaty was later amended to identify a strip of land 60 miles wide near Lake Erie and Lake Ontario and for Six Nations occupation and use.

Following the Nanfan Treaty, the study area is also recorded as part of Treaty Number 381, known as the “Niagara purchase”, made between the Mississaugas, Chippewas and the Crown on 09 May 1781. As described in the below excerpt, the Niagara purchase:

*...was made in the year 1764 at Fort Niagara from the Iroquois and Chippewa Indians, but it was not until May 9th, 1781 that a treaty was signed with the Mississa[ug]as and Chippewas for a strip of land four miles in width along the western bank of the Niagara River. This strip comprises the greater parts of the Townships of Lincoln, Stamford, Willoughby and Bertie.*

(Morris 1943: 15)

The Niagara Purchase was instigated by Sir William Johnson, the first official representative of the Indian Department in British North America, and later completed by Colonel Guy Johnson, the acting superintendent general of Indian Affairs.

## 2.4 Euro-Canadian Settlement Period

### 2.4.1 County of Welland and Township of Bertie

In the late 18<sup>th</sup> century, the present area of southern Ontario - which had formed part of the old Province of Quebec - was divided into four political districts: Lunenburg, Mechlenburg, Nassau and Hesse. These became part of the Province of Upper Canada (present-day Ontario) in 1791, and were renamed the Eastern, Midland, Home, and Western Districts, respectively. The study area was situated within the former Home District, which originally included all lands between an arbitrary line on the west running from Long Point on Lake Erie to Georgian Bay, and a line on the east running north from Presqu’ile Point on Lake Ontario to the Ottawa River. The Home district was further subdivided into counties and townships by Colonel John Grave Simcoe, the first Lieutenant Governor of Upper Canada. Following this division, the study area was situated in the County of Welland and the Township of Bertie.



During the American Revolutionary War, in the late 1700s, a large number of United Empire Loyalists, who were granted land for staying loyal to the British crown, began to move into the Niagara Peninsula, putting greater demand on the quantity of available lands for settlement within what would become Welland County (Brown 2009: 33). These land grants were very liberal, where “field officers being allowed to select 5,000 acres, captains 3,000 acres, subalterns 2,000 acres and privates 200 acres” (Murphy 1887: 87-88; Michael 1967: 11). By 1784, about 40 families had settled on the territory now comprising the County of Welland (Murphy 1887: 88).

The Township of Bertie was also settled in 1784 by the United Empire Loyalists, as well as settlers from other North American colonies and by population movements during the War of 1812. In 1791, the township was situated within the recently established County of Lincoln, however, once Lincoln County was divided in 1845, the township was placed within the newly created County of Welland. Bertie Township contained several schools, churches belonging to various religious denominations and well cultivated farms (Page & Co. 1876:xiii). Several villages are located within Bertie Township, including Stevensville, Ridgeway, Victoria, and Fort Erie. Fort Erie was one of the first areas of the township to be settled, and by 1876, approximately 1,200 inhabitants were found in the incorporated town, with access to the Grand Trunk Railway (GTR), Canada Southern, and Great Western Air Line. By 1887, the population of the Township had soared to 4,000 inhabitants, with seven post offices, thirteen churches and fourteen public schools.

## 2.4.2 Town of Fort Erie

Fort Erie began as a British fort to protect lines of communication along the Niagara River, and later served as a supply depot for the British during the American Revolutionary War. This fort was heavily damaged by ice on the Niagara River in 1799 and a new fort was built slightly south of the earlier one. This new fort was destroyed by the same means in 1803, and a third fort was constructed between 1804 and 1807 on higher ground behind the location of the first two (Canadian Encyclopedia 2013). On 03 July 1814 during the War of 1812, the fort was captured by American troops who crossed the river from Buffalo, New York. The subsequent American incursion into Upper Canada was stopped at the Battle of Lundy's Lane on 25 July 1814, with the American troops falling back to Fort Erie.

British troops ultimately recaptured Fort Erie on 05 November 1814, but the fort sustained heavy damage during fighting and was further damaged by the Americans upon their departure. Fort Erie was not reconstructed as a military fort, and only occupied with a small garrison of British troops until 1823 (Canadian Encyclopedia 2013). The site of the fort was recognized as a National Historic Site in 1931, and reconstruction of the fort began in 1937 and was completed and opened to the public in 1939 (Parks Canada 1991).

The Town of Fort Erie grew up north of Fort Erie and became the largest settlement in Bertie Township with an advantageous location along the Niagara River opposite Buffalo, New York. Development of Fort Erie was fueled by the arrival of the railroads in the mid-19<sup>th</sup> century, as well as fugitive slaves from the United States.

Being so close to Buffalo, the Town of Fort Erie became a terminus on the Underground Railroad from the 1840s to the 1860s, with the largest influx of African Americans after the passage of the US Fugitive Slave Act in 1850 (Niagara This Week 2008). By 1880, there were several hundred African Americans living in three main areas of Fort Erie: Little Africa, Bertie Hill, and Snake Hill (Niagara This Week 2008).

The town was occupied in 1866 during the Fenian Raids, a series of attacks by Irish American Nationalists, so-called “Fenians,” in an attempt to pressure Great Britain to withdraw from Ireland (Niagara Falls Museums n.d.). Fort Erie was the subject of one of the Fenian Raids when approximately 1,000 Fenians crossed the Niagara River and occupied Fort Erie, tearing up railroad tracks and cutting telegraph wires. The Fenians then moved north along the Niagara River, defeating the Canadian militia in a series of skirmishes before reinforcements pushed them back across the river (Niagara Falls Museums n.d.).

By the 1870s, Fort Erie had a population of approximately 1,200 people and was served by several railways, including the Grand Trunk Railway, the Canadian Southern Railway, and the Great Western Air Line (Page and Co. 1876). Development of the Fort Erie area continued through the late 19<sup>th</sup> century, spurred on by the construction of the International Railway Bridge by the Grand Trunk Railway in 1873, which spanned the Niagara River from Victoria just north of Fort Erie to Buffalo, New York and helped international trade flourish in the area (Page and Co. 1876). Victoria was renamed Bridgeburg as a result of the bridge.

Fort Erie has maintained its significance in the 20<sup>th</sup> century, with the construction of the Peace Bridge in 1927, which is the second busiest border crossing between Canada and the United States (BFEPBA 2020). In 1932, Bridgeburg was amalgamated into Fort Erie, and in 1970, Bertie Township was consolidated into the Town of Fort Erie.

### 2.4.3 Property Specific History

A number of historical documents were reviewed as part of the archival research conducted for this Stage 1 archaeological assessment. These include 19<sup>th</sup> century cartographic resources and land registry data as well as 20<sup>th</sup> century topographic maps and aerial photography. As previously indicated, the historical Euro-Canadian record documents the study area as encompassing part of Lot 4, Concession 1 Niagara River, as well as the Government Reserve, both in the former Township of Bertie, County of Welland. Review of the Abstract Index Books for the Township of Bertie, provided by the Ontario Land Registry (Land Registry Office [LRO] 59, Book A), determined that a Crown patent for all 140 acres of Lot 4 was granted to John Warren on 24 August 1796. The subsequent entries in the books document Warren's 1796 lease of 440 acres in Lot 4 of Concessions 1, 2, 3 and 5 to Hugh Gilmer for an undisclosed consideration as well as his 1821 mortgage of 170 acres, once again in Lot 4 of Concessions 1, 2, 3 and 5, to Forsythe Richardson for £6,409.60.

Starting in 1821, the books indicate that Lot 4, Concession 1 Niagara River began to be subdivided into village lots for the growing Town of Fort Erie. Some of these early village lots were sold/ transferred to proprietors such as Jacob Gander, John Warren and Charlotte Warren. Following this subdivision, the portion of the study area consisting of the Catherine Street SPS was located within Registered Plan 505 West of Niagara Street whereas the portion consisting of the Lakeshore SPS was located within Registered Plan 993. Though consulted, the available Abstract Index Books did not provide any information for Plan 505. For Plan 993, the earliest entry in the available books dated to 1901 and recorded a "Release of Deed" by the Crown to one John M. Matthew for an illegible part of the plan.

The 1862 *Tremaine's Map of the Counties of Lincoln and Welland* by G.R. and G.M. Tremaine indicates that by the mid-19<sup>th</sup> century, the portion of the study area consisting of the Catherine Street SPS was located south of the "Gilmore Farm" (possibly related to Hugh Gilmer's 1796 property) within a village lot at the north end of the Town of Fort Erie in Bertie Township (Map 2). As for the portion of the study area consisting of the Lakeshore Road SPS, the 1862 figure portrays this area as adjacent to the Buffalo & Lake Huron Railway in the northeast corner of the Government Reserve for Bertie township (Map 2).

As a major transportation route, the Buffalo & Lake Huron Railway can be considered a significant landscape feature in the vicinity, along with the Niagara River to the east of both study area portions. The map also portrays a roadway along the banks of the Niagara River as a major north-south transportation route following a similar path as the present-day Niagara Boulevard and Lakeshore Road which are adjacent to the study area. No buildings or structures are illustrated within the study area on the 1862 map; however, it should be noted that only the structures of subscribers were usually depicted on county atlases along with churches, schools and other institutions.

By the time of the 1876 *Illustrated Historical Atlas of the Counties of Lincoln and Welland* by H.R. Page, the Government Reserve is no longer labeled and both portions of the study area are depicted within the growing Town of Fort Erie which has been extended south to Lake Erie (Map 2). Once again no buildings or structures are located within the study area, however the 1876 figure does continue to portray the railway, Niagara River, and roadway along the Niagara River, as significant landscape features within the vicinity. Furthermore, the 1876 figure indicates that by this time, the Buffalo & Lake Huron Railway has been converted into the GTR (Map 2).

Moving into the 20<sup>th</sup> century, review of the 1907 to 1924 topographic maps by the Department of National Defence (formerly Department of Militia and Defence) depict no structures within the portion of the study area consisting of the Catherine Street SPS. The maps do, however, illustrate a wood structure directly north of the study area most likely representing the present-day house at 269 Niagara Boulevard. Given the wood construction of the house, it may have been built many years prior to the subdivision for the SPS suggesting early features of the property may have encroached into the study area.

As for the portion of the study area consisting of the Lakeshore Road SPS, the 1907 to 1924 topographic maps portray this area with a number of wood structures fronting Lakeshore Road, likely earlier versions of the present-day houses at 2 to 16 Lakeshore Road, adjacent to the study area. Once again, given the wood construction of the houses, they may have been built many years prior to the subdivision for the SPS suggesting early features of the properties may have encroached into the study area. Also notable in the 1907 to 1924 maps is that the rail line along the Niagara River adjacent to the portion of the study area consisting of the Lakeshore Road SPS is now part of the Michigan Central Railway.

A decade later, the 1934 Air Photo Mosaics of Niagara provided by Brock University indicate that the portion of the study area consisting of the Catherine Street SPS was occupied by a small rectangular structure where the present-day SPS is located as well as a larger rectangular structure where the adjacent present-day vacant lot is located (Map 3). It is unclear based on the 1934 photo whether the structures were residential or commercial in nature. The neighbourhood immediately surrounding the Catherine Street SPS consisted of sparse residential/commercial development in 1934 with heavier development visible for downtown Fort Erie to the south.

As for the portion of the study area consisting of the Lakeshore Road SPS, the 1934 photo depicts a small indeterminate structure where the present-day SPS is located. The structure is located within a partially wooded wedge of land between Albany Street and Lakeshore Road. Though difficult to discern due to the tree cover, a few structures appear to be set back from Lakeshore Road within this wedge of land and may represent the earlier versions of the present-day houses at 2 to 16 Lakeshore Road (some of which have been demolished for new-builds). Also visible in the 1934 photograph are large agricultural tracts to the north of Albany Street (Map 3) which have since been extensively developed into the commercial units and residential subdivisions present today.



## 3.0 ARCHAEOLOGICAL CONTEXT

### 3.1 Existing Conditions

The study area is comprised of two portions: the Catherine Street SPS property consisting of the existing lot at 8 Catherine Street plus, the adjacent vacant lot owned by the Niagara Region equalling approximately 0.17 ha combined, as well as the Lakeshore Road SPS property consisting of the existing lot at 14A Lakeshore Road, plus the adjacent forcemain replacement boundary equalling approximately 1 ha combined.

The portion of the study area encompassing the Catherine Street SPS can be described as containing the one-storey concrete faced SPS structure, large paved asphalt driveway, grassed rear yard, and the adjacent vacant gravel lot. The SPS is enveloped by a chain-link fence and accessed via a gate in the south fence leading to the two-lane paved asphalt Catherine Street roadway. The adjacent vacant gravel lot is bordered by grass with patches of gravel and accessed via a short gravel driveway also leading to Catherine Street. To the north of the SPS and adjacent vacant lot is a small culvert lined along the south margin with trees and shrubs.

The portion of the study area encompassing the Lakeshore Road SPS can be described as containing the small single-storey concrete brick SPS structure, a short concrete platform for external infrastructure, paved asphalt driveway, landscaped trees and bushes along the south edge of the SPS, and the adjacent forcemain replacement boundary/ easement. The SPS is accessed via the driveway which is off of the paved asphalt two to four lane Lakeshore Road. The adjacent forcemain replacement boundary/ easement spans approximately 300 m between the SPS and Veterans Way and consists of the Lakeshore Road roadbed as well as part of the manicured grassed surfaces west of Lakeshore Road.

In general, the neighbourhoods surrounding the study area can be characterized as a mainly sub-urban residential communities consisting of mainly single detached houses with some medium rise apartment buildings and low rise commercial units.

### 3.2 Physiography

The study area is located within the Haldimand Clay Plain physiographic region of Southern Ontario. The Haldimand Clay Plain is a series of parallel belts, which lie between the Niagara Escarpment and Lake Erie, and occupies all of the Niagara Peninsula except for the fruit belt below the escarpment. Although it was once completely submerged in Lake Warren, the till is not all buried by stratified clay and generally comes to the surface on the low morainic ridges in the north. The soils of this region are particularly known for their heavy texture and poor drainage (Chapman and Putnam 1984).

Soil texture can be an important determinant of past settlement, usually in combination with other factors, such as topography. Though the clay soil of the study area is characterized as having fair to poor natural drainage, this soil type would have still supported past human settlement, as it is suitable for growing crops such as hay, wheat, oats, barley, corn and buckwheat (Ontario Agricultural College 1963). Additionally, the topography of the study area is relatively flat with a slight slope towards the Niagara River (Map 4).

The closest primary water source is the Niagara River which is located approximately 50 m east of the portion of the study area comprising of the Catherine Street SPS, and 60 m southeast of the portion of the study area comprising of the Lakeshore Road SPS. A small culvert allows water to flow directly north of the portion of the study area comprising of the Catherine Street SPS property and Lake Erie is located approximately 2 km south of the portion of the study area comprising of the Lakeshore SPS property. The river and lake would have provided potable water, as well as plant and food resources, which would have supported past human settlement of the area.

### 3.3 Registered Archaeological Sites

In order for an inventory of archaeological resources to be compiled, the registered archaeological site records kept by the MHSTCI were consulted. In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MHSTCI. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The study area is located within Borden block AfGr.

Review of the OASD indicated that there are 18 archaeological sites registered within 1 km of the study area (accessed 05 November 2021). Table 2 below provides information on each site based on the OASD as well as the individual Site Record and/ or Update Forms.

A total of two sites are located within 300 m of the portion of the study area consisting of the Catherine Street SPS: AfGr-8 and AfGr-99. A total of six sites are located within 300 m of the portion of the study area consisting of the Lakeshore Road SPS: AfGr-14, AfGr-15, AfGr-53, AfGr-54 and AfGr-77 and AfGr-80. Of these eight sites, five are recorded in the OASD as containing solely Indigenous components, one is recorded as containing Indigenous and Euro-Canadian components, and two were unspecified. Furthermore, three of the eight sites were recorded in the OASD and/ or Site Record/ Update Forms as containing further cultural heritage value or interest (CHVI).

Furthermore, email correspondence with the MHSTCI (see Supplementary Documentation) indicated that four of the 18 archaeological sites registered within 1 km of the study area (AfGr-1; 2; 7 and 9) are now all considered part of the overall Peace Bridge Site. While the OASD coordinates for these four sites place them beyond 300 m from the study area, the MHSTCI correspondence, as well as Williamson et al. (2011), suggest that the boundaries, or Sensitivity Zone, for the overall Peace Bridge Site extend into the portion of the study area comprising of the Lakeshore Road SPS. Further information on the Peace Bridge Site can be found in Section 3.3.1.

Excluding the Peace Bridge Site/ Sensitivity Zone, the nearest registered archaeological site to the study area is AfGr-99, which is located at 253 Niagara Boulevard, directly opposite the SPS on Catherine Street, and approximately 30 m south of that portion of the study area. The OASD Site Record Form for AfGr-99 indicates that it was identified during a recent Stage 1 and 2 archaeological assessment (2021) of the former Ontario Bakery and Deli property (P017-0959-2021). The Site Record Form is pending completion in the OASD and so no further information regarding the site's affiliation or development review status are provided.

The next nearest registered archaeological site to the study area is AfGr-80 which is located approximately 100 m southwest of the portion of the study area consisting of the Lakeshore Road SPS. The OASD Site Record Form for AfGr-80, also known as the Valleywood Site, indicates that it is a Woodland Period campsite that was identified during a 2016 Stage 1 and 2 archaeological assessment (P310-0127-2016). The assessment recovered 947 Indigenous artifacts with a date range of 2,950 to 600 BP and recommended further archaeological assessment in the form of Stage 3 consulting (OASD 2021).

**Table 2: Registered archaeological sites within 1 km of the Study Area**

| Borden Number                                                                          | Name          | Time Period                                                                       | Cultural Affiliation                    | Site Type                                                                             | Current Development Review Status |
|----------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------|
| <b>Located within 1 km of portion of study area consisting of Catherine Street SPS</b> |               |                                                                                   |                                         |                                                                                       |                                   |
| AfGr-1                                                                                 | Orchid        | Post-Contact;<br>Woodland, Late;<br>Woodland, Middle                              | Indigenous; Point Peninsula             | cemetery; ossuary                                                                     | -                                 |
| AfGr-2                                                                                 | Surma         | Archaic, Late; Archaic, Middle; Woodland, Early; Woodland, Late; Woodland, Middle | Indigenous; Meadowood                   | burial; scatter; village                                                              | -                                 |
| AfGr-7                                                                                 | Walnut Street | Archaic, Late;<br>Woodland, Late;<br>Woodland, Middle                             | Indigenous                              | unknown; midden                                                                       | -                                 |
| AfGr-8                                                                                 | Lavinia       | Woodland, Middle                                                                  | Indigenous                              | -                                                                                     | Further CHVI                      |
| AfGr-9                                                                                 | Peace Bridge  | Archaic, Late                                                                     | Indigenous;<br>Broad Point;<br>Genessee | domestic; grave;<br>processing; quarry;<br>special purpose;<br>spiritual / ceremonial | Further CHVI                      |
| AfGr-99                                                                                | -             | -                                                                                 | -                                       | -                                                                                     | -                                 |
| <b>Located within 1 km of portion of study area consisting of Lakeshore Road SPS</b>   |               |                                                                                   |                                         |                                                                                       |                                   |
| *AfGr-1                                                                                | Orchid        | Post-Contact;<br>Woodland, Late;<br>Woodland, Middle                              | Indigenous; Point Peninsula             | cemetery; ossuary                                                                     | -                                 |
| *AfGr-2                                                                                | Surma         | Archaic, Late; Archaic, Middle; Woodland, Early; Woodland, Late; Woodland, Middle | Indigenous; Meadowood                   | burial; scatter; village                                                              | -                                 |
| AfGr-3                                                                                 | Fort Erie III | Archaic, Late, Post-Contact                                                       | Indigenous, English, Euro-Canadian      | camp / campsite, fort, military                                                       | Further CHVI                      |
| *AfGr-7                                                                                | Walnut Street | Archaic, Late;<br>Woodland, Late;<br>Woodland, Middle                             | Indigenous                              | unknown; midden                                                                       | -                                 |
| *AfGr-9                                                                                | Peace Bridge  | Archaic, Late                                                                     | Indigenous;<br>Broad Point;<br>Genessee | domestic; grave;<br>processing; quarry;<br>special purpose;<br>spiritual / ceremonial | Further CHVI                      |
| AfGr-14                                                                                | -             | Post-Contact                                                                      | Indigenous; Euro-Canadian               | Scatter                                                                               | No Further CHVI                   |
| AfGr-15                                                                                | -             | -                                                                                 | -                                       | -                                                                                     | No Further CHVI                   |
| AfGr-51                                                                                | -             | -                                                                                 | -                                       | -                                                                                     | -                                 |
| AfGr-52                                                                                | -             | -                                                                                 | -                                       | -                                                                                     | -                                 |
| AfGr-53                                                                                | -             | Pre-contact                                                                       | Indigenous                              | Scatter                                                                               | No Further CHVI                   |



| Borden Number | Name            | Time Period                                              | Cultural Affiliation      | Site Type             | Current Development Review Status |
|---------------|-----------------|----------------------------------------------------------|---------------------------|-----------------------|-----------------------------------|
| AfGr-54       | -               | Pre-contact                                              | Indigenous                | Findspot              | No Further CHVI                   |
| AfGr-68       | Dominion 1      | Archaic, Late, Post-Contact, Pre-Contact, Woodland, Late | Indigenous                | camp / campsite, fort | Further CHVI                      |
| AfGr-69       | Dominion 2      | Post-Contact                                             | Indigenous                | Unknown               | No Further CHVI                   |
| AfGr-77       | -               | Pre-contact                                              | Indigenous                | Scatter               | Further CHVI                      |
| AfGr-80       | Valleywood Site | Woodland                                                 | Indigenous                | camp / campsite       | Further CHVI                      |
| AfGr-100      | -               | Post-Contact, Pre-Contact                                | Indigenous, Euro-Canadian | Scatter               | Further CHVI                      |

'-' denotes information was not available in the OASD or Site Record/ Update Forms

\*Site present within 1 km of both the Catherine Street SPS and Lakeshore Road SPS portions of the study area

### 3.3.1 The Peace Bridge Site

The Peace Bridge Site (AfGr-9) was identified in 1993 by Archaeological Services Inc. (ASI) while undertaking archaeological assessments at the Walnut Street Site (AfGr-7). During this investigation, it was realized that the organic black paleosol containing cultural material spanning approximately 3,500 years found at the Walnut Street Site (AfGr-7) had been recorded at the previously identified Surma Site (AfGr-2) approximately 100 m north, and the Orchid Site (AfGr-1) approximately 360 m north (Williamson et al 2011). Since this was realized, the Peace Bridge Site (AfGr-9) has been estimated to occupy approximately 30 ha of land beneath the streets, sidewalks, and houses of Fort Erie from south of the Peace Bridge to north of Forsythe Street. The archaeological work pertaining to the Peace Bridge Site (AfGr-9) is discussed in Williamson et al. (2011) and summarized below along with brief descriptions of the findings at the Walnut Street Site (AfGr-7), the Surma Site (AfGr-2), and the Orchid Site (AfGr-1).

The three main occupations identified at the Peace Bridge Site (AfGr-9) include the Late Archaic Period (Genesee, Broadpoint and Small and Narrow Point affiliations), Early Woodland Period (Meadowood and Middlesex/ Adena affiliations), and Transitional Woodland Period. The artifact assemblage collected consisted mainly of chert debitage and faunal remains but also comprised of ground stone tools, ceramic vessel fragments and chert bifaces and formal tools including a large Genesee tool assemblage and two Meadowood biface caches. In total, 2,530 pre-contact Indigenous artifacts were recovered from the 1994 to 1996 field seasons at the Peace Bridge Site (AfGr-9) (OASD 2021).

The Walnut Street Site (AfGr-7) dates from the Middle Archaic through to the Late Woodland periods (ASI 1993). Approximately 4,000 artifacts, including lithic debitage, ceramics, and bone, were recovered from test unit excavations, mechanical trenching, and screening of previously excavated back dirt piles. From the investigations, it was concluded that the site likely continues beneath an adjacent parking lot, and that there is high potential for the discovery of human burials if excavations are expanded (ASI 1993).

The Surma Site (AfGr-2) was identified in 1965 by W. Noble, with additional investigations conducted by ASI in 1992 and 1993 (Emerson and Noble 1966, ASI 1993). The 1992-1993 excavations resulted in the discovery of over 105,000 artifacts including Genesee, Crawford Knoll, Meadowood, and Levanna projectile points, as well as Princess Point ceramics. A portion of the site was left unexcavated in 1992, as construction would not impact it at that time (ASI 1993).

Finally, the Orchid Site (AfGr-1) was identified in 1964 when construction activities near Forsythe Street and Niagara Boulevard unearthed human bones. The site has been subject to multiple archaeological investigations, which identified two areas of interest within the site. Unit A was determined to be a midden on top of an ossuary with between 200 and 400 individuals and a terminal date of AD 900-1000 (White 1966). Unit B was a narrow strip containing a midden on top of at least five individual burials. Artifacts recovered from Unit B date from the Late Archaic Period through 17<sup>th</sup> century (Post Contact Iroquois) (Granger 1976). Subsequent archaeological investigations have been conducted on other portions of the Orchid Site (AfGr-1), including a 2001 Stage 3 assessment north of the previous investigations, and several archaeological assessments at the intersection of Forsythe Street and Niagara Boulevard.

The 2001 Stage 3 assessment investigated approximate 36 m<sup>2</sup> and resulted in the recovery of 375 pre-contact Indigenous artifacts dating from the Late Archaic Period through the 17<sup>th</sup> century (Post Contact Iroquois). Human bone was identified and left *in situ* on the site (ASI 2001). Subsequent archaeological investigations beneath the road and sidewalks at the intersection of Forsythe Street and Niagara Boulevard discovered evidence of a structure and 27 pit features yielding over 25,000 pieces of lithic debitage, 1,000 lithic tools, and hundreds of Indigenous pottery fragments dating from the Late Archaic Period through the Late Woodland Period (ASI 2004a, 2005). Finally, a 2003 Stage 3 assessment consisting of the excavation of 12 one-metre square test units recovered/approximately 12,000 artifacts, including 255 high-quality tools (ASI 2004b).

### 3.4 Previous Archaeological Assessments

Per *Section 1.1., Standard 1* of the MHSTCI 2011, a review of previous archaeological assessments undertaken within the limits of the study area or within 50 m of the study area was assessed. To Golder's knowledge, the identified archaeological assessments conducted within 50 m of the study area include the 2021 Stage 1 and 2 archaeological assessment of the former Ontario Bakery and Deli property at 253 Niagara Boulevard (P017-0959-2021) as well as the 1992 to 2005 assessments and mitigations associated with the Peace Bridge Site (ASI 1993; 2001; 2004a; 2004b; 2005) of which the site limits are illustrated in William et. al (2011) as encompassing the Lakeshore SPS portion of the study area.

The Site Record Form for AfGr-99 2021 which was identified during the Stage 1 and 2 assessment of 253 Niagara Boulevard is pending completion in the OASD and no further information is available regarding the final archaeological report or its recommendations. The Site Record/ Update Forms for the Peace Bridge Site (AfGr-1; 2; 7 and 9) indicate that further archaeological assessment is recommended for the Site (particularly AfGr-9).

### 3.5 Cultural Heritage Resources

Per *Section 1.3 and 1.4 of the Standards and Guidelines for Consultant Archaeologists* (MHSTCI 2011), a property listed on a municipal register, designated under the *Ontario Heritage Act*, or inventoried as a federal, provincial or municipal historic landmark or site, is indicative of archaeological potential, particularly if within a 300 m radius. Review of the Town of Fort Erie's *Register of Designated and Non-designated Cultural Heritage Properties* suggests the only heritage property within 300 m of the study area is the municipally listed St. Paul's Church at 325 Niagara Boulevard (290 m north of the portion of the study area consisting of the Catherine Street SPS).

Additional heritage properties such as the listed property at 57 Queen Street and the provincially designated property known as The Stanton House at 168 Battery Street are located within 1 km of the study area but outside of the 300 m radius. Finally, the Fort Erie National Historic Site of Canada (NHSC) as well as the federally registered properties at 36 Concession Road and 202 Dufferin Street are located more than 1 km from either portion of the study area.

## 4.0 FIELD METHODS

The Stage 1 archaeological property inspection was conducted by Alisha Mohamed of Golder (R1149) on 18 October 2021 under PIF P468-0082-2021 issued to Rhiannon Fisher of Golder (P468), as per Section 12 of the MHSTCI' *Terms and Conditions for Archaeological Licences*, issued in accordance with clause 48(4)(d) of the *Ontario Heritage Act*. The weather on that day was overcast with some rainfall in the morning followed by partial sunshine in the afternoon and a temperature high of about 14° C. The lighting and visibility conditions encountered were appropriate and did not inhibit the observation of features of archaeological potential.

The Stage 1 property inspection employed strategies defined by the MHSTCI in the 2011 *Standards and Guidelines for Consultant Archaeologists*. The entirety of the study area was subject to a property inspection and photo-documentation as illustrated in Images 1-16 and Map 5.

The study area was inspected in two portions: the Catherine Street SPS property consisting of the existing lot at 8 Catherine Street and the adjacent vacant lot owned by the Niagara Region (equalling approximately 0.17 ha combined) and the Lakeshore Road SPS property consisting of the existing lot at 14A Lakeshore Road and the adjacent forcemain replacement boundary (equalling approximately 1 ha combined).

The portion of the study area encompassing the Catherine Street SPS was observed to contain extensive disturbance in the form of the one-storey concrete faced SPS structure with potential buried utilities associated with the SPS infrastructure (Image 1). The soil disturbing activities within these portions of the study area were determined to represent sufficient below-grade disturbance that has resulted in low archaeological potential.

To the south of the Catherine Street SPS structure, a large paved asphalt driveway/ parking area was observed and the entire SPS facility was enveloped by a chain-link fence. To the west of the SPS, the vacant lot was observed to consist of a mix of gravel and dirt surfaces which have been tamped down due to the lot being occasionally used for vehicle parking (Images 2 and 3). Though the paved asphalt and gravel components represented some soil disturbance, they were not observed to be extensive enough to completely remove archaeological potential for this portion of the study area. This determination was further supported by the fact that registered archaeological site AfGr-99 was identified beneath the paved surfaces directly south of the vacant lot at the former site of the Ontario Bakery and Deli at 253 Niagara Boulevard (now demolished). As evidenced in Section 3.3, multiple archaeological sites have been identified in Fort Erie beneath sidewalks, roadways and even houses, suggesting that these construction activities cannot be interpreted to completely remove archaeological potential.

The remaining land conditions observed within the Catherine Street SPS portion of the study area included the line of medium sized trees and shrubs along the south side of the culvert (Image 4), the small grassed rear yard of the SPS structure which contained the remnant stump of a cut tree (Image 5), the strip of grass separating the vacant lot from the SPS (Image 6) and the patches of grass mixed with gravel along the east and south margins of the vacant lot (image 7). These remaining areas were observed to not contain extensive soil disturbance that would have removed archaeological potential.

Following completion of the property inspection for the Catherine Street SPS portion of study area, the portion of the study area encompassing the Lakeshore Road SPS was inspected. This portion of the study area was observed to contain extensive disturbance in the form of the small single-storey concrete brick SPS structure with potential buried utilities associated with the SPS infrastructure (Images 8 to 10). The soil disturbing activities within these portions of the study area were determined to represent sufficient below-grade disturbance that has resulted in low archaeological potential.



To the southeast of the Lakeshore Road SPS structure, a small paved asphalt driveway/ parking area and short concrete platform encasing external infrastructure were observed (Image 11). The remaining land conditions observed within the Lakeshore Road SPS portion of the study area included the landscaped tree/ bush garden along the south edge of the SPS (Image 12) and the adjacent forcemain replacement boundary/ easement which spans approximately 300 m between the SPS and Veterans Way and consists of the Lakeshore Road roadbed, sidewalk and associated utilities, as well as part of the manicured grassed surfaces west of Lakeshore Road (Images 13 to 16).

Though the paved asphalt and concrete driveway/ roadway components within the Lakeshore Road SPS portion of the study area represented some soil disturbance, they were not observed to be extensive enough to completely remove archaeological potential for this portion of the study area. This determination was further supported by the fact that the boundaries of the Peace Bridge Site/ Sensitivity Zone are located approximately 300 m northeast of the Lakeshore Road SPS driveway and, as evidenced in Section 3.3.1, the Peace Bridge Site has been identified beneath sidewalks, roadways and even houses, suggesting that these construction activities cannot be interpreted to completely remove archaeological potential.

Finally, while utilities such as fire hydrants and light posts along Lakeshore Road were observed to represent some soil disturbance in those specific areas, the overall landscaped garden and manicured grassed surfaces west of Lakeshore Road were observed to not contain extensive soil disturbance that would have removed archaeological potential.

## 5.0 ANALYSIS AND CONCLUSION

Archaeological potential is established by determining whether features or characteristics indicating potential are located on or in the vicinity of a study area. Features and characteristics that indicate a higher potential for archaeological resources are defined within Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI 2011: 17-18) and include:

- Previously identified archaeological sites.
- Water sources:
  - Primary water sources (e.g., lakes, rivers, streams, creeks).
  - Secondary water sources (e.g., intermittent streams and creeks; springs; marshes; swamps).
  - Features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels, shorelines of drained lakes or marshes, and cobble beaches).
  - Accessible or inaccessible shoreline (e.g., high bluffs, swamps or marsh fields by the edge of a lake, sandbars stretching into marsh).
- Elevated topography (eskers, drumlins, large knolls, plateaux).
- Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground.
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases.
- Resource areas including:
  - Food or medicinal plants.
  - Scarce raw minerals (e.g., quartz, copper, ochre or outcrops of chert).
  - Early Euro-Canadian industry (fur trade, logging, prospecting, mining).
- Areas of early Euro-Canadian settlement including:
  - Early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes).
  - Early wharf or dock complexes, pioneer churches and early cemeteries.
- Early historical transportation routes (e.g., trails, passes, roads, railways, portage routes).
- Property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial or municipal historic landmark or site.
- Property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

Many of the above features of archaeological potential have a buffer assigned to them, extending the zone of archaeological potential beyond the physical feature. The following buffers are commonly accepted by the MHSTCI and specifically indicated in Section 1.4 of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI 2011: 20-21).

- 300 m buffer: previously identified archaeological site; water sources; areas of early Euro-Canadian settlement; or locations identified through local knowledge or informants.
- 100 m buffer: early historical transportation route.

In the event no buffer is inherently present, potential is restricted to the physical limits or the feature: elevated topography, pockets of well-drained sandy soil, distinctive land formations, resources areas, listed or designated properties and landmark properties.

## 5.1 Potential for Indigenous Archaeological Resources

Potential for Indigenous archaeological sites is established by determining the likelihood that archaeological resources may be present within a study area. Archaeological potential criteria commonly used by the MHSTCI (2011) were applied to determine areas of archaeological potential within the study area. These variables include: distance to previously identified archaeological sites, distance to various types of water sources, drainage, soil type, glacial geomorphology, and the general topographic variability of the area.

Distance to modern or ancient water sources is an important determinant of past human settlement patterns and may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils, or topographic variability, may also indicate archaeological potential.

In archaeological potential modelling, a distance to water criterion of 300 m is generally employed for water sources, including lakeshores, rivers, creeks, and swamps. Potable water is an important resource necessary for any extended human occupation or settlement. As water sources have remained generally stable in Ontario since post-glacial times, proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Hydrological features such as primary water sources (i.e., lakes, rivers, creeks, streams) and secondary water sources (i.e., intermittent streams and creeks, springs, marshes, swamps) would have helped supply plant and food resources to the surrounding area.

The closest primary water source to the study area is the Niagara River which is located approximately 50 m east of the portion of the study area comprising of the Catherine Street SPS and 60 m southeast of the portion of the study area comprising of the Lakeshore Road SPS. Lake Erie is located approximately 2 km south of the portion of the study area comprising of the Lakeshore SPS property. These water sources, primarily the Niagara River, would have provided potable water, as well as plant and food resources, which would have supported past human settlement of the area.

Furthermore, the study area is located within the Haldimand Clay Plain physiographic region of Southern Ontario. Soil texture can be an important determinant of past settlement, usually in combination with other factors, such as topography. Though the clay soil of the study area is characterized as having fair to poor natural drainage, this soil type would have still supported past human settlement, as it would have been suitable for growing crops such as hay, wheat, oats, barley, corn and buckwheat (Ontario Agricultural College 1935). Additionally, the topography of the study area is relatively flat with a slight slope towards the Niagara River.

When the above noted archaeological potential criteria is applied, particularly the proximity of water sources and soil types, the study area is deemed to have potential for Indigenous archaeological resources (Map 6). Furthermore, a review of the OASD maintained by the MHSTCI identified eight sites located within 300 m of the study area including the overall Peace Bridge Site/ Sensitivity Zone (AfGr-1; 2; 7 and 9) which encompasses the portion of the study area consisting of the Lakeshore Road SPS, and AfGr-99 which is approximately 30 m south of the portion of the study area consisting of the Catherine Street SPS. Of these eight sites, five were recorded in the OASD as containing solely Indigenous components and one was recorded as containing both Indigenous and Euro-Canadian components.



## 5.2 Potential for Euro-Canadian Archaeological Resources

The criteria used by the MHSTCI to determine potential for historical archaeological sites include the presence of: 1) particular, resource-specific features that would have attracted past subsistence or extractive uses; 2) areas of initial, non-Indigenous settlement; 3) early historical transportation routes; 4) previously identified archaeological sites; and 5) properties designated under the Ontario Heritage Act (Government of Ontario 2011).

In addition to the study area being located in proximity to resource-specific features such as water sources and having a soil type conducive for past human settlement as stated above, the study area is located within the historic Town of Fort Erie, near a major 19<sup>th</sup> century north-south roadway along the Niagara River, and near the former Buffalo & Lake Huron Railway/ GTR/ Michigan Central Railway corridor (Lakeshore Road SPS portion) which was an early Euro-Canadian historical transportation route. As per *Section 1.3.1* of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI 2011), areas of early Euro-Canadian settlements (e.g., pioneer homesteads, isolated cabins, farmstead complexes, early wharf or dock complexes, pioneer churches, and early cemeteries) and early historical transportation routes (e.g., trails, passes, roads, railways, portage routes) are considered features of archaeological potential.

When the above noted archaeological potential criteria is applied, particularly the historical settlements and transportation routes, the study area is deemed to have potential for Euro-Canadian archaeological resources (Map 6). Furthermore, a review of the OASD maintained by the MHSTCI identified eight sites located within 300 m of the study area. Of these eight sites, one (within 300 m of the Lakeshore Road SPS portion of the study area) was recorded in the OASD as containing a Euro-Canadian component in addition to the Indigenous component, and two were recorded with no specified affiliation (including AfGr-99 approximately 30 m south of the portion of the study area consisting of the Catherine Street SPS). A review of the Town of Fort Erie's *Register of Designated and Non-designated Cultural Heritage Properties* also identified one heritage property within 300 m of the study area (specifically, the Catherine Street SPS portion).

## 5.3 Archaeological Integrity

A negative indicator of archaeological potential is extensive below-grade land disturbance. This includes widespread earth movement activities that would have removed or relocated any archaeological resources to such a degree that their information potential and cultural heritage value or interest has been lost.

Activities that are recognized to cause sufficient disturbance to remove archaeological potential include: quarrying, major landscaping involving grading below topsoil, building footprints, and infrastructure development. Activities including agricultural cultivation, gardening, minor grading, and landscaping do not necessarily remove archaeological potential (MHSTCI 2011: 18).

Identified areas of extensive disturbance include the concrete Catherine Street and Lakeshore Road SPS structures with potential buried utilities associated with the SPS infrastructure. The paved asphalt surfaces for both SPS driveways and the Lakeshore Road roadbed, as well as the vacant gravel and dirt lot adjacent to the Catherine Street SPS are not considered extensive disturbances that have removed all archaeological potential.

## 5.4 Town of Fort Erie Archaeological Zones of Potential

The findings in Section 5.1 and 5.2 of this report are consistent with the Town of Fort Erie's *Official Plan*, specifically *Schedule D: Cultural Heritage Archaeological Zones of Potential* which depicts the portion of the study area consisting of the Lakeshore Road SPS as exhibiting archaeological potential (Town of Fort Erie 2011). While the portion of the study area consisting of the Catherine Street SPS is not depicted as exhibiting archaeological potential in the *Official Plan* it is within close proximity to areas of potential located one block south.

## 6.0 RECOMMENDATIONS

Given the results and conclusions of this Stage 1 archaeological assessment, the following recommendations are provided:

- 1) Portions of the study area that were observed during the Stage 1 property inspection to be extensively and deeply disturbed are determined to have low archaeological potential and are recommended to be exempt from further assessment (i.e., green areas on Map 6).
- 2) Portions of the study area that were observed during the Stage 1 property inspection to be dirt/ gravel surfaces or paved asphalt surfaces adjacent to (i.e., within 50 m) of registered archaeological site AfGr-99 could not be confirmed to be extensively or deeply disturbed and thus still retain archaeological potential. As such, these portions are recommended to be subject to Stage 2 mechanical trenching in accordance with Section 2.1.7 of the MHSTCI 2011 (i.e., orange areas on Map 6).
- 3) Portions of the study area that were observed during the Stage 1 property inspection to be paved asphalt surfaces within 300 m of the overall Peace Bride Site (AfGr-1; 2; 7 and 9) boundaries/ Sensitivity Zone could not be confirmed to be extensively or deeply disturbed and thus still retain archaeological potential. As such, these portions are recommended to be subject to Stage 2 construction monitoring in accordance with Section 2.1.7 of the MHSTCI 2011 (i.e., blue areas on Map 6).
- 4) Portions of the study area that were observed during the Stage 1 property inspection to be grassed or treed surfaces, landscaped gardens, and manicured lawns are determined to have archaeological potential and are recommended to be subject to Stage 2 archaeological assessment by means of shovel test pit survey at 5 m intervals in accordance with Section 2.1.2 of the MHSTCI 2011 (i.e., pink areas on Map 6).

The MHSTCI is requested to review, and provide a letter indicating their satisfaction with the results and recommendations presented herein, with regard to the 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.

## 7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of *Heritage, Sport, Tourism and Culture Industries* (MHSTCI), as a condition of licensing in accordance with *Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18*. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ontario *Ministry of Heritage, Sport, Tourism, and Culture Industries*, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of *the Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of *the Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of *the Ontario Heritage Act*.

*The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33*, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ontario *Ministry of Consumer Services* is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.



## 8.0 BIBLIOGRAPHY

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## 9.0 IMAGES



Image 1: View of Catherine Street SPS structure, exhibiting extensive disturbance, facing north



Image 2: View of vacant gravel and dirt lot adjacent to Catherine Street SPS, exhibiting minimal disturbance, facing north





Image 3: View of vacant gravel and dirt lot adjacent to Catherine Street SPS, exhibiting minimal disturbance, facing northwest



Image 4: View of tree lined culvert north of Catherine Street SPS and adjacent vacant lot, exhibiting archaeological potential, facing west





Image 5: View of grassed rear yard north of Catherine Street SPS, exhibiting archaeological potential, facing west



Image 6: View of strip of grass separating Catherine Street SPS from adjacent vacant lot, exhibiting archaeological potential, facing north





Image 7: View of patches of grass and gravel along eastern margins of vacant lot adjacent to Catherine Street SPS, exhibiting minimal disturbance, facing northeast



Image 8: View of Lakeshore Road SPS structure, exhibiting extensive disturbance, facing northwest





Image 9: View of Lakeshore Road SPS structure, exhibiting extensive disturbance, facing west



Image 10: View of Lakeshore Road SPS structure, exhibiting extensive disturbance, facing north





Image 11: View of short concrete platform and paved asphalt driveway for Lakeshore Road SPS, exhibiting some soil disturbance, facing northwest



Image 12: View of landscaped garden adjacent to utilities for Lakeshore Road SPS, exhibiting archaeological potential, facing northwest





Image 13: View of manicured lawns west of Lakeshore Road, exhibiting archaeological potential (excluding utilities), facing north-northeast



Image 14: View of manicured lawns west of Lakeshore Road, exhibiting archaeological potential (excluding utilities), facing north-northeast





Image 15: View of manicured lawns west of Lakeshore Road, exhibiting archaeological, facing north



Image 16: View of manicured lawns west of Lakeshore Road, exhibiting archaeological potential (excluding utilities), facing southwest

## 10.0 MAPS

All maps follow on succeeding pages.



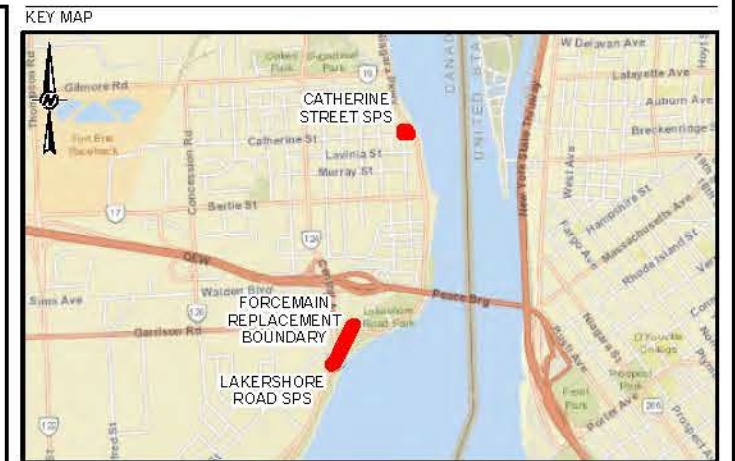








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#### LEGEND

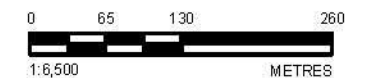
 STUDY AREA

#### NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

#### REFERENCE(S)

1. CANADA DEPARTMENT OF ENERGY, MINES & RESOURCES, 1934, AIR PHOTO MOSAICS OF NIAGARA. ACCESSED AT: BROCK UNIVERSITY LIBRARY  
<[HTTPS://BROCKU.CA/LIBRARY/COLLECTIONS/MDG/MAPS-GEODATA/1934-AIR-PHOTO-MOSAICS-OF-NIAGARA/](https://brocku.ca/library/collections/mdg/maps-geodata/1934-air-photo-mosaics-of-niagara/)>
2. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY  
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COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28



CLIENT  
NIAGARA REGION

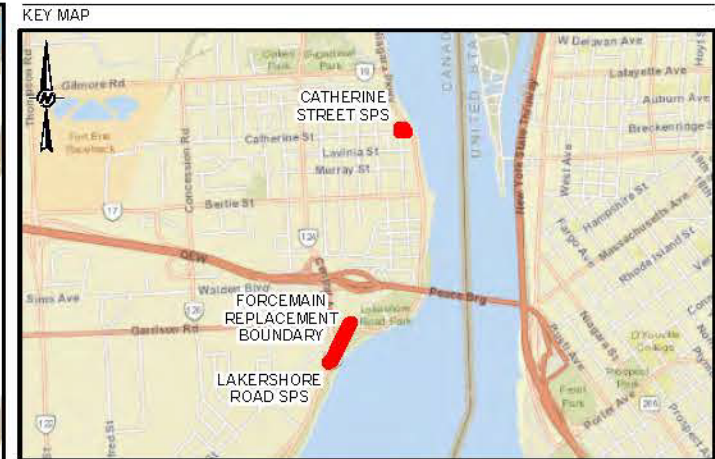
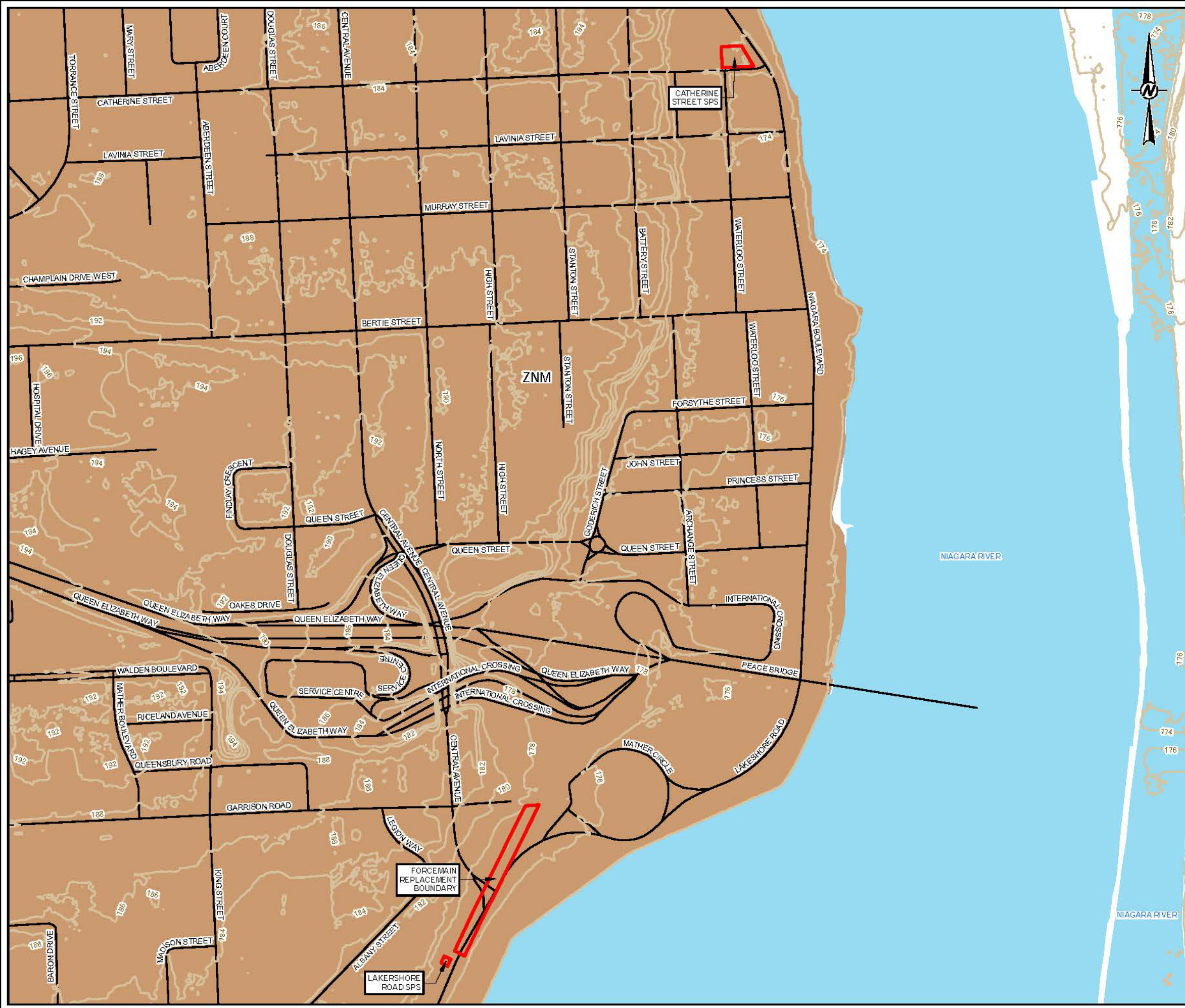
PROJECT  
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: SCHEDULE "B"  
CLASS EA, CATHERINE STREET AND LAKERSHORE ROAD  
SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO  
TITLE  
STUDY AREA OVERLAID ON 1934 AERIAL PHOTOGRAPH

|                                                                                                                      |            |          |
|----------------------------------------------------------------------------------------------------------------------|------------|----------|
| CONSULTANT                                                                                                           | YYYY-MM-DD | 4/4/2022 |
|  <b>GOLDER</b><br>MEMBER OF WSP | DESIGNED   | AM       |
|                                                                                                                      | PREPARED   | BR       |
|                                                                                                                      | REVIEWED   | RF       |
|                                                                                                                      | APPROVED   | MT       |

|                         |                 |           |          |
|-------------------------|-----------------|-----------|----------|
| PROJECT NO.<br>21490136 | CONTROL<br>0002 | REV.<br>A | MAP<br>3 |
|-------------------------|-----------------|-----------|----------|

IF THE MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm



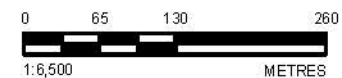


SCALE 1:50,000

- LEGEND
- STUDY AREA
  - ROADWAY
  - TOPOGRAPHIC CONTOUR, METRES
  - WATERBODY
  - SOIL SURVEY COMPLEX
  - NOT MAPPED, ZNM

NOTE(S)  
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)  
1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEEN'S PRINTER 2020  
2. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY  
3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28



|                                                                                                                                                            |                 |            |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|----------|
| CLIENT<br>NIAGARA REGION                                                                                                                                   |                 |            |          |
| PROJECT<br>STAGE 1 ARCHAEOLOGICAL ASSESSMENT: SCHEDULE "B"<br>CLASS EA, CATHERINE STREET AND LAKESHORE ROAD<br>SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO |                 |            |          |
| TITLE<br>SOILS AND ELEVATION WITHIN THE STUDY AREA                                                                                                         |                 |            |          |
| CONSULTANT                                                                                                                                                 |                 | YYYY-MM-DD | 4/4/2022 |
|  <b>GOLDER</b><br>MEMBER OF WSP                                       |                 | DESIGNED   | AM       |
|                                                                                                                                                            |                 | PREPARED   | BR       |
|                                                                                                                                                            |                 | REVIEWED   | RF       |
|                                                                                                                                                            |                 | APPROVED   | MT       |
| PROJECT NO.<br>21490136                                                                                                                                    | CONTROL<br>0002 | REV.<br>A  | MAP<br>4 |







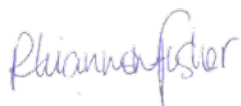




## Signature Page

We trust that this report meets your current needs. If you have any questions, or if we may be of further assistance, please contact the undersigned.

### **Golder Associates Ltd.**



Rhiannon Fisher, MSc, RPA  
*Archaeology Team Lead, GTA and Southwestern Ontario*



Michael Teal, MA  
*Director, Archaeology and Heritage, Ontario*

AM/RF/MT/ca

[https://golderassociates.sharepoint.com/sites/151545/project files/6 deliverables/phase 1000 - archaeology/p468-0082-2021\\_04april2022\\_st1\\_re\\_catherinelakeshoresps.docx](https://golderassociates.sharepoint.com/sites/151545/project%20files/6%20deliverables/phase%201000%20-%20archaeology/p468-0082-2021_04april2022_st1_re_catherinelakeshoresps.docx)

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**SUPPLEMENTARY DOCUMENTATION**

## Stage 1 Archaeological Assessment

*Catherine Street and Lakeshore Road Sewage Pumping Stations Schedule "B"  
Municipal Class Environmental Assessment, Part of Lot 4, Concession 1 Niagara  
River and the Government Reserve, Former Township of Bertie, County of  
Welland, now the Town of Fort Erie, Regional Municipality of Niagara, Ontario*

Licensee: Rhiannon Fisher (P468), MSc, RPA

PIF Number: P468-0082-2021

Submitted to:

**Regional Municipality of Niagara**

Stephanie McGill, Project Manager  
Water & Wastewater, Public Works  
3501 Schmon Parkway  
P.O. Box 1042  
Thorold, Ontario  
L2V 4T7

Submitted by:

**Golder Associates Ltd.**

6925 Century Avenue, Suite #100 Mississauga, Ontario, L5N 7K2 Canada  
+1 905 723 2727

21490136-1000-R01-Rev0

4 April 2022

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| <b>1.0</b> | <b>MHSTCI CORRESPONDENCE.....</b> | <b>1</b> |
|------------|-----------------------------------|----------|

## 1.0 MHSTCI CORRESPONDENCE

Correspondence with the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) regarding the site data search for registered archaeological sites within 1 kilometre (km) of the study area of this Stage 1 archaeological assessment can be found on the succeeding pages.

**From:** von Bitter, Robert (MHSTCI) <[Robert.vonBitter@ontario.ca](mailto:Robert.vonBitter@ontario.ca)>  
**Sent:** October 16, 2021 12:30 PM  
**To:** Fisher, Rhiannon <[Rhiannon\\_Fisher@golder.com](mailto:Rhiannon_Fisher@golder.com)>  
**Subject:** Fort Erie

**EXTERNAL EMAIL**

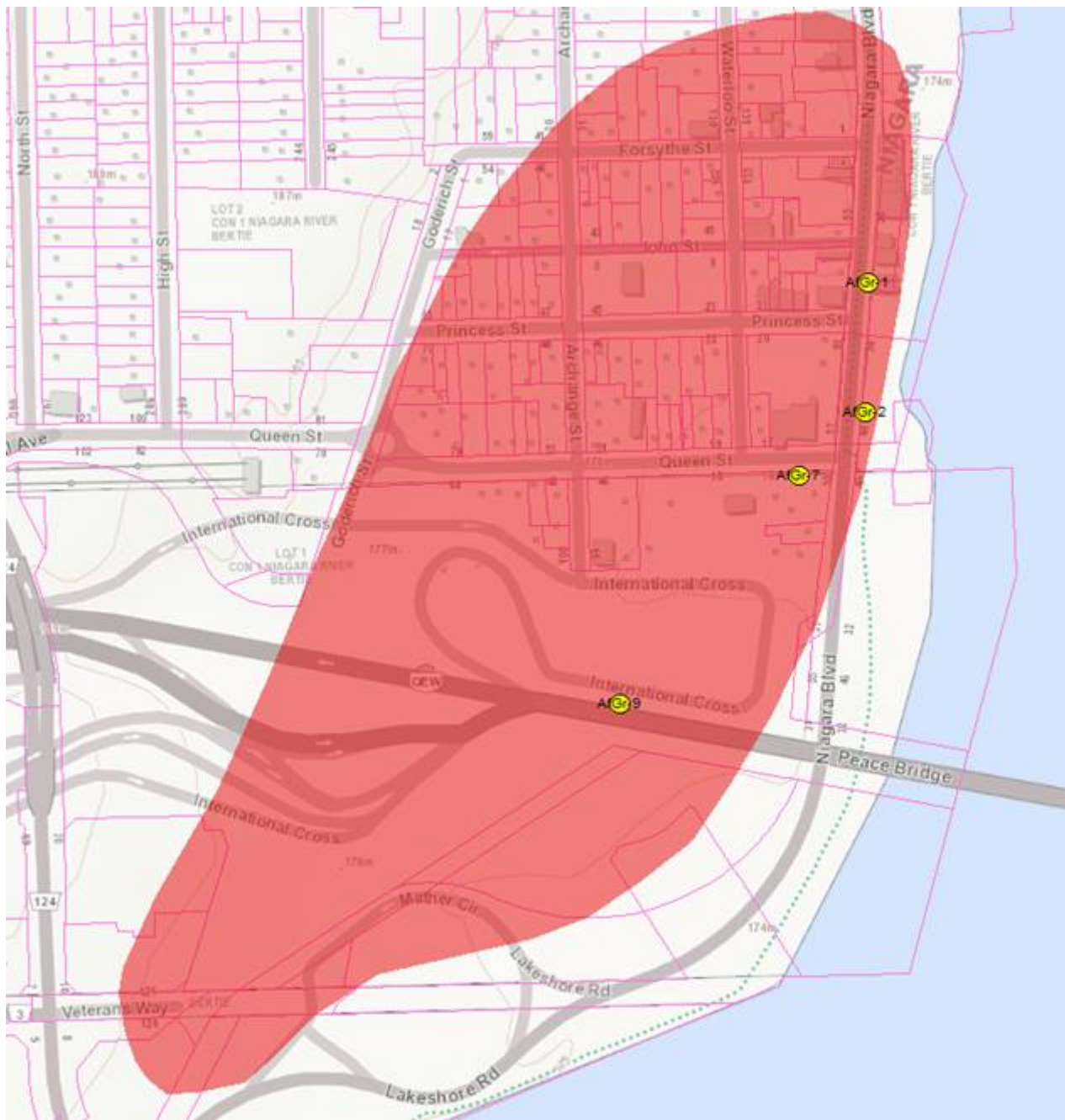
Rhiannon,

In terms of the Fort Erie data I just sent you, I wanted to point out that AfGr-1, 2, 7 and 9 have all been lumped into one site which is now referred to as the Peace Bridge Site. Below is map that represents the current site boundary.

Hope this helps,

Rob





Robert von Bitter  
Archaeological Data Co-Ordinator  
Archaeology Program Unit  
Heritage, Tourism and Culture Division  
Ministry of Heritage, Sport, Tourism and Culture Industries  
401 Bay Street Suite 1700  
Toronto, Ontario M7A 0A7  
437-339-9176  
[Robert.vonBitter@ontario.ca](mailto:Robert.vonBitter@ontario.ca)

## Signature Page

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Michael Teal, MA  
*Director, Archaeology and Heritage, Ontario*

AM/MT/ca

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## **APPENDIX D: CULTURAL HERITAGE REPORT (PREPARED BY GOLDER)**

## TECHNICAL MEMORANDUM

**DATE** 22 April 2022

**Project No.** 21490136-2000

**TO** Stephanie McGill, Project Manager, Water & Wastewater, Public Works  
Regional Municipality of Niagara

**CC** Joel Konrad, PhD, CAHP, Senior Cultural Heritage Specialist; Rhiannon Fisher, MSc, Archaeologist

**FROM** Alisha Mohamed, MA, Cultural Heritage  
Specialist

**EMAIL** [Alisha\\_Mohamed@golder.com](mailto:Alisha_Mohamed@golder.com)

### **CULTURAL HERITAGE SCREENING REPORT – CATHERINE STREET AND LAKESHORE ROAD SEWAGE PUMPING STATIONS SCHEDULE “B” CLASS ENVIRONMENTAL ASSESSMENT, TOWN OF FORT ERIE, ONTARIO**

#### **Executive Summary**

In September 2021, the Regional Municipality of Niagara (Niagara Region) retained Golder Associates Ltd. (Golder) to provide a Cultural Heritage Screening Report (CHSR) to support a Schedule “B” Municipal Class Environmental Assessment (EA) to assess alternative solutions for the Catherine Street and Lakeshore Road Sewage Pumping Stations (SPS) in the Town of Fort Erie, Niagara Region, Ontario (the Project).

The Catherine Street SPS was constructed in 1981 and is located at 8 Catherine Street. Due to the station’s age and the condition of existing infrastructure, the Niagara Region proposes to complete mechanical and electrical/programming upgrades as well as any associated upgrades to the civil and linear infrastructure works. The Lakeshore Road SPS was constructed in 1984 and is located at 14A Lakeshore Road. Due to the station’s age, deteriorating condition and 2041 population estimates, the Niagara Region proposes to complete mechanical, electrical/programming and civil works upgrades as well as the replacement of the station’s 200 millimetre (mm) forcemain.

For the purpose of this CHSR, the “study area” is comprised of the current Catherine Street SPS property (i.e., the existing lot at 8 Catherine Street plus the adjacent lot owned by the Niagara Region equalling approximately 0.17 hectares [ha] combined), the current Lakeshore Road SPS property (i.e., the existing lot at 14A Lakeshore Road plus the adjacent forcemain replacement boundary equalling approximately 1 ha combined), as well as all adjacent property parcels (Figure 1). The study area is located within part of Lots 3 and 4, Concession 1 Niagara River, as well as part of the Government Reserve, all in the Geographic Township of Bertie, former County of Welland, now the Town of Fort Erie, Niagara Region.

Background research and desktop analysis of the study area based on the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) 2016 *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist of the Non-Specialist* (MHSTCI Checklist) identified:

- Adjacent to the Catherine Street SPS:
  - One property with buildings or structures 40 or more years old of potential cultural heritage value or interest (CHVI)
    - 269 Niagara Boulevard
- Adjacent to the Lakeshore Road SPS:
  - One property with buildings or structures 40 or more years old of potential CHVI
    - 8 Lakeshore Road
  - One potential cultural heritage landscape
    - Mather Arch Park
- Adjacent to both the Catherine Street SPS and Lakeshore Road SPS:
  - One potential cultural heritage landscape
    - The Niagara River

Based on these results, Golder recommends the following:

- Conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (CHR) prior to detailed design. The CHR should:
  - identify potential built heritage resources and cultural heritage landscapes;
  - outline impacts to the potential built heritage resources and cultural heritage landscapes within and adjacent to the study area; and,
  - recommend appropriate mitigations to avoid or reduce adverse impacts to built heritage resources and cultural heritage landscapes.



## 1.0 INTRODUCTION

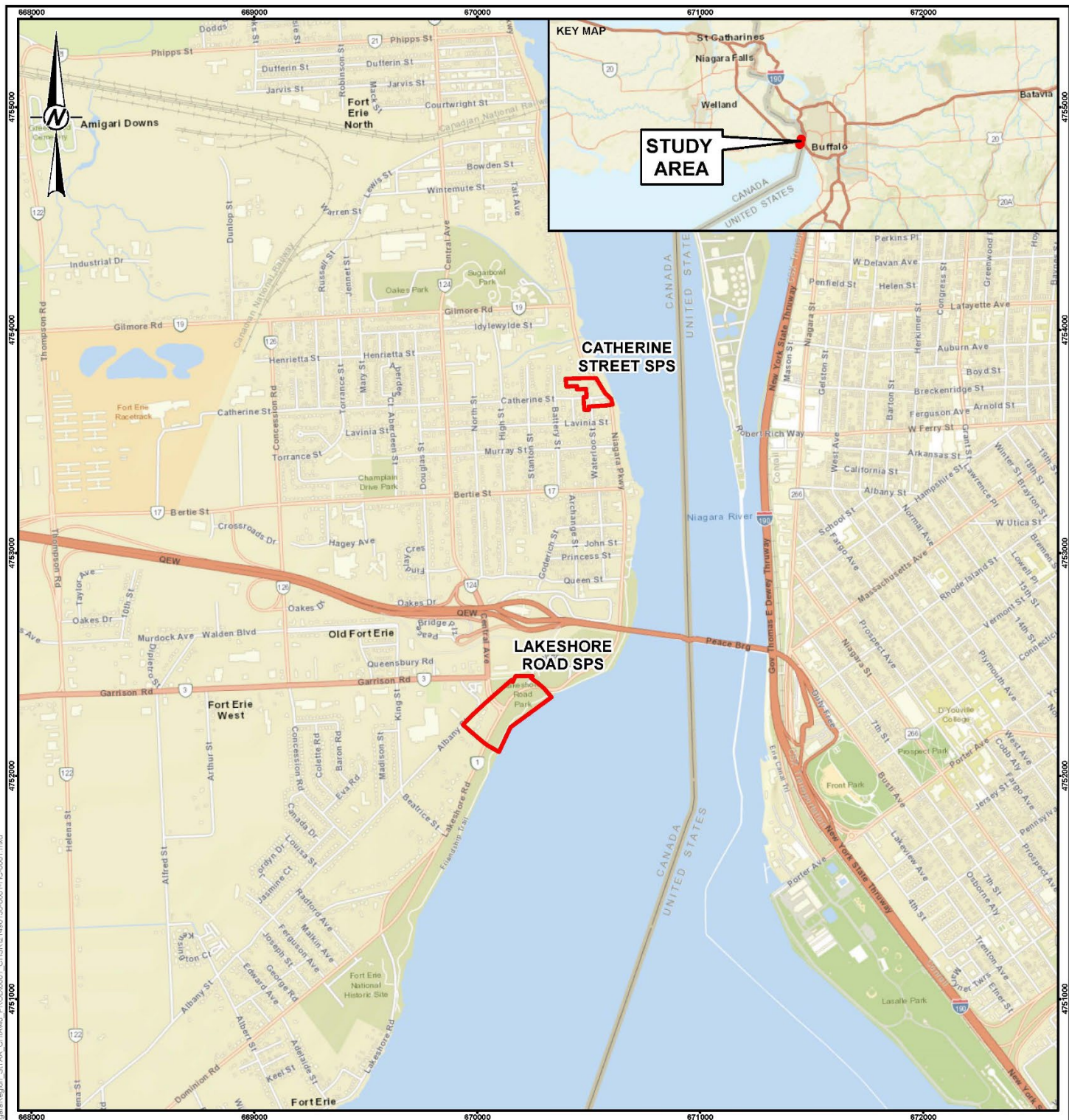
In September 2021, the Regional Municipality of Niagara (Niagara Region) retained Golder Associates Ltd. (Golder) to provide a Cultural Heritage Screening Report (CHSR) to support a Schedule “B” Municipal Class Environmental Assessment (EA) to assess alternative solutions for the Catherine Street and Lakeshore Road Sewage Pumping Stations (SPS) in the Town of Fort Erie, Niagara Region, Ontario (the Project).

The Catherine Street SPS was constructed in 1981 and is located at 8 Catherine Street. Due to the station’s age and the condition of existing infrastructure, the Niagara Region proposes to complete mechanical and electrical/ programming upgrades as well as any associated upgrades to the civil and linear infrastructure works. The Lakeshore Road SPS was constructed in 1984 and is located at 14A Lakeshore Road. Due to the station’s age, deteriorating condition and 2041 population estimates, the Niagara Region proposes to complete mechanical, electrical/ programming and civil works upgrades as well as the replacement of the station’s 200 millimetre (mm) forcemain.

For the purpose of this CHSR, the “study area” is comprised of the current Catherine Street SPS property (i.e., the existing lot at 8 Catherine Street plus the adjacent lot owned by the Niagara Region equalling approximately 0.17 hectares [ha] combined), the current Lakeshore Road SPS property (i.e., the existing lot at 14A Lakeshore Road plus the adjacent forcemain replacement boundary equalling approximately 1 ha combined), as well as all adjacent property parcels (Figure 1). The study area is located within part of Lots 3 and 4, Concession 1 Niagara River, as well as part of the Government Reserve, all in the Geographic Township of Bertie, former County of Welland, now the Town of Fort Erie, Niagara Region.

The objectives of this CHSR are to inform project planning by identifying all known and potential built heritage resources and cultural heritage landscapes within the study area and to determine if the Project will require subsequent cultural heritage studies such as a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (CHR) or property specific Cultural Heritage Evaluation Reports (CHERs) and Heritage Impact Assessments (HIAs).

The scope of this CHSR follows guidance outlined in the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) 2016 *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist of the Non-Specialist* (MHSTCI Checklist).



#### LEGEND

 STUDY AREA

#### NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

#### REFERENCE(S)

1. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY  
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 17 VERTICAL DATUM: CGVD28

#### CLIENT

NIAGARA REGION

#### PROJECT

CULTURAL HERITAGE SCREENING REPORT: SCHEDULE "B"  
CLASS EA, CATHERINE STREET AND LAKESHORE ROAD  
SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO

#### TITLE

LOCATION OF STUDY AREA

#### CONSULTANT



**GOLDER**  
MEMBER OF WSP

PROJECT NO.  
21490136

CONTROL  
0001

YYYY-MM-DD 2022-04-22

DESIGNED AM

PREPARED BR

REVIEWED RF

APPROVED MT

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FIGURE  
1

## 2.0 KEY LEGISLATION AND POLICIES

In Ontario, several provincial policies and legislation guide identifying, protecting, and managing cultural heritage resources.

### 2.1 ***Environmental Assessment Act and Municipal Class Environmental Assessments***

The *Environmental Assessment Act* (EAA) was enacted to ensure that Ontario's environment is protected, conserved, and wisely managed. Under the EAA, "environment" includes not only natural elements such as air, land, water and plant and animal life, but also the "social, economic and cultural conditions that influence the life of humans or a community", and "any building, structure, machine or other device or thing made by humans". To determine the potential environmental effects of new development, the EA process was created to standardize decision-making.

For municipal road, water, and wastewater projects, this decision-making is streamlined in the Class EA process, which divides routine activities with predictable environmental effects into four "schedules" (Government of Ontario 2014; Municipal Engineers Association [MEA] 2015). This Class EA falls under the Schedule B process since it includes "improvements and minor expansions to existing facilities" with "potential for some adverse environmental effects" (Government of Ontario 2014; MEA 2015).

The phases (up to five) and associated actions required for each of these schedules are outlined in the Ontario MEA Manual. A step within Phase 2 of a Class EA is to prepare a description and inventory of the "natural, social and economic environments", which includes built heritage resources and cultural heritage landscapes. This inventory is compiled through searching federal, provincial, and municipal registers or databases of previously identified built heritage resources and cultural heritage landscapes, but also through evaluation using criteria for significance established by the Province.

Avoidance of cultural heritage resources is the primary mitigation suggested in the manual, although other options are suggested including: "employing necessary steps to decrease harmful environmental impacts such as vibration, alterations of water table, etc." and "record or salvage of information on features to be lost" (Appendix 2 of MEA 2015). In all cases, the "effects should be minimized where possible, and every effort made to mitigate adverse impacts, in accordance with provincial and municipal policies and procedures." Importantly, the Class EA provides the opportunity to integrate the requirements of the *EAA* with the *Ontario Planning Act* (see below), both of which must be met (MCEA 2015).

### 2.2 ***Planning Act and Provincial Policy Statement***

The Ontario *Planning Act* (1990) and associated *Provincial Policy Statement 2020* (PPS 2020) mandate heritage conservation in land use planning. Under the *Planning Act*, conservation of "features of significant architectural, cultural, historical, archaeological or scientific interest" are a "matter of provincial interest" and integrates this at the provincial and municipal levels through the PPS 2020. Issued under Section 3 of the *Planning Act*, PPS 2020 recognizes that cultural heritage and archaeological resources "provide important environmental, economic, and social benefits", and that "encouraging a sense of place, by promoting well-designed built form and cultural planning, and by conserving features that help define character, including *built heritage resources* and *cultural heritage landscapes*" supports long-term economic prosperity (PPS 2020:6,22).



The importance of identifying and evaluating built heritage resources and cultural heritage landscapes is recognized in two policies of PPS 2020:

- Section 2.6.1 – *Significant built heritage resources and significant cultural heritage landscapes shall be conserved*
- Section 2.6.3 – Planning authorities shall not permit *development and site alteration on adjacent lands to protected heritage property* except where the proposed *development and site alteration* has been evaluated and it has been demonstrated that the *heritage attributes* of the *protected heritage property* will be *conserved*

Each of the italicised terms is defined in Section 6.0 of PPS 2020, with those relevant to this report provided below:

- **Adjacent lands:** for the purposes of policy 2.6.3, those lands contiguous to a *protected heritage property* or as otherwise defined in the municipal official plan.
- **Built heritage resource:** means a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. *Built heritage resources* are located on property that may be designated under Parts IV or V of the *Ontario Heritage Act* (OHA), or that may be included on local, provincial, federal and/or international registers.
- **Conserved:** means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.
- **Cultural heritage landscape:** means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the OHA; or have been included in on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms.
- **Development:** means the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the *Planning Act*.
- **Heritage attributes:** the principal features or elements that contribute to a protected heritage property's cultural heritage value or interest, and may include the property's built, constructed, or manufactured elements, as well as natural landforms, vegetation, water features, and its visual setting (e.g., significant views or vistas to or from a protected heritage property).
- **Protected heritage property:** property designated under Parts IV, V or VI of the OHA; property subject to a heritage conservation easement under Parts II or IV of the OHA; property identified by the Province and prescribed public bodies as provincial heritage property under the MHSTCI 2014 *Standards and Guidelines for Conservation of Provincial Heritage Properties* (MHSTCI *Standards and Guidelines*); property protected under federal legislation, and UNESCO World Heritage Sites.

- **Significant:** means, in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the OHA.

The definition for *significant* includes a caveat that “while some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation.” The criteria for significance established by the Province as well as the need for evaluation is outlined in the following section. Municipalities implement PPS 2020 through an official plan, which may outline further heritage policies.

### 2.3 Ontario Heritage Act and Ontario Regulation 9/06

The OHA enables the Province and municipalities to conserve significant individual properties and areas. For municipalities, Part IV and Part V of the OHA enables council to “designate” individual properties (Part IV), or properties within a heritage conservation district (HCD) (Part V) as being of CHVI. Evaluation for CHVI under the OHA (or *significance* under PPS 2020) is guided by O. Reg. 9/06, which prescribes the “criteria for determining cultural heritage value or interest”. O. Reg. 9/06 has three categories of absolute or non-ranked criteria, each with three sub-criteria:

- 1) The property has **design value or physical value** because it:
  - i) Is a rare, unique, representative or early example of a style, type, expression, material or construction method;
  - ii) Displays a high degree of craftsmanship or artistic merit; or
  - iii) Demonstrates a high degree of technical or scientific achievement.
- 2) The property has **historic value or associative value** because it:
  - i) Has direct associations with a theme, event, belief, person, activity, organization, or institution that is significant to a community;
  - ii) Yields, or has the potential to yield information that contributes to an understanding of a community or culture; or
  - iii) Demonstrates or reflects the work or ideas of an architect, artist, builder, designer, or theorist who is significant to a community.
- 3) The property has **contextual value** because it:
  - i) Is important in defining, maintaining or supporting the character of an area;
  - ii) Is physically, functionally, visually or historically linked to its surroundings; or
  - iii) Is a landmark.

A property needs to meet only one criterion of O. Reg. 9/06 to be considered for designation under Part IV of the OHA. If found to meet one or more criteria, the property’s CHVI is then described with a Statement of Cultural Heritage Value or Interest (SCHVI) that includes a brief property description, a succinct statement of the property’s cultural heritage significance, and a list of its heritage attributes.

In the OHA heritage attributes are defined slightly differently to the PPS 2020 and directly linked to real property<sup>1</sup>; therefore, in most cases a property's CHVI applies to the entire land parcel, not just individual buildings or structures.

Once a municipal council decides to designate a property, it is recognized through by-law and added to a "Register" maintained by the municipal clerk. A municipality may also "list" a property on the Register to indicate it as having potential CHVI.

### 3.0 SCOPE & METHOD

The scope for a CHSR is outlined in the MHSTCI *Checklist*. The MHSTCI *Checklist* provides a tool to identify from desktop sources all known or recognized cultural heritage resources in a study area, as well as commemorative plaques, cemeteries, Canadian Heritage River watersheds, properties with buildings 40 or more years old, or potential cultural heritage landscapes. Since cultural heritage is linked to real property under the OHA, the desktop analysis included all parcels within the study area boundaries.

To complete the MHSTCI *Checklist*, Golder undertook the following tasks:

- **Task 1:** review of available desktop sources for aerial imagery, historical maps, federal, provincial, and municipal heritage registers, inventories and/ or databases. These sources include:
  - *Canadian Register of Historic Places* (<https://www.historicplaces.ca/en/pages/about-apropos.aspx>)
  - *Parks Canada Directory of Federal Heritage Designations* ([http://www.pc.gc.ca/apps/dfhd/search-recherche\\_eng.aspx](http://www.pc.gc.ca/apps/dfhd/search-recherche_eng.aspx)) and *Directory of Heritage Railway Stations* (<https://www.pc.gc.ca/en/culture/clmhc-hsmhc/pat-her/gar-sta/on>)
  - *Canadian Heritage Rivers System* list of designated heritage rivers (<https://chrs.ca/en>)
  - Ontario Heritage Trust (OHT) *Places of Worship Inventory* (<https://www.heritagetrust.on.ca/en/places-of-worship/places-of-worship-database/search>), *Plaque Database* (<http://www.heritagetrust.on.ca/en/online-plaque-guide>), web mapping application showing OHT Buildings and Easements (<https://www.heritagetrust.on.ca/en/index.php/property-types/buildings>), and *OHA Register* (<https://www.heritagetrust.on.ca/en/oha/basic-search>)
  - Town of Fort Erie *Heritage Planning* webpage and mapping application for the *Town of Fort Erie Register of Designated and Non-designated Cultural Heritage Properties* (<https://www.forterie.ca/pages/HeritagePlanning>)
  - *Ontario Historical County Maps Project* web mapping application (<http://utoronto.maps.arcgis.com/apps/webappviewer/index.html?id=8cc6be34f6b54992b27da17467492d2f>)
  - *Historical Topographic Map Digitization Project* (Ontario Council of University Libraries, main page: <https://ocul.on.ca/topomaps/collection/>)
  - 20<sup>th</sup> century aerial imagery accessed from the Brock University Library (<https://brocku.ca/library/collections/mdg/maps-geodata/1934-air-photo-mosaics-of-niagara/>)
  - Google Street View©

<sup>1</sup> The OHA definition "heritage attributes means, in relation to real property, and to the buildings and structures on the real property, the attributes of the property, buildings and structures that contribute to their cultural heritage value or interest."



- **Task 2:** consult heritage planning staff at the Town of Fort Erie to confirm that local registers and inventories are current as well as identify additional data sources.
- **Task 3:** conduct a field investigation from the public right-of-way (ROW) to document all known (i.e., designated, listed, inventoried) and potential built heritage resources and cultural heritage landscapes in the study area.
- **Task 4:** identify and map all known (i.e., designated, listed, inventoried) and potential built heritage resources and cultural heritage landscapes within the study area, and recommend further studies based on the MHSTCI *Checklist*.

## STUDY RESULTS

### 3.1 Overview of Study Results

Tasks 1 to 4 identified within the study area:

- Adjacent to Catherine Street SPS:
  - One property with buildings or structures 40 or more years old of potential CHVI
    - 269 Niagara Boulevard
- Adjacent to Lakeshore Road SPS:
  - One property with buildings or structures 40 or more years old of potential CHVI
    - 8 Lakeshore Road
  - One potential cultural heritage landscape
    - Mather Arch Park
- Adjacent to both the Catherine Street SPS and Lakeshore Road SPS:
  - One potential cultural heritage landscape
    - The Niagara River

These properties are provided in Section 3.3 of this CHSR. The completed MHSTCI *Checklist* and supplementary documentation for this CHSR are provided in APPENDIX A and APPENDIX B. Finally, properties in the study area with buildings or structures 40 or more years old but assessed not to have CHVI can be found in APPENDIX C.

### 3.2 Record of Engagement

Table 1 lists the results of consultation with heritage planning staff at the Town of Fort Erie, as well as buildings, easement and plaque management staff at the OHT.

**Table 1: Results of Engagement**

| Contact                                                                                                                              | Information Request                                                                                                                                                                                                                                                                                                                                                                                             | Response Received                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lindsay Richardson, MCIP, RPP, Senior Community Planner, The Corporation of the Town of Fort Erie, Planning and Development Services | Query sent via email 29 October 2021 to provide results of Golder's screening of federal, provincial and municipal heritage databases, confirm whether the <i>Town of Fort Erie Register of Designated and Non-designated Cultural Heritage Properties</i> database available online was up to date, and inquire if the Town had any additional cultural heritage concerns within the study area.               | Response received via email 29 October 2021 confirming the <i>Town of Fort Erie Register of Designated and Non-designated Cultural Heritage Properties</i> database was up to date, and that there are no listed or designated built heritage resources or cultural heritage landscapes within the study area. |
| Kevin DeMille, Natural Heritage Coordinator, Designated Contact for Trust Property and Easements Requests, OHT                       | Query sent via email 29 October 2021 to provide results of Golder's screening of federal, provincial and municipal heritage databases, confirm whether the OHT's <i>Places of Worship Inventory, Plaque Database</i> , and web mapping application of OHT Buildings and Easements available online were up to date, and inquire if the OHT had any additional cultural heritage concerns within the study area. | Response received via email 01 November 2021 confirming the OHT's <i>Places of Worship Inventory, Plaque Database</i> , and web mapping application of OHT Buildings and Easements was up to date, and that the OHT does not have any conservation easements or Trust-owned properties within the study area.  |

### 3.3 Assessment of Study Area

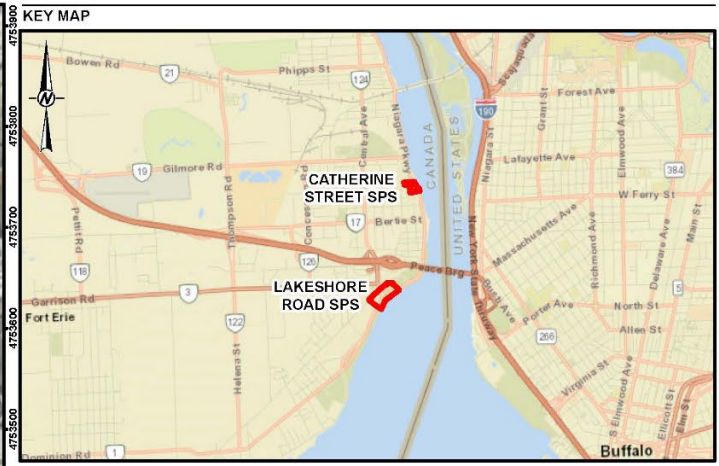
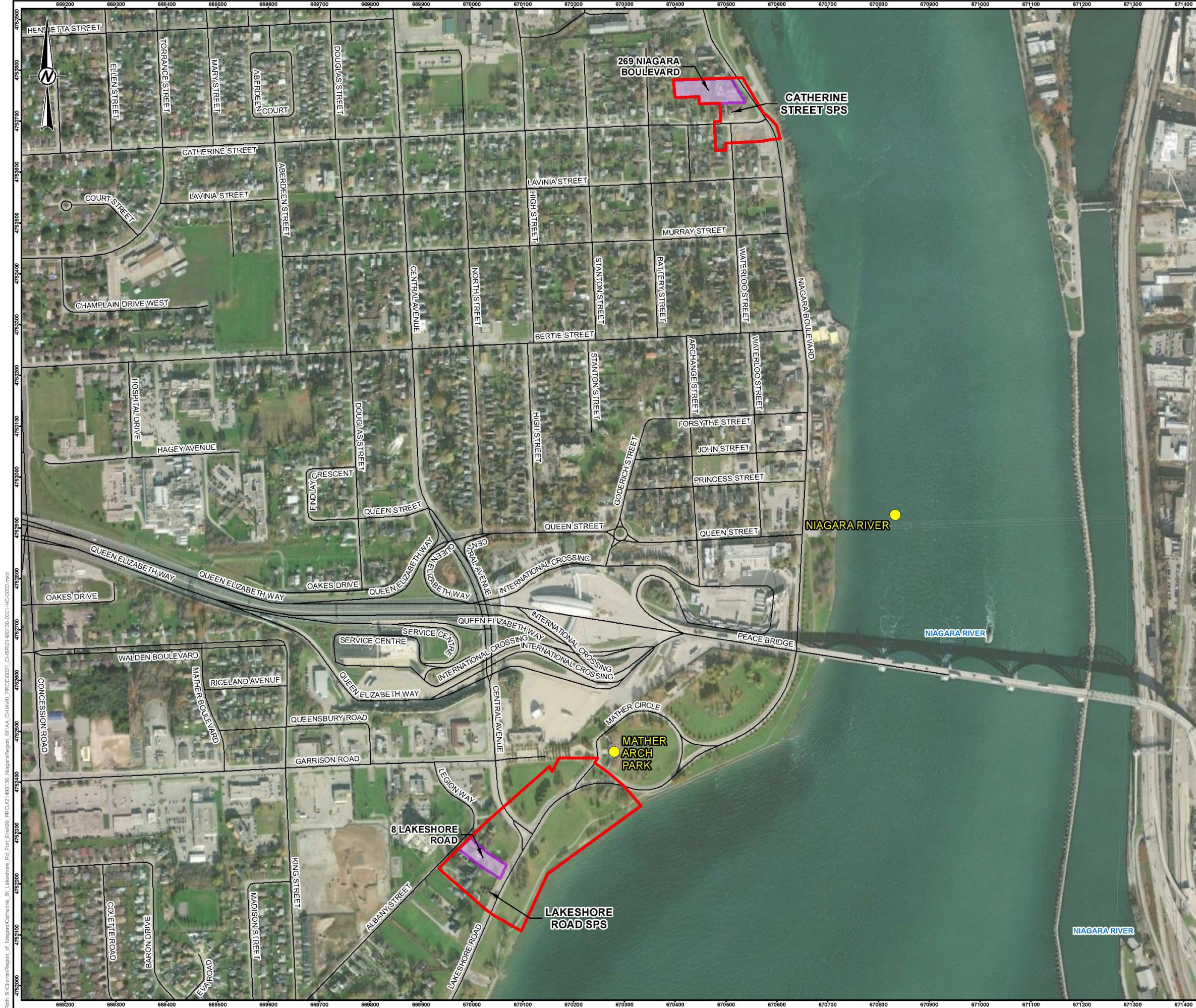
Table 2 lists the properties of potential CHVI and potential cultural heritage landscapes identified within the study area. The parcel boundaries for these properties are mapped in Figure 2.

**Table 2: Properties of known or potential CHVI within the study area**

| Civic Address or Location                                                               |                                                                                     | Description                                                                                                                                                                                   | Cultural Heritage Status          | Potential Impact                                                                                   |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------|
| 269 Niagara Boulevard (per official property mapping though 277-279 displayed on house) |  | Property with buildings or structures 40 or more years old.<br><br>Detached, two-storey, horizontal siding house possibly represented by wooden structure on historical 1907 topographic map. | Potential built heritage resource | Indirect/adjacent:<br><br>Proposed work at Catherine Street SPS is adjacent to the property parcel |

| Civic Address or Location             |                                                                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Cultural Heritage Status              | Potential Impact                                                                                                                   |
|---------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 8 Lakeshore Road                      |    | <p>Property with buildings or structures 40 or more years old.</p> <p>Detached, two-and-a-half storey, horizontal siding house possibly represented by wooden structure on historical 1907 topographic map.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Potential built heritage resource     | <p>Indirect/ adjacent:</p> <p>Proposed work at Lakeshore Road SPS is adjacent to the property parcel</p>                           |
| Mather Arch Park (11 Niagara Parkway) |   | <p>Arch constructed by the Niagara Parks Commission in 1939 in dedication to the architect of the International Peace Bridge.</p> <p>Arch marks the entrance to the Niagara Parkway and the park includes various plaques, a veterans monument and unobstructed views of the Peace Bridge across the Niagara River.</p>                                                                                                                                                                                                                                                                                                                                                                                         | Potential cultural heritage landscape | <p>Indirect/ adjacent:</p> <p>Proposed work on forcemain line from Lakeshore Road SPS is adjacent to the property parcel</p>       |
| Niagara River                         |  | <p>The Niagara River served/ serves as a significant transportation route and resource for both Indigenous populations and Euro-Canadian settlers.</p> <p>The river is noted as a “cultural landscape” by Parks Canada in relation to the Fort George National Historic Site (NHSC) in Niagara-on-the-Lake.</p> <p>Furthermore, the historical 1862 county map and 1907 topographic map portray the Buffalo and Lake Huron Railway (Later Michigan Central Railway) as traversing the path of the existing Niagara River recreational trail (adjacent to the Lakeshore Road SPS). The railways played a significant role in the 19<sup>th</sup> and early 20<sup>th</sup> century development of Fort Erie.</p> | Potential cultural heritage landscape | <p>Indirect/ adjacent:</p> <p>Proposed work at Catherine Street SPS and Lakeshore Road SPS are adjacent to the property parcel</p> |



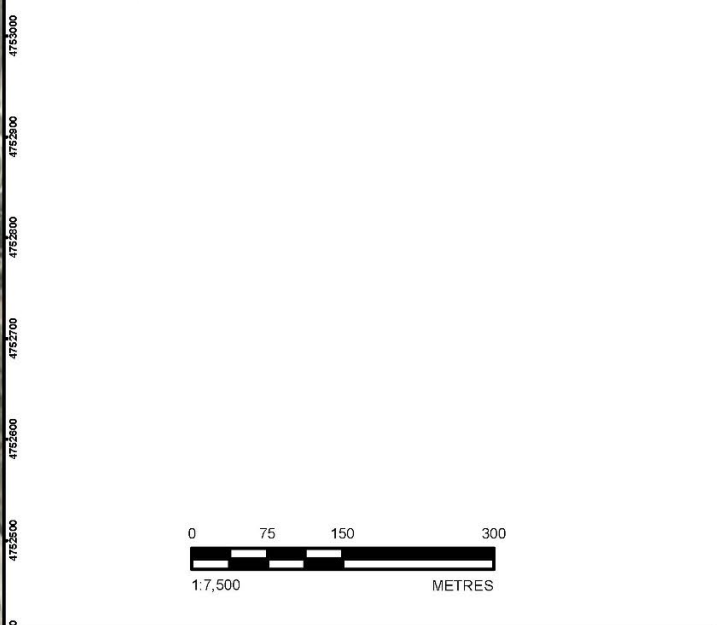


LEGEND

- POTENTIAL CULTURAL HERITAGE LANDSCAPE
- POTENTIAL BUILT HERITAGE RESOURCE
- STUDY AREA
- ROADWAY

NOTE(S)  
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)  
1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2021  
2. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY  
SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY



CLIENT  
NIAGARA REGION

PROJECT  
CULTURAL HERITAGE SCREENING REPORT: SCHEDULE "B"  
CLASS EA, CATHERINE STREET AND LAKESHORE ROAD  
SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO

TITLE  
KNOWN AND POTENTIAL PROPERTIES OF CHVI WITHIN STUDY AREA

CONSULTANT  
GOLDER  
MEMBER OF WSP

DATE  
2022-04-22

DESIGNED  
AM

PREPARED  
BR

REVIEWED  
RF

APPROVED  
MT

PROJECT NO.  
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FIGURE  
2



## 4.0 RECOMMENDATIONS

Due to the existence of potential built heritage resources and cultural heritage landscapes within the study area, Golder recommends to:

- Conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (CHR) prior to detailed design. The CHR should:
  - identify potential built heritage resources and cultural heritage landscapes;
  - outline impacts to the potential built heritage resources and cultural heritage landscapes within and adjacent to the study area; and,
  - recommend appropriate mitigations to avoid or reduce adverse impacts to built heritage resources and cultural heritage landscapes.

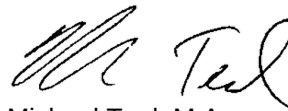
## 5.0 CLOSURE

We trust that this report meets your current needs. If you have any questions, or if we may be of further assistance, please contact the undersigned.

**GOLDER ASSOCIATES LTD.**



Rhiannon Fisher, MSc, RPA  
Archaeology Team Lead, GTA and Southwestern Ontario



Michael Teal, M.A.  
Director, Archaeology and Heritage, Ontario

AM/JK/MT/ca

[https://golderassociates.sharepoint.com/sites/151545/project files/6 deliverables/phase 2000 - cultural heritage/21490136-2000-tm01-rev0\\_22april2022\\_chsr\\_catherinelakeshoresps.docx](https://golderassociates.sharepoint.com/sites/151545/project%20files/6%20deliverables/phase%202000%20-%20cultural%20heritage/21490136-2000-tm01-rev0_22april2022_chsr_catherinelakeshoresps.docx)

Attachments: Appendix A – MHSTCI Checklist  
Appendix B – Supplementary Documentation  
Appendix C – Buildings or Structures 40 or more years old assessed not to have CHVI

**APPENDIX A**

**MHSTCI *Checklist***



## Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

### A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

**Processes covered** under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

### Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

### Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

Project or Property Name

Catherine Street and Lakeshore Road Sewage Pumping Stations Schedule "B" Municipal Class EA

Project or Property Location (upper and lower or single tier municipality)

Town of Fort Erie, Regional Municipality of Niagara

Proponent Name

Regional Municipality of Niagara

Proponent Contact Information

Stephanie McGill, Project Manager Water & Wastewater, Public Works

### Screening Questions

|                                                                                  | Yes                      | No                                  |
|----------------------------------------------------------------------------------|--------------------------|-------------------------------------|
| 1. Is there a pre-approved screening checklist, methodology or process in place? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

### Part A: Screening for known (or recognized) Cultural Heritage Value

|                                                                                                                    | Yes                      | No                                  |
|--------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|
| 2. Has the property (or project area) been evaluated before and found <b>not</b> to be of cultural heritage value? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

|                                                                                                                             | Yes                      | No                                  |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|
| 3. Is the property (or project area):                                                                                       |                          |                                     |
| a. identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. a National Historic Site (or part of)?                                                                                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. designated under the <i>Heritage Railway Stations Protection Act</i> ?                                                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. designated under the <i>Heritage Lighthouse Protection Act</i> ?                                                         | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?          | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

## Part B: Screening for Potential Cultural Heritage Value

|                                                                                               | Yes                                 | No                                  |
|-----------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 4. Does the property (or project area) contain a parcel of land that:                         |                                     |                                     |
| a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b. has or is adjacent to a known burial site and/or cemetery?                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c. is in a Canadian Heritage River watershed?                                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d. contains buildings or structures that are 40 or more years old?                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

## Part C: Other Considerations

|                                                                                                                                                  | Yes                                 | No                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| 5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):                            |                                     |                          |
| a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. has a special association with a community, person or historical event?                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. contains or is part of a cultural heritage landscape?                                                                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**If Yes** to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

**If No** to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority



## Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's [Ontario Heritage Toolkit](#) or [Standards and Guidelines for Conservation of Provincial Heritage Properties](#).

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

### 1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s.B.2.]

## Part A: Screening for known (or recognized) Cultural Heritage Value

### 2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

**Note:** Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

### 3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

- i. designated under the *Ontario Heritage Act*
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)

## Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note:** To date, no properties have been designated by the Minister.

## Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- [Ontario Heritage Trust](#)
- local land registry office (for a title search)

---

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- [Ontario Heritage Trust](#) - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

---

iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

---

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act*. **Note:** To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- [Ontario Heritage Trust](#)



- v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at [registrar@ontario.ca](mailto:registrar@ontario.ca).

### **3b. Is the property (or project area) a National Historic Site (or part of)?**

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the [National Historic Sites website](#).

### **3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?**

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the [Directory of Designated Heritage Railway Stations](#).

### **3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?**

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the [Heritage Lighthouses of Canada](#) website.

### **3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?**

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the [Federal Heritage Buildings Review Office](#).

See a [directory of all federal heritage designations](#).

### **3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?**

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – [World Heritage Site website](#).

## **Part B: Screening for potential Cultural Heritage Value**

### **4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?**

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations



For more information, contact:

- [municipal heritage committees](#) or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's [Heritage directory](#) – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a [list of plaques](#) commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a [list of plaques](#) commemorating Canada's history

**4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?**

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

**4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?**

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the [Canadian Heritage River System](#).

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

**4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?**

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

**Note:** 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide [Heritage Property Evaluation](#).

## Part C: Other Considerations

### **5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?**

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

### **5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?**

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

### **5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?**

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- [municipal heritage committees](#) or local heritage organizations
- Ontario Historical Society's "[Heritage Directory](#)" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through [Ontario Trails](#).

**APPENDIX B**

# Supplementary Documentation



**APPENDIX B – SUPPLEMENTARY SCREENING DOCUMENTATION**

| Screening Criteria                                                                                                       | Results                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PART A</b>                                                                                                            |                                                                                                                                                                                                                                                                                              |
| Has the property (or project area) been evaluated before and found not to be of cultural heritage value?                 | Individual properties within the study area may have been previously evaluated and determined not to be of cultural heritage value or interest but identifying each previously evaluated property was beyond the scope of this preliminary constraints memo.                                 |
| <i>Is the property (or project area):</i>                                                                                |                                                                                                                                                                                                                                                                                              |
| identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value? | Search of the <i>OHA Register</i> , the <i>Town of Fort Erie Register of Designated and Non-designated Cultural Heritage Properties</i> , and consultation with Fort Erie heritage planning staff identified no designated or otherwise protected heritage properties within the study area. |
| a National Historic Site (or part of)?                                                                                   | Search of the <i>Parks Canada Directory of Federal Heritage Designations</i> determined that no part of the study area is, or part, of a National Historic Site.                                                                                                                             |
| designated under the <i>Heritage Railways Stations Protection Act</i> ?                                                  | Search of the <i>Parks Canada Directory of Federal Heritage Designations</i> determined that no part of the study area is designated under the <i>Heritage Railways Stations Protection Act</i> .                                                                                            |
| designated under the <i>Heritage Lighthouse Protection Act</i> ?                                                         | No part of the study area is designated under the <i>Heritage Lighthouse Protection Act</i> .                                                                                                                                                                                                |
| identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?                       | Search of the <i>Parks Canada Directory of Federal Heritage Designations</i> (FHBRO) determined that no buildings in the study area are identified by FHBRO.                                                                                                                                 |
| located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?          | No part of the study area is located within a UNESCO World Heritage Site.                                                                                                                                                                                                                    |
| <b>PART B</b>                                                                                                            |                                                                                                                                                                                                                                                                                              |
| <i>Does the property (or project area) contain a parcel of land that:</i>                                                |                                                                                                                                                                                                                                                                                              |
| is the subject of a municipal, provincial or federal commemorative or interpretive plaque?                               | Search of the <i>OHT Plaque Database</i> and consultation with OHT staff identified no plaques located within the study area.                                                                                                                                                                |

| Screening Criteria                                                                                                                            | Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| has or is adjacent to a known burial and/or cemetery?                                                                                         | Search of the OHT <i>Places of Worship Inventory</i> , and desktop research identified no cemeteries within the study area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| is in a Canadian Heritage River watershed?                                                                                                    | Search of the <i>Canadian Heritage River System</i> online list identified no designated Canadian Heritage Rivers within the study area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| contains buildings or structures that are 40 or more years old?                                                                               | Two properties with buildings or structures 40 or more years old with potential CHVI were identified through the preliminary desktop research and review of: <ul style="list-style-type: none"> <li>▪ The <i>Ontario Historical County Maps Project</i> web mapping application – Welland County 1862</li> <li>▪ 1:63,000 national topographic system (NTS) maps available through the online <i>Historical Topographic Map Digitization Project</i> – Fort Erie Sheets 1907, 1917 and 1924</li> <li>▪ 20<sup>th</sup> century aerial imagery accessed through the Brock University Library</li> <li>▪ Google Satellite and Street View imagery</li> </ul> |
| <b>PART C</b>                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area? | Preliminary desktop analysis determined that the study area contains potential landmarks or structures important in defining the character of the area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| has a special association with a community, person or historical event?                                                                       | Preliminary desktop analysis determined that the study area contains potential built heritage resources and/ or cultural heritage landscapes with special associations to a community, person, or historical event.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| contains or is part of a cultural heritage landscape?                                                                                         | Preliminary desktop analysis determined that the study area intersects or is part of two potential cultural heritage landscapes of significance to both Indigenous and Euro-Canadian settler populations (the Niagara River and Mather Arch Park).                                                                                                                                                                                                                                                                                                                                                                                                         |

## APPENDIX C

Properties with buildings or  
structures 40 or more years old  
assessed not to have CHVI



| Civic Address       |                                                                                    | Brief Description                                                         | Evaluation                                                                                                                                               |
|---------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11 Catherine Street |   | Detached, storey-and-a-half, horizontal siding house.                     | The property does not demonstrate CHVI since it is executed with an average level of construction expertise. It has no apparent historical associations. |
| 17 Catherine Street |   | Detached, two-storey, horizontal siding house with brick porch extension. | The property does not demonstrate CHVI since it is executed with an average level of construction expertise. It has no apparent historical associations. |
| 14 Lakeshore Road   |  | Detached, storey-and-a-half, brick clad and horizontal siding house.      | The property does not demonstrate CHVI since it is executed with an average level of construction expertise. It has no apparent historical associations. |

## **APPENDIX E: DETAILED EVALUATION**

Table E.1 below details the scoring scale used for the detailed evaluation, while Table E.2 details the rationale behind the scoring of each alternative against each sub-criterion.

**Table E.1 – Detailed Evaluation Scoring**

| Scoring Scale  | Impact Score | Symbol                                                                                |
|----------------|--------------|---------------------------------------------------------------------------------------|
| Major Positive | 9-10         |    |
| Minor Positive | 7-8          |    |
| Neutral        | 5-6          |    |
| Minor Negative | 3-4          |    |
| Major Negative | 1-2          |  |



### Table E.2 – Detailed Evaluation Matrix

| Criteria                                  | Sub-Criteria                       | Alternatives                                                                                                                                                                                                                                                                                                                                                                           |    |                                                                                                                        |    |                                                                                                                                                                 |    |                                                                                                                                                                                    |    |                                                                                                                                                                                                                                              |    |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|-------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
|                                           |                                    | A                                                                                                                                                                                                                                                                                                                                                                                      |    | B                                                                                                                      |    | C                                                                                                                                                               |    | D                                                                                                                                                                                  |    | E                                                                                                                                                                                                                                            |    | F                                                                                                                                                  |    | G                                                                                                                                                                  |    |
|                                           |                                    | Lakeshore: Upgrade SPS at existing location<br><br>Catherine: Upgrade SPS at Existing Location                                                                                                                                                                                                                                                                                         |    | Lakeshore: Upgrade SPS at existing location<br><br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |    | Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain<br><br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |    | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br><br>Catherine: Relocate Catherine St. SPS to Forsythe St |    | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br><br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property<br><br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br><br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    |
| Environmental Factors                     | Terrestrial System                 | Alternative D and E scored lower due to the larger work area/sewer length.                                                                                                                                                                                                                                                                                                             |    |                                                                                                                        |    |                                                                                                                                                                 |    |                                                                                                                                                                                    |    |                                                                                                                                                                                                                                              |    |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|                                           |                                    |                                                                                                                                                                                                                                                                                                                                                                                        | 6  |                                                                                                                        | 6  |                                                                                                                                                                 | 6  |                                                                                                                                                                                    | 4  |                                                                                                                                                                                                                                              | 5  |                                                                                                                                                    | 6  |                                                                                                                                                                    | 6  |
|                                           | Aquatic System                     | Alternative D, E and G would result in the largest potential for environmental impact due to the length of sewer and potential groundwater impact. Remaining options have a lower impact due to sewer length.                                                                                                                                                                          |    |                                                                                                                        |    |                                                                                                                                                                 |    |                                                                                                                                                                                    |    |                                                                                                                                                                                                                                              |    |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|                                           |                                    |                                                                                                                                                                                                                                                                                                                                                                                        | 7  |                                                                                                                        | 7  |                                                                                                                                                                 | 7  |                                                                                                                                                                                    | 5  |                                                                                                                                                                                                                                              | 5  |                                                                                                                                                    | 7  |                                                                                                                                                                    | 5  |
|                                           | Groundwater Quality & Quantity     | Alternative D, E, F and G scored lower due to length of sewer and unknowns.                                                                                                                                                                                                                                                                                                            |    |                                                                                                                        |    |                                                                                                                                                                 |    |                                                                                                                                                                                    |    |                                                                                                                                                                                                                                              |    |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|                                           |                                    |                                                                                                                                                                                                                                                                                                                                                                                        | 9  |                                                                                                                        | 8  |                                                                                                                                                                 | 8  |                                                                                                                                                                                    | 5  |                                                                                                                                                                                                                                              | 6  |                                                                                                                                                    | 6  |                                                                                                                                                                    | 6  |
|                                           | Environmental Factors Summary (30) |                                                                                                                                                                                                                                                                                                                                                                                        | 22 |                                                                                                                        | 21 |                                                                                                                                                                 | 21 |                                                                                                                                                                                    | 14 |                                                                                                                                                                                                                                              | 16 |                                                                                                                                                    | 19 |                                                                                                                                                                    | 17 |
| Environmental Factors Weighted Score (25) | 18                                 |                                                                                                                                                                                                                                                                                                                                                                                        | 18 |                                                                                                                        | 18 |                                                                                                                                                                 | 12 |                                                                                                                                                                                    | 13 |                                                                                                                                                                                                                                              | 16 |                                                                                                                                                    | 14 |                                                                                                                                                                    |    |
| Social & Cultural Factors                 | Odour                              | Current location has odour complaints. Alternative A would address the odour complaints within the upgrades however has limited space. Alternative F and G scored higher as a vacant lot would allow for additional room for additional equipment to address odour issues. Alternative A, B and C do not allow for a buffer of space from residents and the trail for potential odour. |    |                                                                                                                        |    |                                                                                                                                                                 |    |                                                                                                                                                                                    |    |                                                                                                                                                                                                                                              |    |                                                                                                                                                    |    |                                                                                                                                                                    |    |

| Criteria | Sub-Criteria                                 | Alternatives                                                                                                                                                                                                                  |   |                                                                                                                    |   |                                                                                                                                                             |   |                                                                                                                                                                                |   |                                                                                                                                                                                                                                          |   |                                                                                                                                                |   |                                                                                                                                                                |   |
|----------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|          |                                              | A                                                                                                                                                                                                                             |   | B                                                                                                                  |   | C                                                                                                                                                           |   | D                                                                                                                                                                              |   | E                                                                                                                                                                                                                                        |   | F                                                                                                                                              |   | G                                                                                                                                                              |   |
|          |                                              | Lakeshore: Upgrade SPS at existing location<br>Catherine: Upgrade SPS at Existing Location                                                                                                                                    |   | Lakeshore: Upgrade SPS at existing location<br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |   | Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain<br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |   | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br>Catherine: Relocate Catherine St. SPS to Forsythe St |   | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |   | Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |   | Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |   |
|          |                                              |                                                                                                                                              | 3 |                                  | 5 |                                                                          | 5 |                                                                                             | 9 |                                                                                                                                                       | 9 |                                                             | 7 |                                                                             | 7 |
|          | Visual/Aesthetics                            | Alternative A and B scored low as the solution would be similar as the existing with an upgraded aesthetically pleasing station. Alternative F and G also scored low as a new station would still be along the lake frontage. |   |                                                                                                                    |   |                                                                                                                                                             |   |                                                                                                                                                                                |   |                                                                                                                                                                                                                                          |   |                                                                                                                                                |   |                                                                                                                                                                |   |
|          |                                              |                                                                                                                                            | 1 |                                | 2 |                                                                        | 6 |                                                                                           | 8 |                                                                                                                                                     | 8 |                                                           | 3 |                                                                           | 1 |
|          | Disruption During Construction               | Alternative F and G scored higher as the area is undisturbed with a lot of laydown space.                                                                                                                                     |   |                                                                                                                    |   |                                                                                                                                                             |   |                                                                                                                                                                                |   |                                                                                                                                                                                                                                          |   |                                                                                                                                                |   |                                                                                                                                                                |   |
|          |                                              |                                                                                                                                            | 1 |                                | 3 |                                                                        | 3 |                                                                                           | 3 |                                                                                                                                                     | 3 |                                                           | 5 |                                                                           | 5 |
|          | Property Acquisition & Easement Requirements | Alternative D would require purchase of land recently purchased at a large capital expense. Similarly, Alternative F and G would result in a large financial expenditure.                                                     |   |                                                                                                                    |   |                                                                                                                                                             |   |                                                                                                                                                                                |   |                                                                                                                                                                                                                                          |   |                                                                                                                                                |   |                                                                                                                                                                |   |
|          |                                              |                                                                                                                                            | 8 |                                | 8 |                                                                        | 8 |                                                                                           | 1 |                                                                                                                                                     | 5 |                                                           | 1 |                                                                           | 1 |
|          | Existing & Future Land Use Compatibility     | Alternative A, B and C is compatible with the existing land use as it's a Regional lot, although surrounded by residential. Alternative F is currently zoned residential.                                                     |   |                                                                                                                    |   |                                                                                                                                                             |   |                                                                                                                                                                                |   |                                                                                                                                                                                                                                          |   |                                                                                                                                                |   |                                                                                                                                                                |   |
|          |                                              |                                                                                                                                            | 9 |                                | 9 |                                                                        | 9 |                                                                                           | 3 |                                                                                                                                                     | 7 |                                                           | 1 |                                                                           | 1 |

| Criteria          | Sub-Criteria                                  | Alternatives                                                                                                                                                                                                          |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|-------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
|                   |                                               | A                                                                                                                                                                                                                     |    | B                                                                                                                  |    | C                                                                                                                                                           |    | D                                                                                                                                                                              |    | E                                                                                                                                                                                                                                        |    | F                                                                                                                                              |    | G                                                                                                                                                              |    |
|                   |                                               | Lakeshore: Upgrade SPS at existing location<br>Catherine: Upgrade SPS at Existing Location                                                                                                                            |    | Lakeshore: Upgrade SPS at existing location<br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |    | Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain<br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |    | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br>Catherine: Relocate Catherine St. SPS to Forsythe St |    | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    |
|                   | Archaeology/Built Cultural Heritage           | Alternatives A, B and C have a lower probability given no archaeological was found on the existing SPS sites. Alternative F and G hold a greater likely hood of finding archaeological due to developing on new land. |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|                   |                                               |                                                                                                                                      | 10 |                                  | 5  |                                                                          | 5  |                                                                                             | 3  |                                                                                                                                                       | 3  |                                                             | 1  |                                                                             | 1  |
|                   | Social & Cultural Factors Summary (60)        |                                                                                                                                    | 32 |                                | 32 |                                                                        | 36 |                                                                                           | 27 |                                                                                                                                                     | 35 |                                                           | 20 |                                                                           | 18 |
|                   | Social & Cultural Factors Weighted Score (25) |                                                                                                                                                                                                                       | 13 |                                                                                                                    | 13 |                                                                                                                                                             | 15 |                                                                                                                                                                                | 11 |                                                                                                                                                                                                                                          | 15 |                                                                                                                                                | 8  |                                                                                                                                                                | 8  |
| Technical Factors | Long-term Flexibility                         | Alternative Fand G would allow for a larger footprint and would score higher than Alternative A-C.                                                                                                                    |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|                   |                                               |                                                                                                                                    | 6  |                                | 8  |                                                                        | 8  |                                                                                           | 6  |                                                                                                                                                     | 6  |                                                           | 9  |                                                                           | 9  |
|                   | Ease of Operation                             | Alternative A scored low due to the limited size and requirement for an above ground facility.                                                                                                                        |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|                   |                                               |                                                                                                                                    | 2  |                                | 5  |                                                                        | 5  |                                                                                           | 7  |                                                                                                                                                     | 7  |                                                           | 5  |                                                                           | 5  |
|                   | Redundancy                                    | Alternative A would have limited storage vs. sewer options.                                                                                                                                                           |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|                   |                                               |                                                                                                                                    | 2  |                                | 5  |                                                                        | 5  |                                                                                           | 9  |                                                                                                                                                     | 9  |                                                           | 6  |                                                                           | 6  |
|                   |                                               | Alternative D would require extensive new infrastructure to tie in.                                                                                                                                                   |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |



| Criteria | Sub-Criteria                                    | Alternatives                                                                                                      |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|----------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
|          |                                                 | A                                                                                                                 |    | B                                                                                                                  |    | C                                                                                                                                                           |    | D                                                                                                                                                                              |    | E                                                                                                                                                                                                                                        |    | F                                                                                                                                              |    | G                                                                                                                                                              |    |
|          |                                                 | Lakeshore: Upgrade SPS at existing location<br>Catherine: Upgrade SPS at Existing Location                        |    | Lakeshore: Upgrade SPS at existing location<br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |    | Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain<br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |    | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br>Catherine: Relocate Catherine St. SPS to Forsythe St |    | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    |
|          | Compatibility with existing infrastructure      |                                  | 7  |                                  | 6  |                                                                          | 6  |                                                                                             | 3  |                                                                                                                                                       | 5  |                                                             | 6  |                                                                             | 6  |
|          | Geotechnical & Hydrogeology                     | Alternative D and E uncertainty due to length. Alternative F and G potential for increase of hydrogeology.        |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|          |                                                 |                                 | 9  |                                 | 7  |                                                                         | 7  |                                                                                            | 3  |                                                                                                                                                      | 3  |                                                            | 6  |                                                                            | 5  |
|          | Climate Change Adaptability (CSO & Wet Weather) | Alternative D and E allow for additional storage, Alternative A, B and C restricted to existing site constraints. |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|          |                                                 |                                | 1  |                                | 4  |                                                                        | 4  |                                                                                           | 9  |                                                                                                                                                     | 9  |                                                           | 7  |                                                                           | 7  |
|          | Permits & Approvals                             | Alternative B and C may require PTTW shaft construction dewatering.                                               |    |                                                                                                                    |    |                                                                                                                                                             |    |                                                                                                                                                                                |    |                                                                                                                                                                                                                                          |    |                                                                                                                                                |    |                                                                                                                                                                |    |
|          |                                                 |                                | 8  |                                | 7  |                                                                        | 7  |                                                                                           | 3  |                                                                                                                                                     | 3  |                                                           | 5  |                                                                           | 3  |
|          | Technical Factors Summary (70)                  |                                                                                                                   | 35 |                                                                                                                    | 42 |                                                                                                                                                             | 42 |                                                                                                                                                                                | 40 |                                                                                                                                                                                                                                          | 42 |                                                                                                                                                | 44 |                                                                                                                                                                | 41 |
|          | Technical Factors Weighted Score                |                                | 13 |                                | 15 |                                                                        | 15 |                                                                                           | 14 |                                                                                                                                                     | 15 |                                                           | 16 |                                                                           | 15 |

| Criteria         | Sub-Criteria                         | Alternatives                                                                                                                                                                                                                |    |                                                                                                                        |      |                                                                                                                                                                 |      |                                                                                                                                                                                    |       |                                                                                                                                                                                                                                              |       |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
|                  |                                      | A                                                                                                                                                                                                                           |    | B                                                                                                                      |      | C                                                                                                                                                               |      | D                                                                                                                                                                                  |       | E                                                                                                                                                                                                                                            |       | F                                                                                                                                                  |    | G                                                                                                                                                                  |    |
|                  |                                      | Lakeshore: Upgrade SPS at existing location<br><br>Catherine: Upgrade SPS at Existing Location                                                                                                                              |    | Lakeshore: Upgrade SPS at existing location<br><br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |      | Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain<br><br>Catherine: Construct new Catherine Street SPS in adjacent empty lot |      | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Forsythe St<br><br>Catherine: Relocate Catherine St. SPS to Forsythe St |       | Lakeshore: Decommission Lakeshore SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Blvd to Catherine St<br><br>Catherine: Construct new Catherine St pump station in adjacent empty lot |       | Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property<br><br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    | Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road<br><br>Catherine: Construct new Catherine St pump station in adjacent empty lot |    |
| Economic Factors | Capital Cost                         | Alternative A has the lowest capital costs, following with Alternative B and Alternative C. Alternative D held the highest capital construction cost due to high costs associated with the long length of the gravity sewer |    |                                                                                                                        |      |                                                                                                                                                                 |      |                                                                                                                                                                                    |       |                                                                                                                                                                                                                                              |       |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|                  |                                      |                                                                                                                                            | 10 |                                      | 10   |                                                                              | 10   |                                                                                                 | 9     |                                                                                                                                                           | 9     |                                                                 | 9  |                                                                                 | 9  |
|                  | Lifecycle Cost                       | Alternative D held the highest lifecycle costs due to high costs and maintenance activities associated with the length of the gravity sewer                                                                                 |    |                                                                                                                        |      |                                                                                                                                                                 |      |                                                                                                                                                                                    |       |                                                                                                                                                                                                                                              |       |                                                                                                                                                    |    |                                                                                                                                                                    |    |
|                  |                                      |                                                                                                                                          | 10 |                                    | 8    |                                                                            | 8    |                                                                                               | 6     |                                                                                                                                                         | 8     |                                                               | 7  |                                                                               | 7  |
|                  | Economic Factors Summary (20)        |                                                                                                                                          | 20 |                                    | 18   |                                                                            | 18   |                                                                                               | 15    |                                                                                                                                                         | 17    |                                                               | 16 |                                                                               | 16 |
|                  | Economic Factors Weighted Score (25) |                                                                                                                                          | 25 |                                    | 22.5 |                                                                            | 22.5 |                                                                                               | 18.75 |                                                                                                                                                         | 21.25 |                                                               | 20 |                                                                               | 20 |
| Total Points     |                                      | 69                                                                                                                                                                                                                          |    | 68                                                                                                                     |      | 70                                                                                                                                                              |      | 56                                                                                                                                                                                 |       | 64                                                                                                                                                                                                                                           |       | 60                                                                                                                                                 |    | 56                                                                                                                                                                 |    |
| % Ranking        |                                      | 2                                                                                                                                                                                                                           |    | 3                                                                                                                      |      | 1                                                                                                                                                               |      | 7                                                                                                                                                                                  |       | 4                                                                                                                                                                                                                                            |       | 5                                                                                                                                                  |    | 6                                                                                                                                                                  |    |