

Schedule B Class Environmental Assessment for the Catherine Street Sewage Pumping Station

Project File Report

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Executive Summary

ES1. Introduction and Background

The Catherine Street Sewage Pumping Station (SPS) is owned and operated by the Region of Niagara (the Region) and is located at 8 Catherine Street in the Town of Fort Erie (the Town), Ontario. The station was commissioned in 1981 and has since undergone minor equipment replacements and various maintenance activities. The station has an existing firm capacity of 151.4 L/s with an actual operational firm capacity of 150.8 L/s. There is also a 150 mm emergency overflow which discharges into the Niagara River. Currently, the flows from the Lakeshore Road SPS are conveyed through a 200 mm forcemain along Lakeshore Road to the upstream Catherine Street SPS. Wastewater from both stations is then conveyed through a 300 mm forcemain to the Anger Avenue Wastewater Treatment Plant (WWTP).

Since construction of the Catherine Street 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. Upgrades to the station are required based on age, condition of the existing infrastructure and equipment necessary to operate the station to meet compliance and workers health and safety needs. 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 identified capacity upgrades due to operational, capacity and wet weather constraints of the SPS.

A Schedule B Municipal Class Environmental Assessment Study (MCEA) was initiated to identify and assess viable alternatives for the upgrades at the Catherine Street 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 Catherine Street 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 Catherine Street SPS MCEA is summarized as follows:

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

The Catherine Street 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 Catherine Street SPS site and also includes the adjacent lot to the east of the existing site, 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 and 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 (**Table 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 Catherine Street 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 in their current state (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 in their current state (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 for Service Strategy 2: Continue to operate both Lakeshore Road and Catherine Street SPS in their Current State (Status Quo)

Long-Listed Alternative	Description
2-i	Lakeshore: Upgrade SPS at existing location Catherine: Upgrade SPS at existing location
2-ii	Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot
2-iii	Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain Catherine: Construct new Catherine Street SPS in adjacent empty lot
2-iv	Lakeshore: Upgrade SPS at existing location Catherine: Relocate to Forsythe Street
2-v	Lakeshore: Upgrade pump station at existing location Catherine: Relocate Catherine Street SPS to the Parkway Southeast of existing site
2-vi	Lakeshore: Relocate Lakeshore Road SPS west within vacant commercial property Catherine: Relocate Catherine Street SPS to Forsythe Street
2-vii	Lakeshore: Relocate Lakeshore Road SPS south to residential property Catherine: Construct new Catherine Street SPS in adjacent empty lot
2-viii	Lakeshore: Relocate Lakeshore Road SPS north to the NPC Triangle Catherine: Construct new Catherine Street SPS in adjacent empty lot

Long-Listed Alternative	Description
2-ix	Lakeshore: Relocate Lakeshore Road SPS to the south of the Peace Bridge Catherine: Construct new Catherine Street SPS in adjacent empty lot
2-x	Lakeshore: Relocate Lakeshore Road SPS to south vacant parking lot along Lakeshore Road Catherine: Construct new Catherine Street SPS in adjacent empty lot

Table ES2. Summary of Long-listed Alternatives for Servicing Strategy 3: Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS

Long-Listed Alternative	Description
3-i	Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore along Niagara Boulevard to Forsythe Street Catherine: Relocate Catherine Street SPS to Forsythe Street
3-ii	Lakeshore: Decommission Lakeshore Road SPS and utilize existing gravity sewer under the CBSA Plaza to Forsythe Street Catherine: Relocate Catherine Street SPS to Forsythe Street
3-iii	Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer under the CBSA Plaza to Catherine Street Catherine: Upgrade and expand Catherine Street SPS at existing location
3-iv	Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Boulevard to Catherine Street Catherine: Construct new Catherine Street SPS in adjacent empty lot
3-v	Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore along the Niagara Boulevard to Gilmore Road Catherine: Construct new Catherine Street SPS 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 ES3 Summary of Short-Listed Alternatives

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

ES.7 Preferred Alternative

The preferred alternative includes constructing a new Catherine Street SPS within the site limits of the adjacent lot, 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:

- 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 compared 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 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

Catherine Street 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 Catherine Street Sewage Pumping Station (SPS) located at 8 Catherine Street in the Town of Fort Erie. The Catherine Street SPS was commissioned in 1981 and has since undergone various maintenance activities while continuing to service the community. 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 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 relocating the Catherine Street SPS on the adjacent empty lot to the east.

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 <https://niagararegion.ca/projects/catherine-street/default.aspx> and on display for review at the following location for 30 calendar days beginning on February 3, 2023 and ending on March 4, 2023.

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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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 February 2, 2023.

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

Term of Acronym	Definition
OP	Official Plan
PFR	Project File Report
PIC	Public Information Centre
PWWF	Peak Wet Weather Flow
PTTW	Permit to Take Water
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 Catherine Street Sanitary Pumping Station (SPS). A related MCEA is also being completed under separate cover for the Lakeshore Road SPS, as described below.

The Catherine Street SPS is located at 8 Catherine Street in the Town of Fort Erie. The station was constructed in 1981 and has since undergone minor equipment replacements and various maintenance activities. In 2016, the Region replaced the existing 250 mm forcemain with a 300 mm Polyvinyl Chloride (PVC) which involved a full road reconstruction, but no upgrades were done to the station.

Currently, the flows from Lakeshore Road SPS, which is located downstream at 14A Lakeshore Road in the Town of Fort Erie, are conveyed through a 200 mm forcemain upstream to the Catherine Street SPS. 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 Catherine Street 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.

As the Lakeshore Road SPS discharges to the Catherine Street SPS and contributes to its flow, 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 Catherine Street SPS, there have been minor replacements and maintenance activities to help prolong the operation, however the facility is now reaching the end of its' useful life. The station now requires upgrades based on age, condition and to ensure health needs, safety needs and Regional compliance standards are met.

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 recommended the Catherine Street SPS for a high priority capacity upgrade as the 2051 design allowance Peak Wet Weather Flow (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.

The Region is completing this MCEA study to determine the most feasible way to address concerns with age, condition, safety, and to address the need to increase pumping capacity of the Catherine Street 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 preferred alternative
- **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.

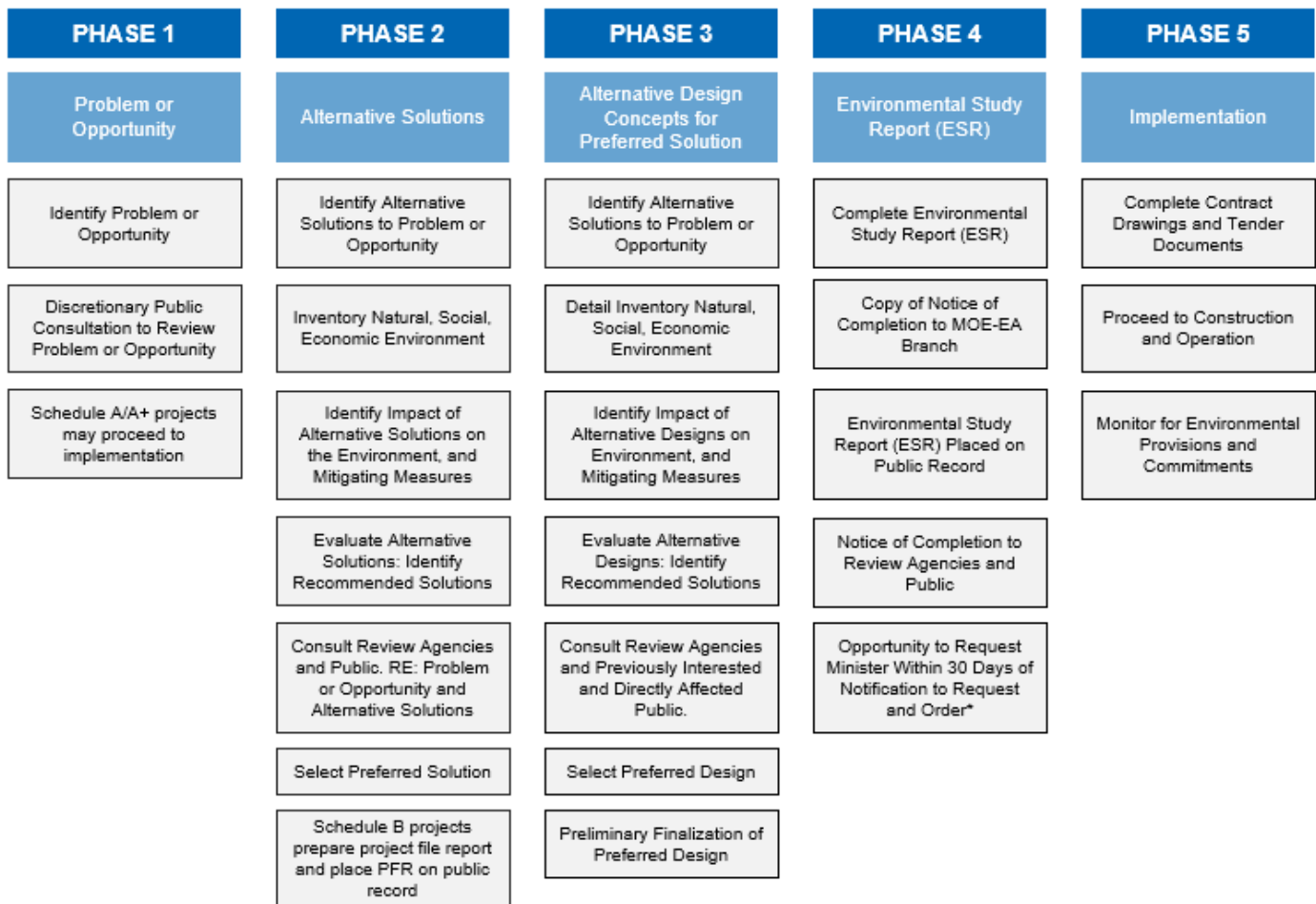


Figure 2-1 Outline of the MEA MCEA Process

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 Catherine Street 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 Catherine Street SPS Environmental Assessment Study documents the decision-making process during the MCEA. The Notice of Completion of this MCEA (issued on February 2, 2023) notifies members of the public and agencies that the PFR would be available for public review for a thirty-day 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.

If there are concerns regarding the study, 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

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 Catherine Street SPS MCEA has been defined as follows:

“Identify and develop a preferred solution to meet future capacity requirements to the year 2041 at the Catherine Street 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 Catherine Street SPS Study Area

The study area for Catherine Street SPS is located within the Town of Fort Erie as illustrated in **Figure 4-1**. 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 4-1**. As mentioned, Lakeshore flows are directed to the Catherine Street SPS and the combined flow is then conveyed to the Anger Avenue WWTP.

4.2 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 4-2**. 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.



Figure 4-1 Catherine Street SPS Study Area Boundary

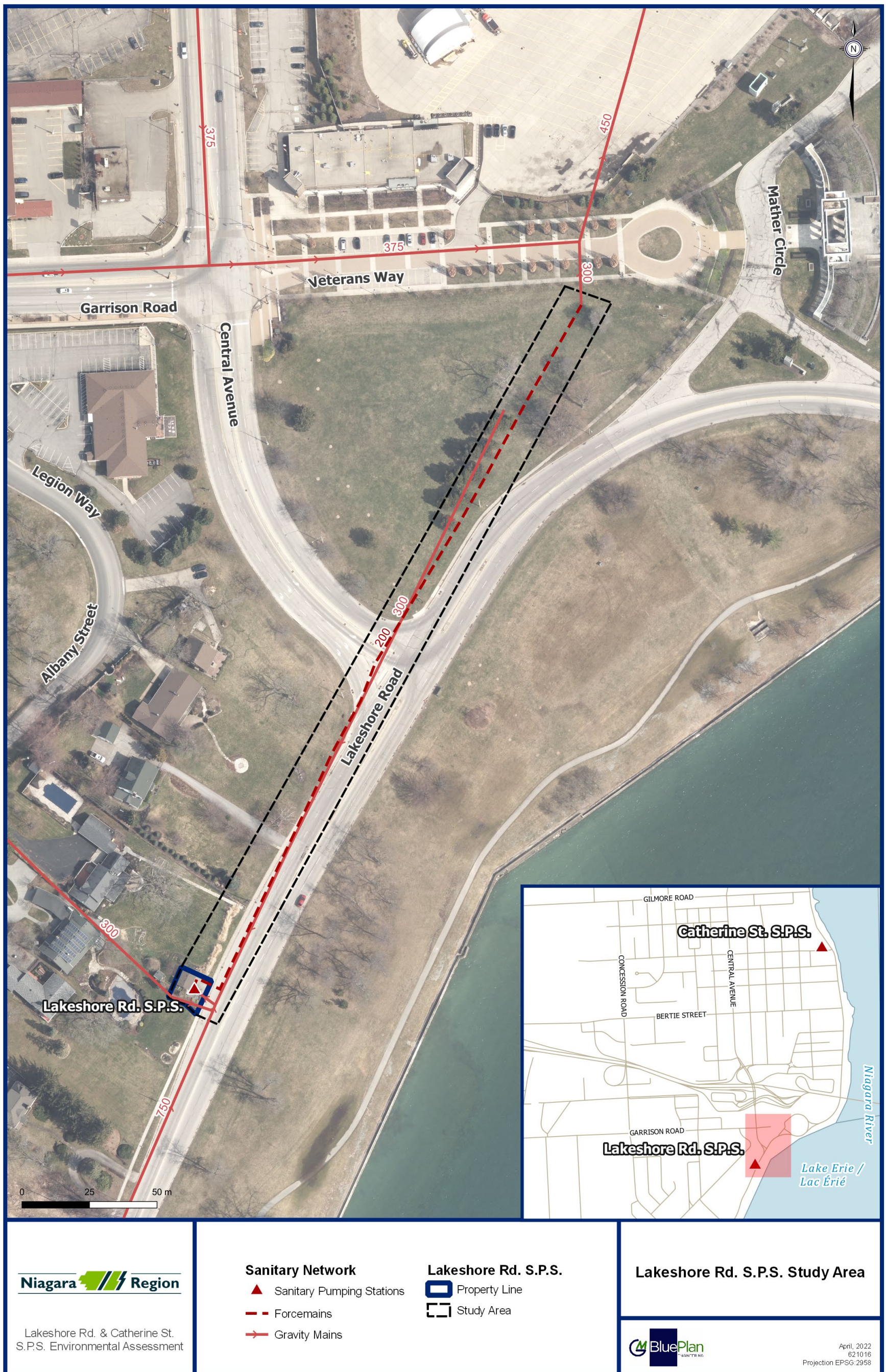


Figure 4-2 Lakeshore Road SPS Study Area Boundary

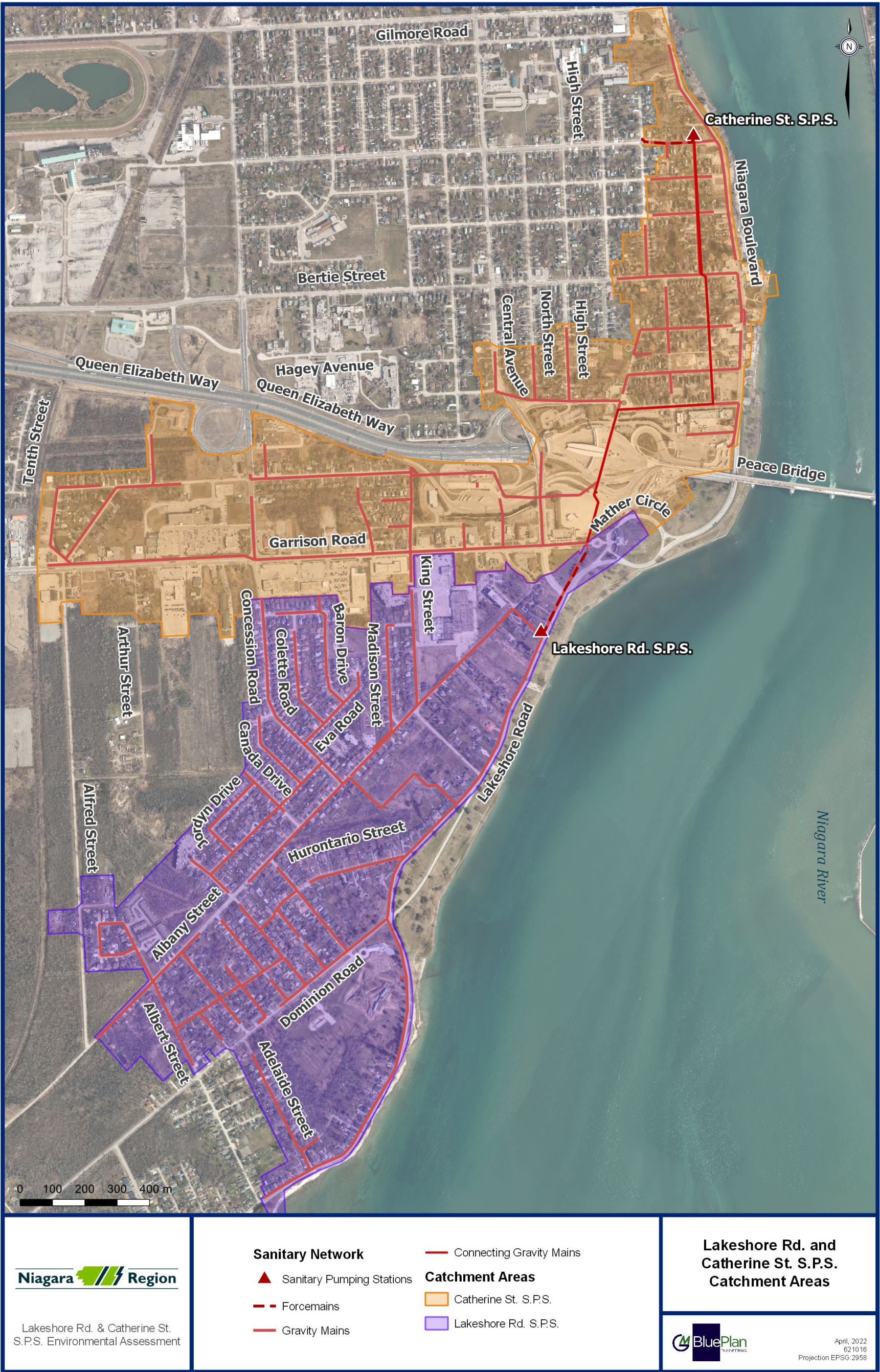


Figure 4-3 Lakeshore Road and Catherine Street SPS Catchment Areas

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 based on public comments and was adopted by Regional Council on June 23, 2022 under by-law 2002-47.

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 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 2021 Water and Wastewater Master Servicing Plan (MSP) Update is expected to be completed in late 2022. Building on the 2016 MSP, the 2021 MSP Update refines the servicing strategies and address the key areas of influence on infrastructure planning: growth; renewal; and compliance needs. The aim of the study is to complete a review of the entire sanitary sewer system, including linear infrastructure and facilities. As part of the 2021 MSP Update, the Regions' sanitary system has been assessed under existing and future conditions, to identify opportunities and constraints and to accommodate further population growth expected by 2051 and beyond.

Both the 2016 MSP and the recent draft 2021 MSP Update recommend, Catherine Street for high priority capacity upgrade as the 2051 design allowance PWWF and the 2051 5-year storm PWWF exceed the station's firm capacity, and the 2051 storage need also exceeds the available storage at the station.

5.4 Migratory Birds Convention Act

The Migratory Birds Convention Act (MBCA) was established in 1917 and amended in 1994 and 2005, to protect migratory birds, their eggs, and their nests. The MBCA was created to implement the Migratory Birds Convention between Canada and the United States. The Act lists protected families and subfamilies of migratory birds and lays out legislation surrounding activities that may impact migratory birds or nests, including when and where activities may occur.

The study area contains areas of forested land, that may support migratory or nesting birds. Measures to avoid or mitigate impacts to migratory birds will be included as part of the preferred solution and mitigation measures.

5.5 Federal Fisheries Act, Fisheries and Oceans Canada (DFO)

The Fisheries Act is a federal legislation for the protection of fish habitat from biological, physical, or chemical alterations that are harmful and/or destructive. Fisheries and Oceans Canada, in conjunction with various other agencies (Environment Canada, Ontario Ministry of Natural Resources and Forestry, Ontario Ministry of the Environment, Conservation and Parks) are responsible for the enforcement and management of fisheries resources. Under the Fisheries Act no undertaking or activity, including inwater works, shoreline works, and Creek crossings should result in serious harm to fish or fish habitats. Impacts must be avoided or mitigated.

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 Catherine Street SPS was originally constructed in 1981 consisting of a wet well (8.5 m by 9.5 m) containing the following equipment: two vertical dry pumps with a rated capacity of 151.4 L/s, control system, high level alarm system, level transmitters, discharge piping, ventilation systems, valves, a standby power generator. The station was designed to have a peak flow of 49 L/s and an ultimate period peak flow of 62 L/s and discharges through a 250 mm forcemain. In 2016, the Region replaced the existing forcemain with the 300 mm PVC which involved a full road reconstruction. Additionally, there is a 150 mm overflow which outlets to the Niagara River. To date, the SPS has not undergone any major upgrades.

6.2 Existing Wastewater System and Connection from Lakeshore Road SPS to Catherine St SPS

The existing Lakeshore Road SPS 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 Catherine Street SPS site are largely urbanized residential or commercial. The SPS site is located off of Niagara Boulevard and is immediately adjacent to residential homes located on the north and east 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 a 150mm PVC watermain under the eastbound lane of Catherine Street that runs east to west and tees into the watermain along Niagara Boulevard. The storm system flows west under the south curb line of Catherine Street and outlets through an 1800 mm x 900 mm concrete box culvert into the Niagara River. There is an existing 250mm PVC sanitary sewer east of the station located under the westbound lane of Catherine Street and flows into a maintenance hole fronting the station. A 300mm PVC sanitary sewer west of the station flows from a maintenance hole in the southbound lane of Niagara Boulevard, crosses under the road centreline of Catherine street, and into the maintenance hole fronting the station. All sanitary flows along Catherine Street, Waterloo Street, and Niagara Boulevard discharge into the station via a 600mm inlet sewer. There is also a 300mm PVC forcemain that runs east along Catherine Street, parallel to the existing 250mm sanitary towards Battery Street.



Figure 6-1 Land Use Map

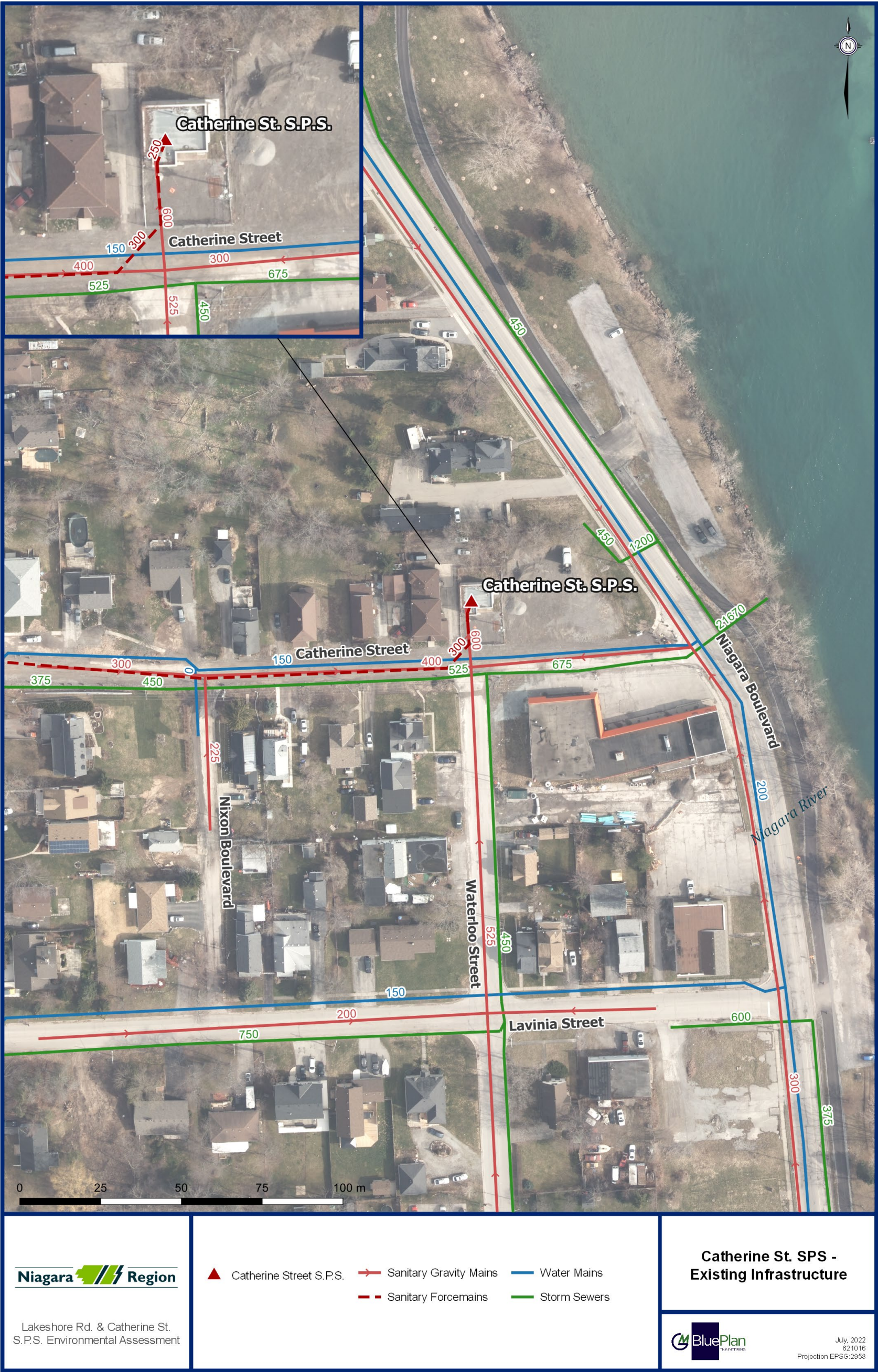


Figure 6-2 Existing Municipal Infrastructure

6.5 Planning and Servicing Considerations

Planning projections, including current and future flows to the Catherine Street 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 December 10, 2020. For this analysis, the firm capacity of the Catherine Street SPS was assumed to be 150.8 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 – Catherine Street Sub Catchment (132.1 ha)

Scenarios	Residential Populations	Employment Population	Total Population
Existing	1,369	1,310	2,679
2051	1,700	1,427	3,127
Build Out	1,762	1,485	3,247

Table 6-2 Build Out Potential Analysis Area and Population Projections – Lakeshore Road Sub Catchment Area (150.3 ha)

Scenarios	Residential Populations	Employment Population	Total Population
Existing	2,526	457	2,983
2051	2,785	475	3,260
Build Out	2,866	478	3,344

Table 6-3 Build Out Potential Analysis Area and Population Projections – Total Catherine Street SPS and Lakeshore Road Sub Catchment Area

Scenarios	Residential Populations	Employment Population	Total Population
Existing	3,895	1,767	5,662
2051	4,485	1,902	6,387
Build Out	4,628	1,963	6,591

Build-out flows were estimated based on the growth projections identified above, **Table 6-4** provides a summary of the projected future design flows.

Table 6-4 2021 MSP Existing, 2051, and Build Out Design Storm Flows

Catherine Street SPS	Existing Peak Flow (L/s)	Future (2051) Peak Flow (L/s)	Build Out Peak Flow (L/s)
Operational Capacity	150.8		
PDWF	67	75	77
RDII	113	113	113
Design PWWF	180	189	190
2-yr Design Storm	333	341	343
5-yr Design Storm	425	434	436
10-yr Design Storm	454	462	464

As these results demonstrate, the 150.8 L/s operational capacity of the pump station does not meet existing design peak wet weather flows based on the design criteria set in the 2021 MSP. Catherine Street SPS was recommended for a high priority capacity upgrade as the 2051 design allowance PWWF and the 2051 5-year storm PWWF exceed the station's firm capacity, and the 2051 storage need also exceeds 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 190 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 Catherine 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 off Niagara Boulevard along Catherine Street. Niagara Boulevard is a four-lane roadway while Catherine Street is a two-lane roadway. There are no major roads or Regional roads within the study area.

6.8 Existing Utilities

The existing Catherine Street SPS has a gas line fronting the station located under the curb faced sidewalk with a service line running along the west property line towards the station. The main gas line continues east/west along Catherine Street under the sidewalk, and then north/south along Niagara Boulevard in close proximity to the property line. On site there is an existing grounding wire surrounding the station approximately 0.3m below ground and two hydro poles along the east fence line. One pole has mounted transformers that provides both aerial and underground utilities and the second pole supplies secondary service to the station and is only aerial. Both poles are connected to a light standard outside of the station at the southeast corner of the Waterloo and Catherine Street intersection. Majority of the utilities in the area are located overhead (aerial) on poles along the south side of Catherine Street.

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 99 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.

Eleven of the identified bird species are listed under the Fish and Wildlife Conservation Act and 72 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.

The emergency outfall for the Catherine Street SPS is directed to the Niagara River, which is designated as Significant Wildlife Habitat. Habitat within the SPS site boundary is limited, with notable lack of natural areas.

6.9.3 Fisheries and Aquatic Habitat

A review of background information did not identify any streams within the study area or within 120m with fish habitat limited to the Niagara River, which is east of the SPS site.

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 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 study area was completed on November 9, 2021. The investigation focused on providing recommendations with regard to tree protection.

The survey identified 24 trees within the Catherine Street study area limits, which ranged in size from 10 to 55 cm diameter at breast height 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 Catherine Street 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 two (2) registered archaeological sites located within 300 m of the Catherine Street SPS study area which have potential for the recovery of both Indigenous and Euro-Canadian archaeological resources. Furthermore, 30m from the Catherine Street study area there is a registered archaeological site, which is located at 253 Niagara Boulevard. These findings were 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'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 is currently continuing this investigation as a Stage 2 archaeological assessment is underway. 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 (1) property with buildings or structures 40 or more years old of potential CHVI at 269 Niagara Boulevard
- One (1) potential landscape with CHVI: The Niagara River

A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment will need to be completed prior to detailed design. This second level assessment will identify potential built heritage resources and cultural heritage landscapes, outline impacts to potential resources and landscapes and recommended appropriate mitigation measures. For further details on the report, please refer to **Appendix C**.

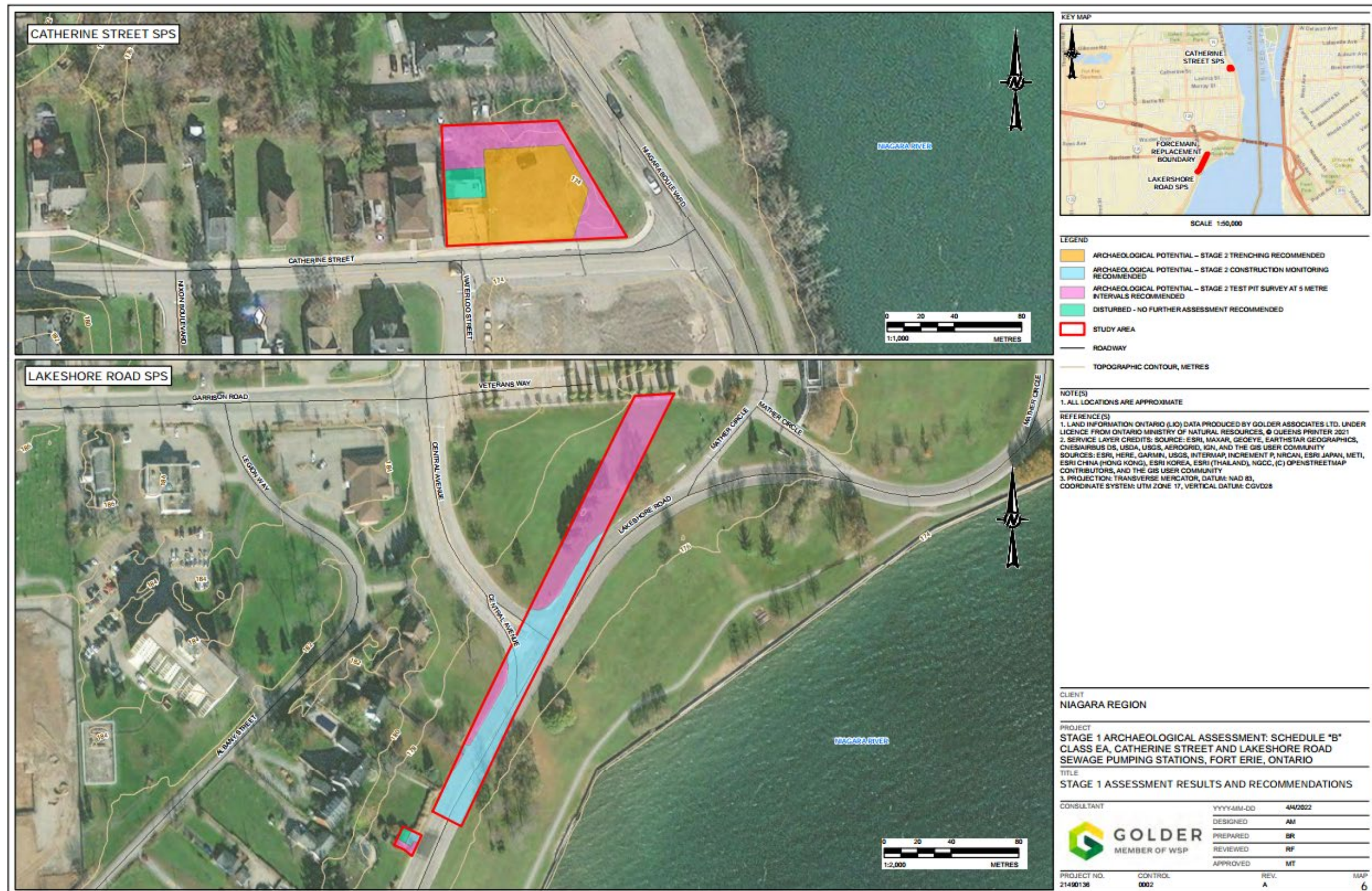


Figure 6-5 Stage 1 Archaeological Assessment Findings

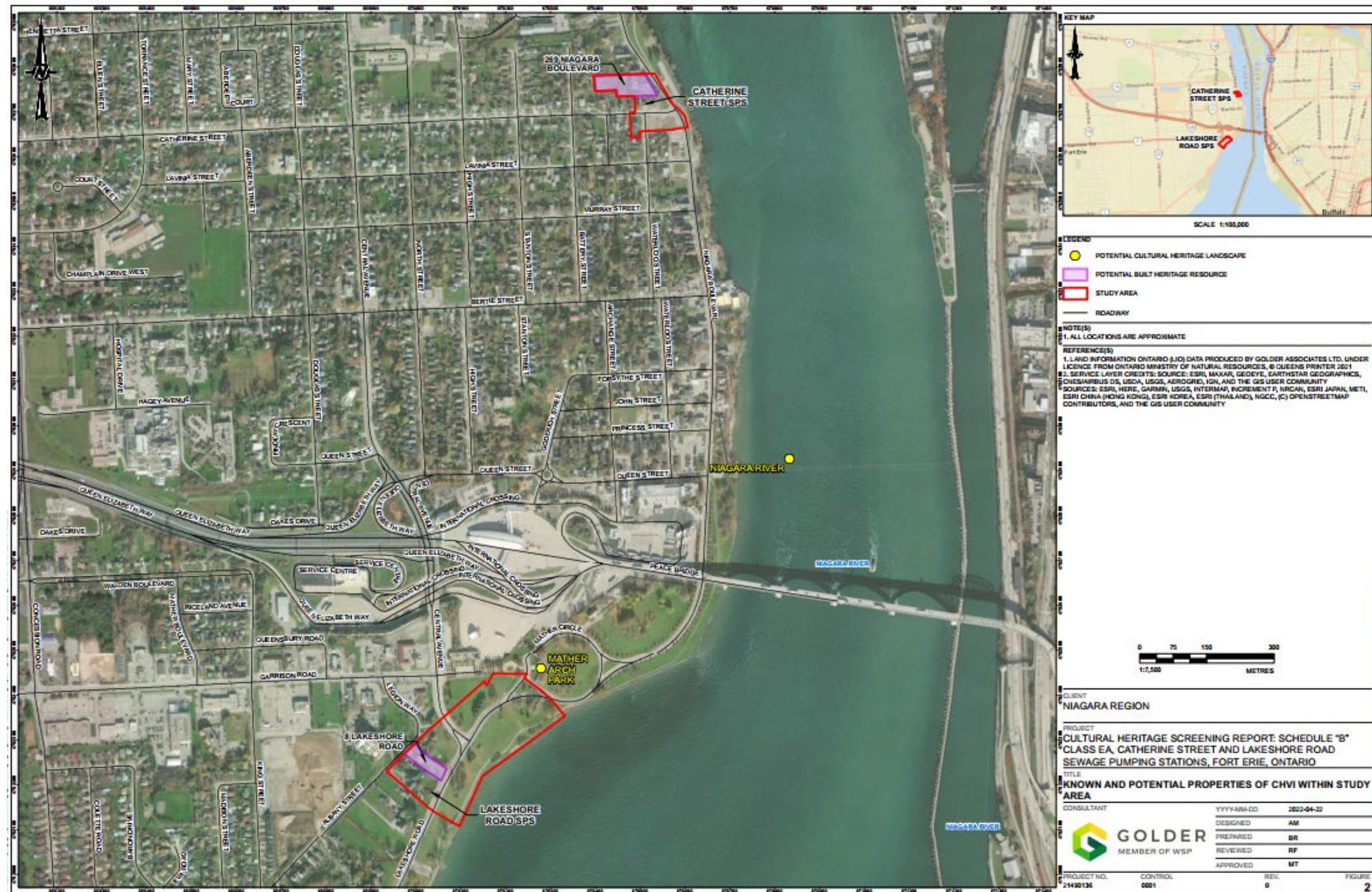


Figure 6-6 Known and Potential Properties with Cultural Heritage Interest

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 was 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 alternative 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 in their current state (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 modifications or upgrades. Equipment and structures wouldn't 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 in their current state (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 with 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 in their current state (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 **Table 7-4** 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 as it will not support growth or maintain state of good repair.  (Does not satisfy)	The existing stations in their current states cannot continue to operate without significant repair or replacement.  (Does not satisfy)	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.  (Does not satisfy)	Screened out
2	Continue to operate both Lakeshore Road and Catherine Street SPSs in their current state (Status Quo)	Upgrades or replacement would support planned growth and capacity requirements and address the Problem / Opportunity Statement.  (Satisfies)	This approach is the same as existing, with two stations servicing the overall area, and therefore is feasible.  (Satisfies)	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.  (Satisfies)	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.  (Satisfies)	Several possible gravity sewer routes are available and technically feasible.  (Satisfies)	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.  (Satisfies)	Carried forward for development of alternative solutions

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
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. ✓ (Satisfies)	It is not technically feasible to convey flows toward the Anger Avenue WWTP by gravity. ✗ (Does not satisfy)	The anticipated cost for gravity sewer conveyance is anticipated to be very high and prohibitive. ✗ (Does not satisfy)	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. ✓ (Satisfies)	It is not technically feasible to convey flows toward the Anger Avenue WWTP by gravity alone. ✗ (Does not satisfy)	The anticipated cost for gravity sewer conveyance is anticipated to be very high and prohibitive. ✗ (Does not satisfy)	Screened out

Table 7-3 Long-list of Alternative Solutions – Servicing Strategy 2 (Continue to operate both Lakeshore Road and Catherine Street SPSs in their current state (Status Quo))

ID	Lakeshore Road SPS	Catherine Street SPS
i	Upgrade SPS at existing location - Upgrade mechanical, electrical, controls, and associated civil works - Maintain existing forcemain.	Upgrade SPS at existing location - Upgrade mechanical, electrical, controls, and associated civil works - Connect to existing forcemain.
ii	Upgrade SPS at existing location - Upgrade mechanical, electrical, controls, and associated civil works - Maintain existing forcemain.	Construct new Catherine Street SPS in adjacent empty lot - Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS. - Utilize existing 300 mm forcemain along Catherine Street. - Tie new Catherine Street SPS discharge to existing forcemain.
iii	Upgrade SPS at existing location with outdoor generator and new forcemain - Upgrade mechanical, electrical, controls, and associated civil works - Maintain existing control building and provide an exterior standby power generator. - Maintain the station as a submersible station with an above ground control panel and a packaged standby power generator. - Construct a new forcemain to suit increased pump capacity.	Construct new Catherine Street SPS in adjacent empty lot - Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS. - Utilize existing 300 mm forcemain along Catherine Street. - Tie new Catherine Street SPS discharge to existing forcemain.
iv	Upgrade and expand SPS at existing location Upgrade mechanical, electrical, controls, and associated civil works	Relocate to Forsythe Street Relocate Catherine Street SPS to vacant land at Forsythe Street and decommission existing Catherine Street SPS
v	Upgrade and expand pump station at existing Location (Lakeshore Rd) Upgrade mechanical, electrical/programming and associated civil works at existing location	Relocate Catherine Street SPS to the parkway southeast of the existing site Relocate Catherine Street SPS to vacant land along the Parkway and maintain Catherine Street SPS at existing lot until the new SPS is built and then begin decommissioning.
vi	Relocate Lakeshore Rd SPS west within vacant commercial property Relocate Lakeshore Road SPS to the vacant commercial lot west of Niagara Blvd while maintain Lakeshore Road SPS and then decommission after construction after new SPS is built	Relocate Catherine Street SPS to Forsythe St Relocate Catherine Street SPS to vacant land at Forsythe Street and maintain Catherine Street SPS at existing lot until the new SPS is built and then begin decommissioning.

ID	Lakeshore Road SPS	Catherine Street SPS
vii	Relocate Lakeshore Rd SPS south to residential property Relocate Lakeshore Road SPS to nearby vacant residential property along Lakeshore road while maintaining Lakeshore Road SPS and then decommission after construction of new SPS is built	Construct new Catherine Street SPS in adjacent empty lot Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS
viii	Relocate Lakeshore Road SPS north to the Niagara Parks Commission (NPC) Triangle Relocate Lakeshore Road SPS North to the NPC triangle at Lakeshore Road and Center Street	Construct new Catherine Street SPS in adjacent empty lot Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS
ix	Relocate Lakeshore Road SPS to the south of the Peace Bridge Relocate Lakeshore Road SPS to the south side of the Peace Bridge while maintaining Lakeshore Road SPS and then decommission after construction of new SPS	Construct new Catherine Street SPS in adjacent empty Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS
x	Relocate Lakeshore Road SPS to south vacant parking lot along Lakeshore Road Relocate Lakeshore Road SPS to the south vacant lot (Parking Lot) while maintaining Lakeshore Road SPS and then decommission after construction of new SPS	Construct new Catherine Street SPS in adjacent empty lot Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS

Table 7-4 Long-list of Alternative Solutions – Servicing Strategy 3 (Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS)

ID	Lakeshore Road SPS	Catherine Street SPS
i	Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore along the Niagara Boulevard to Forsythe Street	Relocate Catherine Street SPS to Forsythe Street Relocate Catherine Street SPS to vacant land at Forsythe Street and maintain Catherine Street SPS at existing lot until the new SPS is built and then begin decommissioning.
ii	Decommission Lakeshore Road SPS and utilize existing gravity sewer under the CBSA Plaza to Forsythe Street	Relocate Catherine Street SPS to Forsythe Street Relocate Catherine Street SPS to vacant land at Forsythe Street and maintain Catherine Street SPS at existing lot until the new SPS is built and then begin decommissioning.
iii	Decommission Lakeshore Road SPS and build new gravity sewer under the CBSA Plaza to Catherine Street Maintain bypass	Upgrade and expand SPS at existing location Upgrade mechanical, electrical/programming and associated civil works at existing location
iv	Decommission Lakeshore Road SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Boulevard to Catherine Street	Construct new Catherine Street SPS in adjacent empty lot Maintain Catherine Street SPS while constructing the new SPS in neighboring lot and then decommission the old Catherine Street SPS
v	Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore along the Niagara Boulevard to Gilmore Road	Construct new Catherine Street SPS within the Gilmore Lodge property Maintain Catherine Street SPS while constructing the new SPS and then decommission the old Catherine Street SPS

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 7-5**. Alternatives were either assigned a pass, fail or possible scoring which are symbolized and described below in **Table 7-6**. 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 7-5 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 7-6 Scoring Symbols and Descriptions

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

Table 7-7 Screening of Long-list of Alternative Solutions – Servicing Strategy 2 (Continue to operate both Lakeshore Road and Catherine Street SPSs in their current state (Status Quo))

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-i Lakeshore: Upgrade SPS at existing location Catherine: Upgrade SPS at existing location	Lakeshore Road SPS: - Reduced construction costs compared to building a new station with a control building. - Continued utilization of the existing sewer and forcemain infrastructure. - No need for new sewer along Niagara Boulevard. Catherine Street SPS: - The Region already owns existing lot - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to existing overflow structure.	Lakeshore Road SPS: - Lakeshore SPS site will still have access issues. - Continued operation and maintenance of the pumping station long term (compared to gravity solution). - Continued use and maintenance of the existing forcemain may not be feasible since it's experiencing frequent breaks. - May not be feasible to upgrade standby power generator inside the existing control building. - Limited construction laydown area, constructability challenges, and proximity to residents. Catherine Street SPS: - Unable to maintain service as upgrade is occurring at existing location - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Possible	 Pass	 Pass	Carried forward to detailed evaluation
2-ii Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Reduced construction costs compared to building a new station with a control building. - Continued utilization of the existing sewer and forcemain infrastructure. - No need for new sewer along Niagara Boulevard.	Lakeshore Road SPS: - Lakeshore Road SPS site will still have access issues. - Continued operation and maintenance of the pumping station long term (compared to gravity solution). - Continued use and maintenance of the existing forcemain may not be feasible since it is experiencing frequent breaks. - Limited construction laydown area, constructability challenges, and proximity to residents. - May not be feasible to upgrade standby power generator inside the existing control building.	 Possible	 Pass	 Pass	Carried forward to detailed evaluation

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-ii Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot	Catherine Street SPS: - The Region already owns adjacent lot at Catherine St. SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to existing overflow structure.	Catherine Street SPS: - Catherine Street SPS would be in a slightly more visible location (closer to Niagara Boulevard). - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Possible	 Pass	 Pass	Carried forward to detailed evaluation
2-iii Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Reduced construction costs compared to building a new station with a control building. - New forcemain will increase pumping capacity and provide long-term reliability. - Sufficient space is available to install an exterior standby power generator to meet increased loads. - No need for new sewer along Niagara Boulevard. - Maintaining control building will reduce impact to surrounding properties.	Lakeshore Road SPS: - Lakeshore Road SPS site will still have access issues. - Continued operation and maintenance of the pumping station long term (compared to gravity solution). - Limited construction laydown area, constructability challenges, and proximity to residents. - Exterior generator will occupy driveway space.	 Pass	 Pass	 Pass	Carried forward to detailed evaluation

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-iii Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain Catherine: Construct new Catherine Street SPS in adjacent empty lot	Catherine Street SPS: - The Region already owns adjacent lot at Catherine Street SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to existing overflow structure.	Catherine Street SPS: - Catherine Street SPS would be in a slightly more visible location (closer to Niagara Boulevard). - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Pass	 Pass	 Pass	Carried forward to detailed evaluation
2-iv Lakeshore: Upgrade SPS at existing location Catherine: Relocate to Forsythe Street	Lakeshore Road SPS: - Reduced construction costs compared to building a new station with a control building. - Continued utilization of the existing sewer and forcemain infrastructure. - No need for new sewer along Niagara Boulevard.	Lakeshore Road SPS: - Lakeshore Road SPS site will still have access issues. - Continued operation and maintenance of the pumping station long term (compared to gravity solution). - Continued use and maintenance of the existing forcemain may not be feasible since it is experiencing frequent breaks. - Limited construction laydown area, constructability challenges, and proximity to residents.	 Pass	 Fail	 Pass	Screened out

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-iv Lakeshore: Upgrade SPS at existing location Catherine: Relocate to Forsythe Street	Catherine Street SPS: - More "central" location between existing Catherine Street SPS site and Lakeshore Road SPS - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.	Catherine Street SPS: - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Utilizing alignment under CBSA Plaza is not feasible - Located in a tourist area and along Lakeshore Road (i.e., restaurants, businesses) - Higher operating costs for pumping due to longer forcemain along Catherine Street SPS. - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Pass	 Fail	 Pass	Screened out
2-v Lakeshore: Upgrade pump station at existing location Catherine: Relocate Catherine Street SPS to the Parkway Southeast of Existing Site	Lakeshore Road SPS: - Reduced construction costs compared to building a new station with a control building. - New forcemain will increase pumping capacity and provide long-term reliability. - No need for new sewer along Niagara Boulevard. Catherine Street SPS: - More "central" location between existing Catherine Street SPS site and Lakeshore Road SPS - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.	Lakeshore Road SPS: - Lakeshore Road SPS site will still have access issues. - Continued operation and maintenance of the pumping station long term (compared to gravity solution). - Limited construction laydown area, constructability challenges, and proximity to residents. Catherine Street SPS: - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Land location is along the waterfront	 Pass	 Fail	 Pass	Screened out

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-vi Lakeshore: Relocate Lakeshore Road SPS West Within Vacant Commercial Property Catherine: Relocate Catherine Street SPS to Forsythe Street	Lakeshore Road SPS: - Commercial lot already has development on it (therefore mitigating some environmental concerns) - Avoids residential restate area - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed. Catherine Street SPS: - More "central" location between existing Catherine Street SPS site and Lakeshore Road SPS - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost.	Lakeshore Road SPS: - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Utilizing alignment under CBSA Plaza is not feasible Catherine Street SPS: - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Utilizing alignment under CBSA Plaza is not feasible - Located in a tourist area and along Lakeshore (i.e., restaurants, businesses) - Higher operating costs for pumping due to longer forcemain along Catherine Street SPS. - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Pass	 Fail	 Pass	Screened out

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-vii Lakeshore: Relocate Lakeshore Road SPS South to Residential Property Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - New station can be constructed offline with minimal impact to existing operations. - Space availability for construction laydown. - Minimal sewer work along Lakeshore Road, and utilization of existing sewer network. Catherine Street SPS: - The Region already owns adjacent lot at Catherine Street SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to existing overflow structure.	Lakeshore Road SPS: - Land is still within residential area. - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Construction of a new relief bypass point. May have regulatory delays/implications. - New Gravity Sewer: - Traffic impact along Lakeshore Road to construction gravity sewer and forcemain extension (150 m). - Limited ability to store flows within the new gravity sewer. Catherine Street SPS: - Catherine Street SPS would be in a slightly more visible location (closer to Niagara Boulevard). - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	✓ Pass	✓ Pass	✓ Pass	Carried forward to detailed evaluation

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-viii Lakeshore: Relocate Lakeshore Road SPS North to the NPC Triangle Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Site is closer to the Catherine Street SPS location - Allows for the Lakeshore Road SPS to be online during the construction at the new location Catherine Street SPS: - The Region already owns adjacent lot at Catherine Street SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to exiting overflow structure	Lakeshore Road SPS: - Land is still within residential area. - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Construction of a new relief bypass point. May have regulatory delays/implications Catherine Street SPS: - Catherine Street SPS would be in a slightly more visible location (closer to Niagara Boulevard). - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	✓ Pass	✓ Pass	✗ Fail	Screened out

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-ix Lakeshore: Relocate Lakeshore Road SPS to the south of the Peace Bridge Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Site is closer to the Catherine Street SPS Location, thereby reducing the length of force main. - Allows for the Lakeshore Road SPS to be online during the construction at the new location Catherine Street SPS: - The Region already owns adjacent lot at Catherine Street SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to exiting overflow structure	Lakeshore Road SPS: - Land is still within residential area. - Require upgrade of sewer infrastructure. - Requires procurement of land, which could post implementation challenges compared to other alternatives where land is already owned by Region - Construction of a new relief bypass point. May have regulatory delays/implications Catherine Street SPS: - Catherine SPS would be in a slightly more visible location (closer to Niagara Boulevard). - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard., leading to additional cost.	✓ Pass	✓ Pass	✗ Fail	Screened out

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Result
2-x Lakeshore: Relocate Lakeshore Road SPS to south vacant parking lot along Lakeshore Road Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - New station can be constructed offline with minimal impact to existing operations. - Space availability for construction laydown. - Minimal sewer work along Lakeshore Road, and utilization of existing sewer network. Catherine Street SPS: - The Region already owns adjacent lot at Catherine Street SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to exiting overflow structure	Lakeshore Road SPS: - 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 - Construction of a new relief bypass point. May have regulatory delays/implications. New Gravity Sewer: - Traffic impact along Lakeshore Road to construct gravity sewer and forcemain extension (150 m). - Limited ability to store flows within the new gravity sewer. Catherine Street SPS: - Catherine SPS would be in a slightly more visible location (closer to Niagara Blvd). - May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.	✓ Pass	✓ Pass	✓ Pass	Carried forward to detailed evaluation

Table 7-8 Screening of Long-list of Alternative Solutions – Servicing Strategy 3 (Decommission Lakeshore Road SPS and continue to operate Catherine Street SPS)

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Results
3-i Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore Road along the Niagara Boulevard to Forsythe Street Catherine: Relocate Catherine Street SPS to Forsythe Street	Lakeshore Road SPS: - Elimination of maintenance and operation of a pump station. Long term cost savings. - Addresses current site access and safety issues. - Possible to address resident complaints. Enhanced overall curb appeal along Lakeshore Road. New Gravity Sewer and Forcemain: - New sewer can be sized to include storage for wet weather flows. Catherine Street SPS (Forsythe Street) - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed. Catherine Street SPS (Forsythe Street): - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.	Lakeshore Road SPS: - Elimination of existing pumped overflow relief currently at Lakeshore SPS. New Gravity Sewer and Forcemain: - Requires approvals for sewer along Niagara Blvd (CBSA, MECP, NPC) - Construction costs for over 2 km of sewer and partial forcemain work with excavation in rock. - Extended construction duration due to slow excavation in rock. - Traffic impacts along Niagara Boulevard, possible impact to tourist traffic/activities Catherine Street SPS (Forsythe Street): - Requires procurement of land - Located in a tourist area and along Lakeshore Road (i.e., restaurants, businesses) - Higher operating costs for pumping due to longer forcemain along Catherine Street SPS. - May require special architectural and/or landscape considerations due to proximity to Niagara Blvd., leading to additional cost.	 Pass	 Pass	 Possible	Carried forward to detailed evaluation

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Results
3-ii Lakeshore: Decommission Lakeshore Road SPS and utilize existing gravity sewer under the CBSA Plaza to Forsythe Street Catherine: Relocate Catherine Street SPS to Forsythe Street	Lakeshore Road SPS: - Permits the decommissioning of Lakeshore Rd SPS - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed - Allows for the decommissioning of Lakeshore SPS and eliminates site access and safety concerns Catherine Street SPS (Forsythe Street): - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - New lot will allow construction to occur while maintaining service at the existing location until the new station has been constructed.	Lakeshore Road SPS: - Potentially deep excavation will be required to accommodate gravity sewer under CBSA Plaza - Additional maintenance concerns - Requires additional approvals Catherine Street SPS (Forsythe Street): - Requires procurement of land - Located in a tourist area and along Lakeshore Road (i.e., restaurants, businesses) - Higher operating costs for pumping due to longer forcemain along Catherine Street SPS. - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Fail	 Fail	 Fail	Screened out
3-iii Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer under the CBSA Plaza to Catherine Street Catherine: Upgrade and expand pump station at existing locations (Catherine)	Lakeshore Road SPS: - Decommission Lakeshore Road SPS and resolves site access and safety concerns - Ability for extra in-line storage - Ability to convert existing station into a wet well for extra layer of safety	Lakeshore Road SPS: - Potentially deep excavation will be required to accommodate gravity sewer under CBSA Plaza - Additional maintenance concerns - Requires additional approvals - Long gravity sewer length would be required - Existing sewer alignment under the CBSA Plaza is not feasible (i.e., not deep enough)	 Pass	 Fail	 Fail	Screened out

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Results
3-iii Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer under the CBSA Plaza to Catherine Street Catherine: Upgrade and expand pump station at existing locations (Catherine)	Catherine Street SPS: - The Region already owns existing lot - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to existing overflow structure.	Catherine Street SPS: - Unable to maintain service as upgrade is occurring at existing location - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Pass	 Fail	 Fail	Screened out
3-iv Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Boulevard to Catherine Street Catherine: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Elimination of maintenance and operation of a pump station. Long term cost savings. - Addresses current site access and safety issues. - Possible to address resident complaints. Enhanced overall curb appeal along Lakeshore Road. New Gravity Sewer - New sewer can be sized to include storage for wet weather flows.	Lakeshore Road SPS: - Elimination of existing pumped overflow relief currently at Lakeshore Road SPS. New Gravity Sewer: - Requires approvals for sewer along Niagara Blvd (CBSA, MECP, NPC) - Construction costs for almost 2 km of sewer with excavation in rock (minimal forcemain tie-in). - Extended construction duration due to slow excavation in rock. - Traffic impacts along Niagara Boulevard possible impact to tourist traffic/activities.	 Pass	 Pass	 Possible	Carried forward to detailed evaluation

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Results
3-iv Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Boulevard to Catherine Street Catherine: Construct new Catherine Street SPS in adjacent empty lot	Catherine Street SPS: - The Region already owns adjacent lot at Catherine Street SPS, hence no land acquisition required. - Lot does not require demolition of any infrastructure or vegetation removal, which reduces construction cost. - Adjacent lot at Catherine Street SPS will allow construction to occur while maintaining service at the existing location until the new station has been constructed. - An upgrade will allow for any design considerations to help mitigate odour concerns. - May allow for connection to existing overflow structure.	Catherine Street SPS: - Catherine Street SPS would be in a slightly more visible location (closer to Niagara Boulevard). - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost.	 Pass	 Pass	 Possible	Carried forward to detailed evaluation

Long-Listed Alternative	Advantages	Disadvantages	Effectiveness and Reliability	Compatibility with Existing System	Implementation Challenges	Screening Results
3-v Lakeshore: Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore along the Niagara Blvd to Gilmore Road Catherine: Construct new Catherine Street SPS within the Gilmore Lodge property	Lakeshore Road SPS: - Elimination of maintenance and operation of a pump station. Long term cost savings. - Addresses current site access and safety issues. - Possible to address resident complaints. Enhanced overall curb appeal along Lakeshore Road. New Gravity Sewer: - New sewer can be sized to include storage for wet weather flows. Long sewer line maximizes storage. Catherine Street SPS: (Gilmore) - Away from residents and core tourist area.	Lakeshore Road SPS: - Elimination of existing pumped overflow relief currently at Lakeshore Road SPS. New Gravity Sewer: - Requires approvals for sewer along Niagara Boulevard (CBSA, MECP, NPC) - 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. - New 300 mm forcemain required. Length approx. 200 m. - Extended construction duration due to slow excavation in rock. - Traffic impacts along Niagara Boulevard possible impact to tourist traffic/activities. - May require a new overflow point. Catherine Street SPS (Gilmore): - Very deep station in rock due to long gravity sewer. - Construction of a new 200 m long forcemain. Decommissioning of a relatively new forcemain along Catherine Street SPS. - High pumping costs to the high static lift. - May require special architectural and/or landscape considerations due to proximity to Niagara Boulevard leading to additional cost. - Requires land acquisition. - Requires demolition of existing infrastructure.	 Pass	 Fail	 Fail	Screened out

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 7-9**. 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 7-9 Summary of Short-Listed Alternatives

Long-List Alternative ID	Short-Listed Alternative ID for Detailed Evaluation	Description	Technical Details
2-i	A	Lakeshore Road SPS: Upgrade SPS at existing location Catherine Street SPS: Upgrade SPS at existing location	Lakeshore Road SPS: • New 250 mm diameter, 287 m long PVC forcemain. • Forcemain construction anticipated to be entirely by open cut. • 101 L/s station firm capacity. • Two submersible pumps; one duty and one standby. Pumps to operate on VFDs. • Area of site is 153 m². Catherine Street SPS: • Existing 300 mm diameter, 165 m long PVC forcemain to be reused. • 190 L/s station firm capacity to meet build out flows. • Area of site is 334 m².
2-ii	B	Lakeshore Road SPS: Upgrade SPS at existing location Catherine Street SPS: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: • New 250 mm diameter, 287 m long PVC forcemain. • Forcemain construction anticipated to be entirely by open cut. • 101 L/s station firm capacity • Two submersible pumps; one duty and one standby. Pumps to operate on VFDs. • Area of site is 153 m². Catherine Street SPS: • Extend existing forcemain east by approx. 25 m to relocated pump station on adjacent empty lot. • Forcemain extension will be 300 mm diameter PVC. • Construction of forcemain extension will likely be by open cut. • 190 L/s station firm capacity to meet build out flows. • Area of site is 964 m².

Long-List Alternative ID	Short-Listed Alternative ID for Detailed Evaluation	Description	Technical Details
2-iii	C	Lakeshore Road SPS: Upgrade SPS at existing location with outdoor generator and new forcemain Catherine Street SPS: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - New 250 mm diameter, 287 m long PVC forcemain. - Forcemain construction anticipated to be entirely by open cut. 101 L/s station firm capacity. - Two submersible pumps; one duty and one standby. Pumps to operate on VFDs. - Area of site is 153 m². Catherine Street SPS: - Extend existing forcemain east by approx. 25 m to relocated pump station on adjacent empty lot. - Forcemain extension will be 300 mm diameter PVC. - Construction of forcemain extension will likely be by open cut. 190 L/s station firm capacity to meet build out flows. - Area of site is 964 m².
3-i	D	Lakeshore Road SPS: Decommission Lakeshore Road SPS and build new gravity sewer from Lakeshore Road along the Niagara Boulevard to Forsythe Street Catherine Street SPS: Relocate Catherine Street SPS to Forsythe Street	Lakeshore Road SPS: - Station decommissioned and replaced by new 1.3 km long gravity sewer from Lakeshore Rd catchment along Niagara Blvd to new Catherine St. SPS location on Forsythe Street. - Construction of new gravity sewer likely to be by open cut but trenchless methods may also be considered. Catherine Street SPS: - Extend new forcemain approx. 0.7 km from new Forsythe St. location along Niagara Blvd. to Catherine St. and connect to existing 300 mm forcemain on Catherine St. - New forcemain will be 300 mm diameter PVC. - Forcemain construction likely to be by open cut but trenchless methods may also be considered. - Direct flows from Catherine St. SPS catchment via new 0.7 km long gravity sewer from Catherine St. along Niagara Blvd to new Forsythe St. location. - Gravity sewer construction likely to be by open cut but trenchless methods may also be considered. 190 L/s station firm capacity to meet build out flows. - Area of site is 1483 m².

Long-List Alternative ID	Short-Listed Alternative ID for Detailed Evaluation	Description	Technical Details
3-iv	E	Lakeshore Road SPS: Decommission Lakeshore Road SPS and build new gravity sewer from the current location of the Lakeshore Road SPS along the Niagara Boulevard to Catherine Street Catherine Street SPS: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Station decommissioned and replaced by new 2.0 km long gravity sewer from Lakeshore Rd catchment along Niagara Blvd to relocated Catherine St. SPS in adjacent empty lot on Catherine St. - Construction of gravity sewer likely to be by open cut but trenchless methods may also be considered. Catherine Street SPS: - Extend existing forcemain east by approx. 25 m to relocated pump station on adjacent empty lot. - Forcemain extension will be 300 mm diameter PVC. - Construction of forcemain extension will likely be by open cut. 190 L/s station firm capacity to meet build out flows. - Area of site is 964 m²
2-vii	F	Lakeshore Road SPS: Relocate Lakeshore Road SPS South to Residential Property Catherine Street SPS: Construct new Catherine Street SPS in adjacent empty lot	- Lakeshore Road SPS: - Extend new 250 mm diameter forcemain an additional 150 m south along Lakeshore Rd to residential property on west side of Lakeshore Road. Total length of new forcemain equals 437 m. - Construction of new forcemain including additional 150 m anticipated to be entirely by open cut. - Extend existing gravity sewer south along Lakeshore Rd from existing pump station location to new pump station site at residential property on west side of Lakeshore Rd. - Construction of extended gravity sewer likely to be by open cut. 101 L/s station firm capacity - Two submersible pumps; one duty and one standby. Pumps to operate on VFDs. - Area of site is 9,350 m². Catherine Street SPS: - Extend existing forcemain east by approx. 25 m to relocated pump station on adjacent empty lot. - Forcemain extension will be 300 mm diameter PVC. - Construction of forcemain extension will likely be by open cut. 190 L/s station firm capacity to meet build out flows. - Area of site is 964 m²

Long-List Alternative ID	Short-Listed Alternative ID for Detailed Evaluation	Description	Technical Details
2-x	G	Lakeshore Road SPS: Relocate Lakeshore Road SPS to south vacant parking lot along Lakeshore Road Catherine Street SPS: Construct new Catherine Street SPS in adjacent empty lot	Lakeshore Road SPS: - Extend new 250 mm diameter forcemain an additional 150 m south along Lakeshore Rd to the vacant parking lot on east side of Lakeshore Road. Total length of new forcemain equals 437 m. - Construction of new forcemain including additional 150 m anticipated to be entirely by open cut. - Extend existing gravity sewer from existing pump station site south along Lakeshore Rd to new site at vacant parking lot on east side of Lakeshore Rd. - Construction of extended gravity sewer likely to be by open cut. 101 L/s station firm capacity - Two submersible pumps; one duty and one standby. Pumps to operate on VFDs. - Area of site is 1061 m². Catherine Street SPS: - Extend existing forcemain east by approx. 25 m to relocated pump station on adjacent empty lot. - Forcemain extension will be 300 mm diameter PVC. - Construction of forcemain extension will likely be by open cut. 190 L/s station firm capacity to meet build out flows. - Area of site is 964 m²



Figure 7-1 Alternative A



Figure 7-2 Alternative B and 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, ease of operations, redundancy, compatibility with existing infrastructure, hydrogeology and geotechnical impacts and climate change adaptability.
- **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 7-10** to **Table 7-13** below.

Table 7-10 Environmental Sub-Criteria for Evaluation

Sub-Category Criteria	Rationale / Indicators
Terrestrial System	• 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.
Aquatic System	• Potential of the solution to impact aquatic habitats or systems, including possible impacts on aquatic life and species at risk features/ functions.
Groundwater Quality and Quantity	• Potential of the solution to impact the quality and quantity of groundwater.

Table 7-11 Social and Cultural Sub-Criteria for Evaluation

Sub-Category Criteria	Rationale / Indicators
Odour	The potential of the solution to generate odour concerns (post-construction).
Visual/Aesthetics	The potential of the solution to impact the scenic attributes of the community and surrounding areas (post-construction).
Disruption During Construction	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.
Property Acquisition and Easement Requirements	The extent to which property acquisition or easements are required to implement the solution.
Existing and Future Land Use Compatibility	The extent to which the solution fits in with the existing land and future planned land uses in the area.
Archaeology/ Built Cultural Heritage	The potential of solution to impact any archaeological sites and/ or significant/ natural heritage areas, including the potential to address Indigenous Community interests.

Table 7-12 Technical Sub-Criteria for Evaluation

Sub-Category Criteria	Rationale / Indicators
Long-term flexibility	The ability of the solution to meet future demands beyond 2041.
Ease of Operation	The solutions relative complexity as it relates to operation and maintenance of the Region's wastewater collection/treatment system.
Redundancy	Ability for the sewer network to provide extra storage for wet weather flow and for emergency situations.
Compatibility with existing infrastructure	The ability of the solution to be compatible with the existing sewer network and its infrastructure.
Geotechnical and Hydrogeology	The extent of potential geotechnical challenges and impact to hydrogeology as related to the infrastructure during and post construction.
Climate Change Adaptability (CSO and Wet Weather)	The ability of the solution to adapt to climate change impacts (i.e., wet weather flow, severe events/basement flooding, higher Lake levels).
Permits and Approvals	Ease of receiving permits and approvals, including the agency approvals necessary.

Table 7-13 Economic Sub-Criteria for Evaluation

Sub-Category Criteria	Rationale / Indicators
Capital Cost	MCEA level capital cost estimates to provide a relative comparison of solutions.
Lifecycle Cost	Estimated lifecycle costs over a 50 year period including: initial construction, operation, maintenance, and equipment replacement.

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 7-14**, 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 7-15** and further details of the evaluation are provided in **Appendix E**.

Table 7-14 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 7-15 Summary of Evaluation Criteria and Scoring Rationale for Short Listed Alternatives

Alternative	Environmental Factors	Social and Cultural Factors	Technical Factors	Economic Factors
Alternative A – Upgrade Lakeshore Road SPS and Catherine Street SPS at existing locations and property footprints Least Preferred Alternative	- Minimal environmental impacts to aquatic system and groundwater - Moderate potential impacts to terrestrial habitats 	- Minimal archaeological and natural heritage impacts - Compatible with existing land use as no property acquisitions will be required - Impacts to adjacent landowners during construction 	- 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 due to maintaining existing forcemain - Upgraded standby power generator may not be feasible to be installed inside existing control room 	- Lowest capital costs - Lowest lifecycle costs 
Alternative B – Upgrade both stations, Lakeshore Road SPS at existing site and move Catherine Street SPS to adjacent lot to the east Least Preferred Alternative	- Minimal impacts to surrounding aquatic systems and groundwater due to short sewer length - Moderate impacts to terrestrial impacts 	- 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 	- 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 - Improved climate change adaptability (Catherine St. SPS only) - Restricted climate change adaptability due to maintaining existing forcemain - Upgraded standby power generator may not be feasible to be installed inside existing control room 	- Low capital costs - Low lifecycle costs 

Alternative	Environmental Factors	Social and Cultural Factors	Technical Factors	Economic Factors
Alternative C – Upgrade Lakeshore Road SPS with exterior generator and new forcemain. Construct new Catherine Street SPS at adjacent lot to the east Preferred Alternative	- Minimal environmental impacts to aquatic system and groundwater - Moderate potential impacts to terrestrial habitats or systems 	- Compatible with existing land use as no property acquisitions will be required - Reduced impacts to adjacent landowners during construction - Moderate aesthetic impact as exterior generator will be visible from Lakeshore Road SPS while control building will provide a visual barrier to adjacent properties from the back - Potential impacts to archaeological and natural heritage sites 	- Ability to meet future flows - No challenges to obtaining permits and approvals - Compatible with existing infrastructure - Improved operations and maintenance and maximized use of existing assets. - Improved climate change adaptability by increasing pumping and transmission capacity and overall system reliability. 	- Low capital costs - Low lifecycle costs 
Alternative D – 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 Least Preferred Alternative	- Moderate to severe impacts to aquatic system and groundwater due to sewer length - Severe potential for impacts to terrestrial impacts 	- Addresses odour and aesthetics issues - Impacts to adjacent landowners during construction - Requires purchasing of land - Moderate to severe impacts to archaeological and natural heritage sites 	- 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 	- High capital costs - High lifecycle costs 

Alternative	Environmental Factors	Social and Cultural Factors	Technical Factors	Economic Factors
Alternative E – Decommission Lakeshore Road SPS and gravity sewer along Lakeshore Road / Niagara Boulevard. Relocate Catherine Street SPS to adjacent east lot Least Preferred Alternative	- Moderate impacts to aquatic system and groundwater - Moderate impacts to existing terrestrial habitats 	- 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 archaeological and natural heritage sites 	- 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 hydrology impacts - Not compatible with existing infrastructure 	- Moderate capital costs - Moderate lifecycle costs 
Alternative F – Relocate Lakeshore Road SPS to south vacant property (west of Lakeshore Road) and relocate Catherine Street SPS to adjacent lot to the east Least Preferred Alternative	- Minimal environmental impacts to aquatic system - Moderate potential impacts to terrestrial habitat and groundwater 	- Addresses odour issues - Moderate impacts to adjacent landowners during construction - Requires purchasing of land - Severe impacts to archaeological and natural heritage sites 	- Ability to meet future flows demands - Ability to meet future redundancy and adaptability to climate change impacts - Compatible with the existing infrastructure - Potential challenges including obtaining permits and approvals - Moderate potential for maintenance issues - Moderate geotechnical and hydrology impacts 	- Moderate capital costs - Moderate lifecycle costs 

Alternative	Environmental Factors	Social and Cultural Factors	Technical Factors	Economic Factors
Alternative G – Relocate Lakeshore Road SPS to south vacant property (east of Lakeshore Road). Relocate Catherine Street SPS to adjacent east lot Least Preferred Alternative	- Minimal environmental impacts to aquatic system - Moderate potential impacts to terrestrial habitat and groundwater 	- Addresses odour issues - Moderate impacts to adjacent landowners during construction - Requires purchasing of land - Severe impacts to archaeological and natural heritage sites 	- Ability to meet future flow 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 	- Moderate capital costs - Moderate lifecycle costs 

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 7-14** below.

Table 7-16 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
Alternative A – Upgrade Lakeshore Road SPS and Catherine Street SPS at existing locations and property footprints.	\$ 5.3M	\$ 13.6M
Alternative B – Upgrade both stations, Lakeshore Road SPS at existing site and move Catherine Street SPS to adjacent lot to the east.	\$ 7.2M	\$ 16.0M
Alternative C – Upgrade Lakeshore Road SPS at existing location with outdoor generator and new forcemain. Construct new Catherine Street SPS at adjacent lot.	\$ 7.7M	\$ 16.4M
Alternative D – 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
Alternative E – Decommission Lakeshore and gravity sewer along Lakeshore Road / Niagara Boulevard. Relocate Catherine Street SPS to adjacent east lot.	\$ 10.6M	\$ 17.9M
Alternative F – 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

Alternative	Estimated Construction Capital Cost	Present Value of Estimated Total Lifecycle Costs over a 50 year Period
Alternative G – 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 Road SPS at existing location with outdoor generator and construct new Catherine Street SPS at adjacent lot. The Catherine Street SPS alternative will include a minor extension of a 300 mm PVC forcemain to the relocated SPS on adjacent empty lot using open cut construction methods and 190 L/s station firm capacity to meet buildout flows

The detailed design for the Catherine Street SPS is anticipated to start in 2023 and construction to commence in 2024. It should be noted that this timeline is only preliminary due to the unpredictability of supply chains, delivery issues with major equipment and pending results of the proceeding archeological investigations.

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 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 Regional owned property to the east 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 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 Catherine Street SPS site. Mitigation measures that the Region will employ are detailed in **Table 8-1** and **Table 8-2**.

8.1 Noise, Odour, and Air Quality

Noise, odour and air quality considerations of the final solution were considered, and design elements and construction techniques are recommended to mitigate impacts, including buffers, emission controls, and a construction staging plan.

All of the construction associated with the recommended solution will occur within the existing site boundary and adjacent lot to the east, which is adjacent to potential sensitive receptors such as residential properties.

8.2 Excess Materials Management

Ontario Regulation 406/19 and the associated Soil Rules (MECP, 2020) document lay out requirements for the management of excess soil materials from construction projects. Though the Regulation and the Soil Rules impose some general due-diligence requirements that apply to most projects, there are additional soil management planning tasks that may be required depending on whether the project meets certain exemption criteria listed in Schedule 2 of the Regulation.

Due to the proposal to install a minor extension of the forcemain and construct a new sewage pumping station, it is expected that some quantity of excess soils will be generated. For the purposes of this assessment, it is assumed that more than 100 m³ of soil will ultimately be removed from the project area during construction of the preferred alternative.

As an infrastructure project which includes a sewage pumping station within its Project Area, the regulatory status (i.e., exemption status) of the proposed Catherine Street SPS project will be dependent upon the destination of the excess soil.

If the destination of the soil cannot be determined, or if it is known that not all of the soil will be taken to another infrastructure site for reuse, then it is recommended that the project proceed assuming that it will have to file notice to the Excess Soil Registry. This in turn would require the

preparation of certain reports (e.g. the Assessment of Past Uses Report, Sampling and Analysis Plan, Soil Characterization Report, Excess Soil Destination Assessment Report) to the standards specified in the Soil Rules. Detailed tracking of soil loads (i.e., transfers from the project area to other off-site locations) during construction will also be required. The project plan should include for the completion of these requirements, as applicable.

However, if the soil is taken for reuse at another infrastructure project site, then the project may qualify for an exemption from having to file notice to the Excess Soil Registry, which in turn would also qualify for an exemption from the preparation of the above-noted reports as well as exemption from the load tracking requirement. In this case, it is recommended that some level of due diligence investigation and soil quality sampling be conducted to confirm the general quality of the soil and screen for potential gross impacts whose presence and subsequent handling could have a significant effect on project budgets.

8.3 Source Water Protection

Under the Clean Water Act and the Source Protection Plan for the Niagara Peninsula Source Protection Area (Niagara Peninsula Conservation Authority, 2014), it is necessary to ensure that proposed developments adhere to or are constructed in accordance with the applicable local policies for the protection of municipal water supplies.

With respect to the types of vulnerable areas that are most relevant to municipal drinking water supplies, the existing Catherine Street SPS, the proposed site for the relocation of the Catherine SPS, and the proposed forcemain route are not located within a Wellhead Protection Area or Intake Protection Zone.

As such, the Source Protection Plan contains no particular policies applicable to the relocation of the Catherine Street SPS or the construction of the associated forcemain.

8.4 Archaeological and Built/Cultural Heritage Resources

As mentioned in Section 6, a Stage 1 archaeological assessment was completed for the study area of the Catherine Street SPS. The results showed that areas within the Catherine Street 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 is currently continuing this investigation as a Stage 2 archaeological assessment is underway. First Nation communities will be contacted 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.

8.5 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.

8.6 Water Courses

An erosion and sediment control plan will be developed during the design stage 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 also proposed prior to the detailed design to analyse the anticipated soil conditions and construction dewatering requirements. Mitigation measures are described in **Table 8-1** and **Table 8-2**, and will be updated once the geotechnical and hydrogeological investigations are completed.

8.7 Traffic Management

Construction of the preferred alternative will impact traffic along Catherine Street, Niagara Boulevard and surrounding areas. **Table 8-1** and **Table 8-2** 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.

8.8 Utilities

The recommended solution for the Catherine Street SPS comprises of 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.

8.9 Cultural Heritage Resources and Landscapes

As discussed in **Section 6**, there are several areas within the Catherine Street SPS study area that have Cultural Heritage Value or Interest (CHVI), which include the following:

- One (1) property with buildings or structures 40 or more years old of potential CHVI at 269 Niagara Boulevard
- One (1) potential landscape with CHVI: The Niagara River

Mapping of these landscapes and properties can be found on **Figure 6-6**. Due to the existence of potential built heritage resources and cultural heritage landscapes near the preferred solution, the Region will be completing Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (CHR) prior to detailed design to:

- 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.

8.10 Private Property Access

Access to residential properties may be required during the construction of the Catherine Street as the immediate properties surrounding the site are residential properties. Mitigation measures for potential disruption are detailed in **Table 8-1** and **Table 8-2**.

8.11 Climate Change

Consideration of climate change was incorporated into the study during the assessment of alternative solutions. This was done through evaluating and rating all the alternatives' ability to adapt to climate change impacts, which is further outlined and defined in **Section 7.7**. It was determined that the preferred solution has improved climate change adaptability through its' ability to increase pumping and transmission capacity and overall system reliability.

As it is expected that the preferred solution will produce greenhouse gas emissions throughout its' lifecycle, the conceptual design of the Catherine Street SPS will further investigate and determine the best mitigation solutions to help reduce such environmental impacts. Further through detailed design additional climate change considerations will be given to reduce and plan for climate change impacts in the future and where possible apply energy savings, etc.

Table 8-1 Impact and Mitigation Measures for the Design Phase

Category and Impact	Mitigation Measure
Category: Noise, Odour, Air Quality (Operation) Impact: Everyday noise from operation of the SPS	• Ensure a detailed Odour Control Plan is prepared and submitted to the MECP West Central Support Section for review and approval during detailed design. • Employ a noise and dust control strategy to reduce emissions. • Ensure adequate landscaping buffer between SPS site and surrounding receptors to reduce noise. • 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. • Develop a construction staging plan to minimize community disruption. • Complete a noise assessment to determine noise impacts and mitigation measures from the outdoor generator (post-construction)
Category: Excess Materials Management Impacts: Excess soil materials from construction of SPS	• File a notice to the Excess Soil Registry, compete reports to standards specified in the Soil Rules and detailed tracking of soil loads, as required • Investigate and conduct soil quality sampling to confirm the general quality of the soil and screen for potential gross impacts whose presence and subsequent handling could have a significant effect on project budgets.
Category: Natural Heritage Features Impacts: Construction impacts to surrounding trees/vegetation and breeding birds	• 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. • 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. • Trees located on NPC lands are to follow Niagara Parks tree protection plan standards.
Category: Water Course (Niagara River) Impacts: Associated impacts to the Niagara River and associated fish habitat and risk of sedimentation, and potential decrease water quality as a result of dewatering into the Niagara River <i>*Anticipated soil conditions and dewatering impacts will be determined/ analyzed during geotechnical and hydrogeological investigations</i>	• Develop an Erosion and Sediment Control Plan to minimize impacts to the Niagara River, associated fish habitat and minimize risk of sedimentation. • Erosion and Sediment control plan to be reviewed and approved by NPC. • Develop a contamination and spill management response plan in the event of a sediment release or spill of a hazardous substance. • 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: ○ Implement measures for managing water being pumped/diverted from excavations such that sediment is filtered out prior to the water entering a waterbody ○ 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 ○ Include dewatering discharge points on the final Erosion and Sedimentation Control Plans for the project
Category: Cultural Heritage Properties and Landscapes Impacts: Direct and or indirect impact to CHVI properties and landscapes	• 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. • Identification and evaluation of NPC lands and facilities will be in accordance with NPC's Heritage Conservation policy processes.

Table 8-2 Impact and Mitigation Measures for the Construction Phase

Category and Impact	Mitigation Measure
Category: Noise, Odour and Air Quality Impact: Noise and dust as a result of construction to nearby residential properties	• Use low noise equipment during construction, where possible. • Restrict working hours for construction, in accordance with local Noise Control By-laws. • Use of non-chloride dust suppressants be applied during construction • Ensure Odour Control Plan is delivered during construction and operation of recommended projects
Category: Excess Materials Management Impact: Excess materials generated as a result from construction	• Ensure all waste generated is disposed of in accordance with ministry requirements
Category: Water Course (Niagara River) Impacts: Associated impacts to the Niagara River and associated fish habitat and risk of sedimentation	• Ensure all operation of machinery is done on land above the high water mark where possible. Refueling, washing and servicing machinery shall be completed outside of the 30 m water course boundary where fish are present. • Ensure erosion and sediment control plan measures are followed to minimize the risk of sedimentation of Niagara River. The control plan can include: ○ Installation of sediment barriers on all catch basin and maintenance holes ○ Silt fence barriers • Stabilization of exposed soils if above the high water mark.
Category: Natural Heritage Impacts: Construction impacts on surrounding trees and breeding birds and roosting bats, and general impacts to surrounding trees/ vegetation	• 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. Protection plan to be reviewed and approved by NPC. • Trees located on NPC lands are to follow Niagara Parks tree protection plan standards. • 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. • Heavy equipment should remain outside of the dripline of the trees and within the delineated construction and staging area. • Development of a tree plan during detailed design. • Trees located on NPC lands are to follow Niagara Parks tree protection plan standards
Category: Traffic Impacts: Impact to pedestrian accessibility and nearby businesses, and local traffic delays	• Provide adequate and clear construction signage and maintain clear and safe pedestrian pathway. • Public outreach and communication including regular status updates and a hotline for the general public and surrounding businesses to report any concerns. • Develop a pedestrian circulation plan. Pedestrian circulation plan to be reviewed and approved by NPC. • 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. • Detailed traffic plan to be developed under detailed design.
Category: Property Access Impacts: Possible disruptions to private property access	• 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.

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 **Section 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/catherine-street/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 Catherine Street SPS in the Town of Fort Erie. The Notice was issued February 18, 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 (February 18, 2021), Niagara This Week (February 18, 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 Catherine Street SPS EA study.
- Obtain input on the evaluation criteria utilized to determine the recommended alternative of the Catherine Street 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 and Date Received	Summary of Comments	Action
Ministry of the Environment and Conservation and Parks (MECP) 08-Mar-21	MECP provided list of Aboriginal Communities to be included in Consultation Plan.	1. Comment filed. 2. Aboriginal community contacts added to the contact list.
Local Resident 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.	1. Comment filed. 2. Added contact to contact list. 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. 4. Plans to mitigate odour are presented in Table 8.1 and Table 8.2
Local Resident 21-Aug-21	Request to be added to the mailing list.	1. Comment filed. 2. Added contact to contact list.
Local Resident 23-Sep-21	Concerns regarding the construction of a new Catherine Street SPS. Expressed a preference for an underground solution for the Catherine Street SPS as opposed to the proposed solution of an above ground structure.	1. Comment filed. 2. Added contact to contact list. 3. Clarified the Region's design standards and noted that an equipment shelter would not suffice for the station's flows. 4. Further clarification was provided regarding the need for an above ground station to allow for ease of operations and access.

9.1.6 Notice of Completion

The Notice of Completion was distributed to local stakeholders on February 2, 2023 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, Indigenous Communities, or government agencies who have significant concerns which cannot be resolved to request the MECP to issue a Part II Order under the EA Act.

If there are concerns regarding the study, 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

<mailto: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

9.2 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 Natural Resources and Forestry
- Ministry of Energy, Northern Development and Mines
- Ministry of Indigenous Affairs
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Economic Development, Employment and Infrastructure
- Ministry of Transportation
- Ministry of Tourism, Culture and Sport
- Niagara Parks Commission
- Niagara Peninsula Conservation Authority
- Ministry of Infrastructure
- Niagara Falls Bridge Commission
- Town of Fort Erie

In response to the Notice of Commencement, an email correspondence was initiated to the MECP West Central Region, dated February 2, 2021 to provide the Notice of Commencement and project website. A response was received March 8, 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**.

9.3 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/indigenous-affairs/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.

A Stage 2 AA is currently being completed and will be finalized prior to 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.

Table 10-1 Permits and Approvals

Agency	Description of Permit / Approval
Ministry of the Environment, Conservation and Parks (MECP)	- ECA required for SPS upgrades. - 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.
Ministry of Tourism, Culture and Sport (MTCS)	- A Stage 2 AA is being undertaken, as well as a Cultural Heritage Impact Assessment. - 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.
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
Niagara Region	Road Occupancy Permit and Construction Encroachment (by the contractor)

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 Catherine Street 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.

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 PFR for the Catherine Street SPS 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 February 2, 2023) notifies members of the public and agencies that the PFR would be available for public review for a thirty day period (30-days). 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

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
ABORIGINAL COMMUNITIES										
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
LOCAL AGENCY										
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	
David	Meade	Niagara Regional Police	Executive Services	Superintendent	68 Church Street, Executive Services	St. Catharines	ON	L2R 3C6		
Lesley	Donaldson	Niagara Emergency Medical Services	Operations	Manager	509 Glendale Avenue East, Emergency Services Division	Niagara-on-the-Lake	ON	L0S 1J0		
Derrick	Beach	Canadian Section, International Niagara Board of Control	Environment and Climate Change	Secretary	867 Lakeshore Road, P.O. Box 5050	Burlington	ON	L7S 1A1		
Caroline	Bourque-Wiley	Niagara Health System	Communications	Director	1200 Fourth Avenue, NHS Corporate Office	St. Catharines	ON	L2S 0A9	bourque-wiley@niagarahhealth.on.ca	
Tony	Alfieri	Niagara Home Builders Association		President	34 Scott Street W	St. Catharines	ON	L2R 1C9	info@niagarahomebuilders.ca	
FEDERAL AGENCIES										
To Whom It May Concern		Crown-Indigenous Relations and Northern Affairs Canada							aadnc.infopubs.aadnc@canada.ca	
Brent	Valere	Fisheries and Oceans Canada		Senior Fisheries Protection Program Biologist	867 Lakeshore Road	Burlington	ON	L2R 4A6		
Dale	Nicholson	Fisheries and Oceans Canada	Ecosystems Management	Regional Director	867 Lakeshore Road	Burlington	ON	L2R 4A6		
Anjala	Puvananathan	Canadian Environmental Assessment Agency		Regional Director	55 St. Clair Avenue East, Room 907	Toronto	ON	M4T 1M2	anjala.puvananathan@ceaa-acee.gc.ca	
Kitty	Ma	Health Canada		Regional Environmental Health Assessment Coordinator	180 Queen Street West	Toronto	ON	M5V 3X3	kitty.ma@canada.ca	
Rob	Dobos	Environmental Protection Operations	Environment and Climate Change Canada	Manager	867 Lakeshore Road	Burlington	ON	L7S 1A1	rob.dobos@ec.gc.ca	
Cheyenne	Loon	Department of Indigenous and Northern Affairs		Senior Environmental Advisor	25 St. Clair Ave. East, 8th Floor	Toronto	ON	M4T 1M2		416-301-8026
Shannon	Doyle	Department of Indigenous and Northern Affairs	Lands	Regional Manager	25 St. Clair Ave. East, 8th Floor	Toronto	ON	M4T 1M2	shannon.doyle@canada.ca	416-973-7451
John	Schmied	Department of Indigenous and Northern Affairs		Sr. Information Officer	25 St. Clair Ave. East, 8th Floor	Toronto	ON	M4T 1M2	john.schmied@canada.ca	416-565-2212
Monique	Forget	Department of Indigenous and Northern Affairs		Senior Claims Analyst	10 Wellington St., 16th Floor	Gatineau	QC	K1A 0H4	monique.forget@canada.ca	819-953-8346
Pauline	Haarmeyer	Department of Indigenous and Northern Affairs		Senior Land Negotiations Officer	655 Bay Street, Suite 700, 8th Floor	Toronto	ON	M5G 2K4	pauline.haarmeyer@canada.ca	416-973-3990
Alex	Siranni	Federal Economic Development Agency for Southern Ontario	Infrastructure Operations	Acting Manager, Program Delivery	151 Yonge Street, 3rd floor	Toronto	ON	M5C 2W7		
Sandro	Leonardelli	Environment and Climate Change Canada		Manager, EA Section	4905 Dufferin Street	Toronto	ON	M3H 5T4	Sandro.Leonardelli@canada.ca	
Jeremy	Schultz	Impact Assessment Agency of Canada		Administrative Assistant, Ontario Region	55 York Street, 6th Floor	Toronto	ON	M5J 1R7	Jeremy.Schultz@canada.ca	
Pierre	Béland	International Joint Commission	Great Lakes Regional Office	Chair and Commissioner	100 Ouellette Ave., 8th Floor	Windsor	ON	N9A 6T3		
Robert	Phillips	International Joint Commission		Senior Water Quality and Ecosystems Advisor	234 Laurier Avenue West, 22nd Floor	Ottawa	ON	N9A 6T3		
Neil	R. Wilson	Navigation Canada		President and Chief Executive Officer	77 Metcalfe Street, P.O. Box 3411	Ottawa	ON	K1P 5L6		
Shannon	Doyle	Department of Indigenous and Northern Affairs		Regional Manager, Lands	655 Bay St	Toronto	ON	M5G 2K4		416-973-5282
John	Schmied	Department of Indigenous and Northern Affairs		Sr. Information Officer	655 Bay St	Toronto	ON	M5G 2K4		
Pauline	Haarmeyer	Department of Indigenous and Northern Affairs		Senior Land Negotiations Officer	655 Bay St	Toronto	ON	M4T 1M2		
To Whom It May Concern		Department of Indigenous and Northern Affairs		Environmental Assessment Coordinator	655 Bay St	Toronto	ON	M4T 1M2		

First Name	Last Name	Company/Organization	Department	Job Title	Street	City	Province	Postal Code	Email	Telephone
To Whom It May Concern		Federal Economic Development Agency for Southern Ontario		Manager, Program Delivery, Infrastructure Operations	151 Yonge Street	Toronto	ON	M5C 2W7		
		Transport Canada							enviroont@tc.gc.ca	
Devon	Smith	Transport Canada, Navigable Water Protection Program		Regional Manager	4900 Yonge Street	North York	ON	M2N 6A5	devon.smith@tc.gc.ca	416-952-0388
PROVINCIAL AGENCIES										
		Ministry of the Environment, Conservation and Parks - Environmental Assessment and Permissions Branch							MEA.Notices.EAAB@ontario.ca	
Kim	Groombridge	Ministry of Environment, Conservation and Parks	Niagara District Office	District Manager	301 St. Paul Street, 9th Floor, Suite 15	St. Catharines	ON	L2R 3W8	kim.groombridge@ontario.ca	
Barbara	Slattery	Ministry of Environment, Conservation and Parks	West-Central Region	EA/Planning Coordinator	119 King Street West, 12th Floor	Hamilton	ON	L8P 4Y7	barb.slattery@ontario.ca	
Joseph	Tyance	Ministry of Environment, Conservation and Parks	Environmental Assessment Program Support	Senior Advisor	136 St Clair Ave W	Toronto	ON	M4V 1P6	joseph.tyance@ontario.ca	
Sylvain	Campbell	Ministry of Environment, Conservation and Parks	Provincial Officer - Niagara District Office		301 St. Paul St., 9th Floor, Suite 15	St. Catharines	ON	L2R 7R4	sylvain.campbell@ontario.ca	
Michael Wayne	Spencer Simpson	Ministry of Environment, Conservation and Parks		Surface Water Group Leader	119 King St. W, 12th Floor	Hamilton	ON	L8P 4Y7	Michael.Spencer@ontario.ca wayne.simpson@ontario.ca	
Jennifer	Harvard	Ministry of Natural Resources and Forestry		Lands & Water Technical Specialist					jennifer.harvard@ontario.ca	519-826-4933
Tara	McKenna	Ministry of Natural Resources and Forestry							Tara.McKenna@ontario.ca	
David	Denyes	Ministry of Natural Resources and Forestry							David.Denyes@ontario.ca	
Tammy	Verhaeghe	Ministry of Natural Resources and Forestry		District Manager	1 Stone Road W, Ontario Government Building	Guelph, ON	ON	N1G 4Y2	tammy.verhaeghe@ontario.ca	519-826-4931
David	Marriott	Ministry of Natural Resources and Forestry		District Planner	1 Stone Road W, Ontario Government Building	Guelph, ON	ON	N1G 4Y2	david.marriott@ontario.ca	519-826-4926
Matthew	Kitchen	Ministry of Energy, Northern Development and Mines		Senior Divisional Coordinator	5th Flr, 77 Grenville St	Toronto	ON	M7A 2C1	Matthew.Kitchen@ontario.ca	416-325-7065
Jennifer	Abbott	Ministry of the Attorney General	Indigenous Justice Branch	Director (Acting)	720 Bay Street, McMurty-Scott Bldg	Toronto	ON	M7A 2S9	jennifer.abbott@ontario.ca	416-357-6972
Thorn	Hagerty	Ministry of Agriculture, Food and Rural Affairs	Environmental Management Branch	Director	1 Stone Road W, 3rd Floor	Guelph	ON	N1G 4Y2	thorn.hagerty@ontario.ca	
Colleen	Fitzgerald-Hubble	Ministry of Agriculture, Food and Rural Affairs	Environmental Management Branch	Director	1 Stone Road W, 3rd Floor	Guelph	ON	N1G 4Y2	colleen.fitzgerald-hubble@ontario.ca	
Jennifer	Block	Ministry of Economic Development, Employment and Infrastructure	Economic Development Policy Division	Assistant Deputy Minister	56 Wellesley St W Street, 11th Floor	Toronto	ON	M5S 2S3	jennifer.block@ontario.ca	
Adam	Redish	Ministry of Economic Development, Employment and Infrastructure	Infrastructure Policy Division	Assistant Deputy Minister	777 Bay St., 21st Floor	Toronto	ON	M5G 2N4	adam.redish@ontario.ca	416-314-5148
Jennifer	Hay	Ministry of Tourism, Culture and Sport		Regional Development Advisor	201 St. Paul Street, 9th Floor	St. Catharines	ON	L2R 7R4	Jennifer.Hay@ontario.ca	
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Theo	Mastorakos	Ministry of Transportation	Central Region Office	Regional Director	159 Sir William Hearst Avenue, Building D, 2nd Floor	Toronto	ON	M3M 1J8	Theo.Mastorakos@ontario.ca	
James	Bernard	Ministry of Transportation		Head - Construction and Engineering (Acting)	301 St. Paul Street, 2nd Floor	St. Catharines	ON	L2R 7R4	michelle.mcgrath@ontario.ca	
Ellen	Bennett	Ministry of Transportation			159 Sir William Hearst Ave, Building D, 2nd Floor	Toronto	ON	M3M 1J8	ellen.bennett@ontario.ca	
Teepu	Khawja	Ministry of Transportation		Regional Director - Central Region	159 Sir William Hearst Ave, Building D, 2nd Floor	Toronto	ON	M3M 1J8	teepu.khawja@ontario.ca	416-235-5400
Glenn	Dunphy	Ministry of Transportation		Regional Manager	1550 Enterprise Rd, 2nd Floor, Suite 228	Mississauga	ON	L4W 4P4	glenn.dunphy@ontario.ca	905-564-5265
Jonathan	Boone	Ministry of Transportation		Head - Construction and Engineering	301 St. Paul Street, 2nd Floor	St. Catharines	ON	L2R 7R4	jonathan.boone@ontario.ca	905-704-2601
Marcelo	Gruosso	Niagara Parks Commission	Engineering, Parking & Transportation	Senior Director	7400 Portage Road S, Box 150	Niagara Falls	ON	L2E 6T2	mgruosso@niagaraparks.com	
Rachel	Adamsky	Niagara Parks Commission		Property Coordinator	7805 Niagara Parkway	Niagara Falls	ON	L2E 6T2	radamsky@niagaraparks.com	905-321-1857
Ellen	Savola	Niagara Parks Commission	Environmental Planning	Senior Manager	7806 Niagara Parkway	Niagara Falls	ON	L2E 6T3	esavola@niagaraparks.com	289-241-8375
Lisa	Myslicki	Infrastructure Ontario		Environmental Advisor	1 Dundas Street West, Suite 200	Toronto	ON	M5G 2L5	lisa.myslicki@infrastructureontario.ca	
Michael	Baran	Niagara Escarpment Commission		Planner	232 Guelph Street, 3rd Floor	Georgetown	ON	L7G 4B1	michael.baran@ontario.ca	
David	Ayotte	Niagara Escarpment Commission		Director	233 Guelph Street, 3rd Floor	Georgetown	ON	L7G 4B2	david.ayotte@ontario.ca	905-877-4810
David	Deluce	Niagara Peninsula Conservation Authority	Planning Review & Regulations	Manager	250 Thorold Road West, 3rd Floor	Welland	ON	L3C 3W2	ddeluce@npca.ca	
Chandra	Sharma	Niagara Peninsula Conservation Authority		CAO	250 Thorold Road West, 3rd Floor	Welland	ON	L3C 3W2	csharma@npca.ca	
Darren	MacKenzie	Niagara Peninsula Conservation Authority	Watershed Management	Director	250 Thorold Road West, 3rd Floor	Welland	ON	L3C 3W2	dmackenzie@npca.ca	
Natalie	Green	Niagara Peninsula Conservation Authority	Niagara River RAP	Project Manager	250 Thorold Road West, 3rd Floor	Welland	ON	L3C 3W2	ngreen@npca.ca	
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Adam	Aldworth	Niagara Peninsula Conservation Authority	Planning & Regulations	Ecology Technician	250 Thorold Road West	Welland	ON	L3C 3W4	aaldworth@npca.ca	
Tim	Rigby	Niagara Peninsula Source Protection Committee		Regional Councillor	18 Rockcliffe Rd.	St. Catharines	ON	L2R 3S9	tim.rigby@niagararegion.ca	
Low	Holloway	Niagara Falls Bridge Commission		General Manager	5365 Military Road	Lewiston	NY	14092		
Ken	Bieger	Niagara Falls Bridge Commission		General Manager	5366 Military Road	Lewiston	NY	14093	kbieger@niagarafallsbridges.com	905-354-5641
Ron	Rienas	Peace Bridge Authority		General Manager	100 Queen Street	Fort Erie	ON	L2A 3S6		
Leslie	Woo	Metrolinx/GO Transit	Planning and Policy	Chief Planning Officer	97 Front Street West	Toronto	ON	M5J 1E6	leslie.woo@metrolinx.com	416-202-5918
Ms. Dawn Palin	Rokosh	Ministry of Infrastructure	Infrastructure Policy Division	Director	900 Bay St., 8th Floor	Toronto	ON	M7A 2E1	dawn.palin.rokosh@ontario.ca	
Jennifer	Hay	Ministry of Heritage, Sport, Tourism and Culture		Regional Advisor	301 St. Paul St., 9th Floor	St. Catharines,	ON	L2R 7R4	jennifer.hay@ontario.ca	905-704-3951
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Bruce	Zvaniga	Niagara Region	Public Works	Commissioner						
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Doug	Johnson	Niagara Region	Wastewater Operations and Maintenance	Associate Director					doug.johnson@niagararegion.ca	
Rob	Daw	Niagara Region	Wastewater Operations and Maintenance	Associate Director (acting)					robert.daw@niagararegion.ca	
Carolyn	Rysall	Niagara Region	Transportation Services	Director					carolyn.rysall@niagararegion.ca	

First Name	Last Name	Company/Organization	Department	Job Title	Street	City	Province	Postal Code	Email	Telephone
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Catherine	Habermehl	Niagara Region	Waste Management Services	Director					catherine.habermehl@niagararegion.ca	
Allison	Tyldesley	Niagara Region	Waste Collection and Diversion	Associate Director					allison.tyldesley@niagararegion.ca	
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Phil	Lambert	Niagara Region	Infrastructure Planning and Development Engineering	Director						
M. Mustafa	Hirji	Niagara Region	Public Health	Medical Officer of Health and Commissioner					valeri.jaeger@niagararegion.ca	
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Glen	Hudgin	Niagara Region	Environmental Health	Manager					glen.hudgin@niagararegion.ca	
Robert	Daw	Niagara Region	Wastewater Operations , Area 1	Manager					Robert.Daw@niagararegion.ca	
Barry	Robbins	Niagara Region	Maintenance Manager, Area 1	Manager					barry.robbs@niagararegion.ca	
Dawn	Macarthur	Niagara Region	Water/Wastewater Compliance	Manager					dawn.macarthur@niagararegion.ca	
Glenn	Fulton	Niagara Region	Asset Performance	Supervisor					glenn.fulton@niagararegion.ca	
Scott	Gabel	Niagara Region	Electrical	Niagara Region Electrical					scott.gabel@niagararegion.ca	
Ed	VanVliet	Niagara Region	SCADA	SCADA Group Manager					ed.vanvliet@niagararegion.ca	
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Richard	Brady	Town of Fort Erie	Community & Development Services	Director	1 Municipal Centre	Fort Erie	ON	L2A 2S6	rbrady@forterie.on.ca	
Chris	Lee	City of Port Colborne	Engineering and Operations	Director	66 Charlotte Street	Port Colborne	ON	L3K 3C8	deo@portcolborne.ca	
Dan	Aquilina	City of Port Colborne	Planning & Development	Director	66 Charlotte Street	Port Colborne	ON	L3K 3C8	danaquilina@portcolborne.ca	
Kimberley	Zanko	Town of Fort Erie		Councillor - Ward 3	670 Brian Street	Fort Erie	ON	L2A 6W2		289-320-7967
Marina	Butler	Town of Fort Erie		Councillor - Ward 4	2577 Thunderbay Road	Ridgeway	ON	L0S 1N0		905-894-1381
Tim	Marotta	Town of Fort Erie	Engineering Division	Manager	1 Municipal Centre Drive	Fort Erie	ON	L2A 2S6	TMarotta@forterie.ca	905 932 4844
Chris	Pisarcic	Town of Fort Erie	Water/Wastewater	Manager					CPisarcic@forterie.ca	
RESIDENTS & INTERESTED STAKEHOLDERS										
Leigh	Whyte	PLW Planning & Environmental Consulting	Developers at 7 Central Ave (Compass Heights)						leigh@plwconsulting.com	(905) 658-5314
Patrick	Mines	Town of Fort Erie, Lakeshore Road Resident							pmines@me.com	
Arnold	Johnsen	Cogeco							ajohnsen@cogeco.ca	

APPENDIX A2: PUBLIC NOTICES

THE REGIONAL MUNICIPALITY OF NIAGARA
NOTICE OF STUDY COMMENCEMENT
Catherine Street Sanitary Pumping Station
Municipal Class Environmental Assessment
Town of Fort Erie

WHAT

Niagara Region has initiated a Municipal Class Environmental Assessment (EA) Study to assess the preferred alternative for the required upgrades to the Catherine Street Sewage Pumping Station (the site) located in the Town of Fort Erie at 8 Catherine St. The station was commissioned in 1981 and has since undergone equipment replacements and various maintenance activities while continuing to service the Town. Recent investigations indicate the station will require upgrades based on the infrastructure's age, condition and to accommodate the projected population growth.

WHY

Investigations conducted at the site indicate aging infrastructure and poor condition warranting the need for station upgrades. In addition, Niagara Region's 2017 Water and Wastewater Master Servicing Plan indicates capacity increase demands due to operational, capacity and wet weather constraints. Considering this, Niagara Region has identified the need to initiate a Municipal Class EA to conduct an assessment of the site and determine the preferred solution to address these future requirements for the site.

HOW

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.

GET INVOLVED

Niagara Region encourages the public and stakeholders to actively participate in this planning process. This public information centre (PIC) will be hosted 'virtually' and will present details about the study, the process used to decide on possible solutions and allow you the opportunity to share your comments and concerns.

In response to the COVID-19 situation, this PIC will be hosted 'virtually' online via Niagara Region's website. All content and instructions on how to submit questions will be posted on the project webpage.

niagararegion.ca/projects

Information boards and a video walkthrough of their content is available for review on the project webpage. 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

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

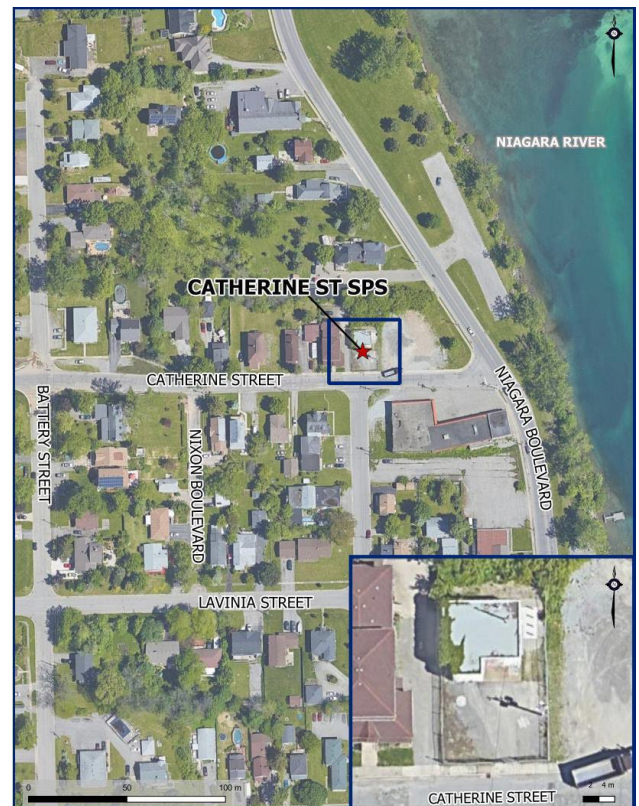
Project Manager
 GM Blue Plan Engineering Limited
 1266 South Service Rd., Unit C31
 Stoney Creek, ON L8E 5R9
 905-643-6688
amanda.beattie@gmblueplan.ca

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.

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 February 9th, 2021.

WHERE



Notice of Completion

Catherine Street 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 Catherine Street Sewage Pumping Station (SPS) located at 8 Catherine Street in the Town of Fort Erie. The Catherine Street SPS was commissioned in 1981 and has since undergone various maintenance activities while continuing to service the community. 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 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 relocating the Catherine Street SPS on the adjacent empty lot to the east.

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 <https://niagararegion.ca/projects/catherine-street/default.aspx> and on display for review at the following location for 30 calendar days beginning on February 3, 2023 and ending on March 4, 2023.

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

Amanda Beattie, P.Eng., P.Geo., PMP
Project Manager, Partner
GM BluePlan Engineering Limited
1266 South Service Rd., Unit C31
Stoney Creek, ON L8E 5R9
905-643-6688
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 February 2, 2023.

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
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
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Thorold, ON, L2V 4T7
905-980-6000 ext. 3176
Fax: 905-685-5205
stephanie.mcgill@niagararegion.ca

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

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GM Blue Plan Engineering Limited
1266 South Service Rd., Unit C31 Stoney Creek, ON, L8E 5R9
905-643-6688
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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 (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.

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 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

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
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)

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905-643-6688

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 **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.

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 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 grey and others in a light purple. The lines are thin and grey, creating a web-like structure across the entire image. The top half of the image has a dark grey background, while the bottom half is a solid light 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 8th, 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 Information Centre

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:

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!

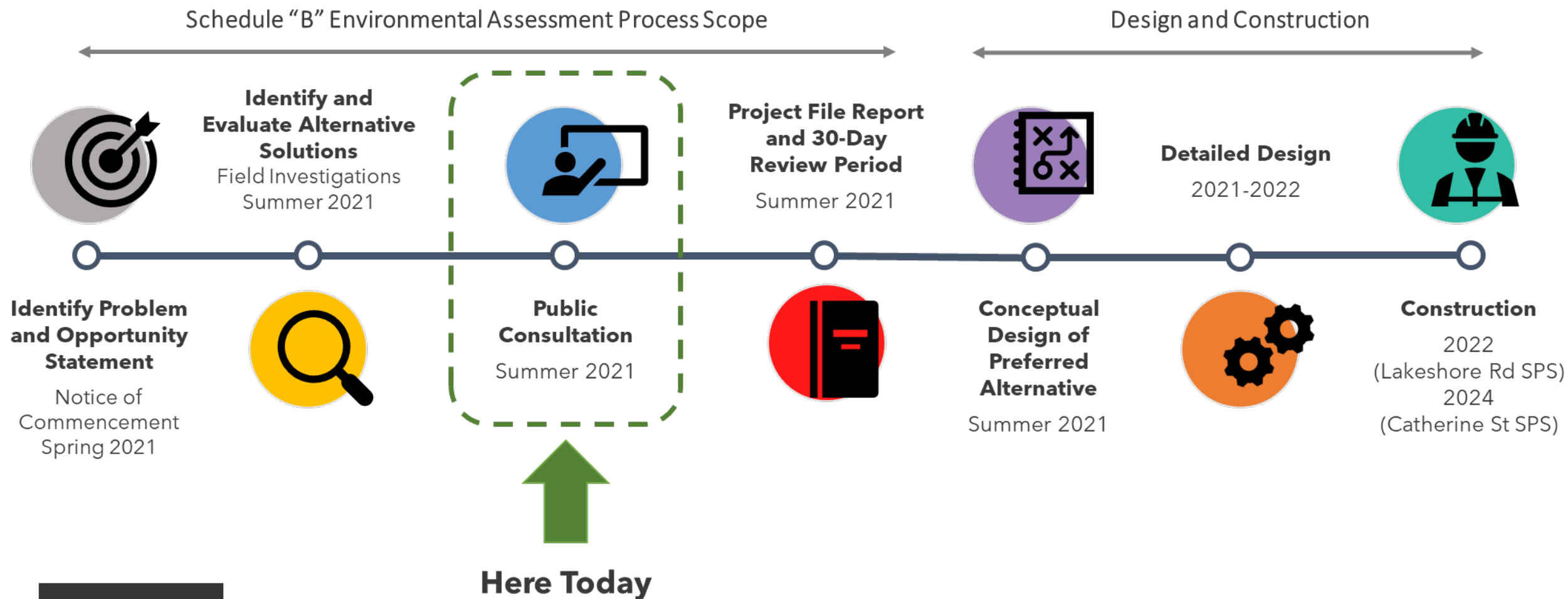
Submitting Questions & Comments

[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



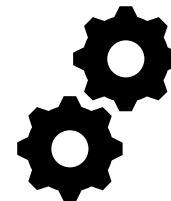
- Terrestrial System
- Aquatic System
- Groundwater, Water Quality and Quantity

ENVIRONMENTAL (25%)



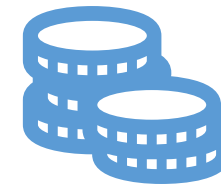
- Odour
- Visual and Aesthetics Appeal
- Disruption During Construction
- Property Acquisition and Easements
- Existing and Future Land Compatibility
- Archaeological/Built Cultural Heritage

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

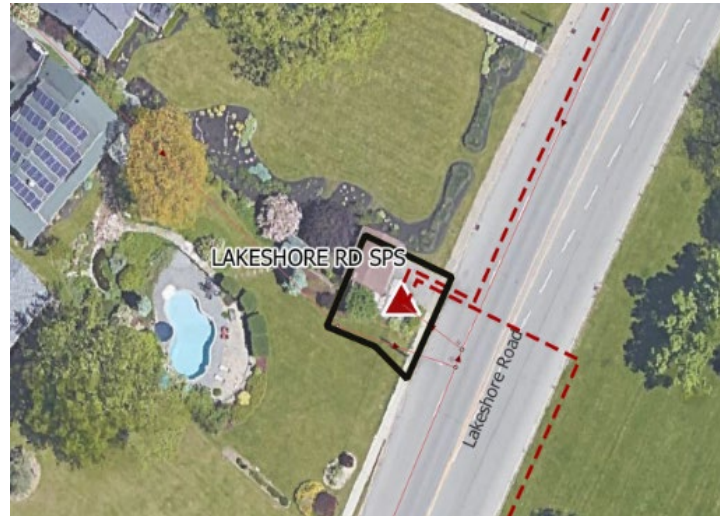
TECHNICAL

- ✓ 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

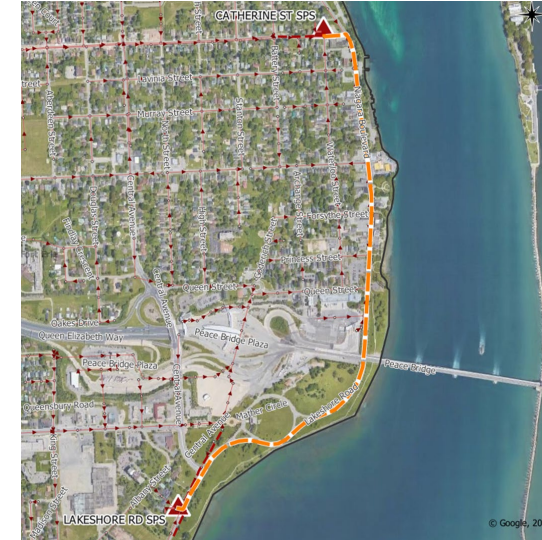
- ✓ Moderate ability to meet future flows
- ✓ Low potential for maintenance issues
- ✓ Ability to provide redundancy and adaptability to climate change impacts
- ✗ Potential challenges to obtaining permits and approvals
- ✗ Moderate to severe geotechnical and hydrology impacts
- ✗ Not compatible with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

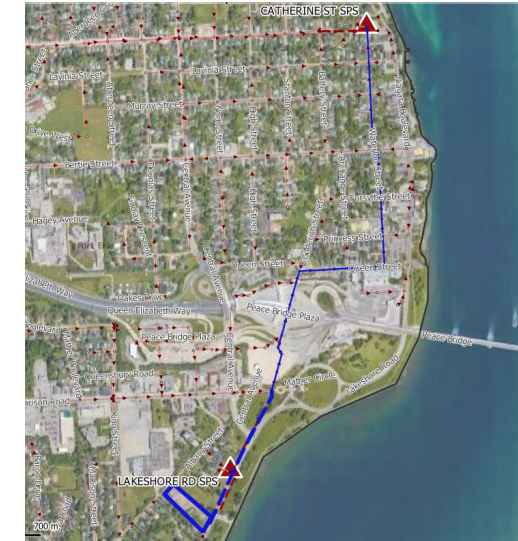
TECHNICAL

- ✓ 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
Option A – Upgrade Lakeshore Rd SPS and Catherine St SPS at existing locations and property footprints					
Option B – Upgrade both stations, Lakeshore Rd SPS at the existing site and move Catherine St SPS to the adjacent lot to the east					
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					
Option D – 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					
Option E – Decommission Lakeshore and gravity sewer along Lakeshore Road/Niagara Boulevard. Relocate Catherine SPS to adjacent east lot					
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					
Option G - Relocate Lakeshore Rd SPS to south vacant property (east of Lakeshore Rod). Relocate Catherine St SPS to adjacent east lot					
Legend: 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

**Ministry of the Environment,
Conservation and Parks**

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

Environmental Assessment Branch

Direction des évaluations
environnementales

1st Floor

135 St. Clair Avenue W
Toronto ON M4V 1P5

Tel.: 416 314-8001

Fax.: 416 314-8452

Rez-de-chaussée

135, avenue St. Clair Ouest
Toronto ON M4V 1P5

Tél. : 416 314-8001

Télec. : 416 314-8452

365-366-8185

Via email only

March 8, 2021

Stephanie McGill
Region of Niagara

Amanda Beattie
GM Blue Plan

**Re: Response to Notice of Commencement
Catherine Street Pumping Station, Town of Fort Erie)**

This letter is in response to the Notice of Commencement for the Catherine Street Pumping Station Schedule "B" Class EA being undertaken by the Region of Niagara. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Region will follow the requirements for Schedule "B" projects as it undertakes this EA to Identify the preferred alternative for the required upgrades to this sewage pumping station to address identified deficiencies and ensure that it is capable of meeting future servicing demands.

In the completion of this EA, it is expected that the Region will document how it has considered impacts to source protection, climate change adaptation and mitigation and impacts to species at risk and their habitats. Resources to assist in meeting these expectations are included with this letter

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.

Your 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 your proposed project, **the MECP is delegating the procedural aspects of rights-based consultation to you 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 you have provided to date and the Crown's preliminary assessment you are required to consult with the following communities who have been identified as potentially affected by your proposed project:

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

Steps that you may need to take in relation to Aboriginal consultation for your proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link:

<https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process> Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments

You must contact the Director of Environmental Approvals and Permissions Branch under the following circumstances after 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 has reached an impasse
- A Part II Order request or elevation request is expected

The Director of the Environmental Assessment and Permissions Branch can be notified either by email with the subject line "Potential Duty to Consult" by mail, email or fax at the addresses provided below:

Email:	enviroperrmissions@ontario.ca Subject: Potential Duty to Consult
Fax:	416-314-8452
Address:	Environmental Approvals and Permissions Branch 135 St. Clair Avenue West, 1 st Floor Toronto, ON, M4V 1P5

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

Royal Assent was given on July 22nd to Bill 197 which made changes to the provincial environmental assessment process. Proponents are still required to submit 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.

Now however, the Notice of Completion is to advise 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

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
ClassEAnotices@ontario.ca

Please note that the Region cannot proceed with implementation of the preferred alternative until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the Region 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 some aspect of the project.

If other concerns with the Project File and/or EA process are made known to the minister, or determined following a review of the Project File, the Minister reserves the right to issue an order on his or her own initiative within a specified time period. Within the 30 days following the Notice of Completion, the Director would first issue a Notice of Proposed Order to the Region if the Minister is considering an order for the project. At this time, the Director may request that additional information be submitted. 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.

If you have any questions or require clarification on any of the points provided herein, please contact me at 365-366-8185 or via email at Barbara.slattery@ontario.ca I also take this opportunity to advise you that I am retiring from the Ministry effective March 31, 2021. Ms. Joan Del Villar will be assuming the role of Regional EA Coordinator for West Central Region effective March 22, 2021 so please direct your correspondence to her attention after that date.

With best regards,

A handwritten signature in cursive script that reads "Barbara Slattery". The signature is written in dark ink on a light-colored, slightly textured background.

EA/Planning Coordinator
Encl.

Samantha Morrisey - GM BluePlan

Subject:

From: McGill, Stephanie <Stephanie.McGill@niagararegion.ca>
Sent: Monday, May 03, 2021 10:06 AM
To: pmines@outlook.com
Cc: Amanda Beattie - GM BluePlan <Amanda.Beattie@gmblueplan.ca>; ninfamines@outlook.com
Subject: RE: Lakeshore road sanitary pumping station

Good morning Patrick,

Thank you for your interest in the Lakeshore Road Pumping Station project. We have received your email correspondence and will ensure you are included on communication involving the proposed solutions as well as keeping you updated throughout the project. I would be happy to call this afternoon to further discuss the current project status and address any questions or concerns you may have.

Kind regards,

Stephanie McGill
Project Manager
Water & Wastewater, Public Works
Niagara Region
3501 Schmon Parkway, P.O. Box 1042
Thorold, Ont. L2V 4T7
Phone: 905-685-4225 ext. Toll-free: 1-800-263-7215
Cell: 905-650-7389
www.niagararegion.ca

From: pmines <pmines@outlook.com>
Sent: Friday, April 30, 2021 9:01 AM
To: McGill, Stephanie <Stephanie.McGill@niagararegion.ca>
Cc: amanda.beattie@gmblueplan.ca; Ninfa Dimora-Mines <ninfamines@outlook.com>
Subject: Lakeshore road sanitary pumping station

CAUTION: This email originated from outside of the Niagara Region email system. Use caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

Stephanie,

I am sending this email to signify our interest to be involved, and or offer comment in regard to the notice of study on the Lakeshore road sanitary pumping station, located at 14A lakeshore road.

We are the owners of the property located at 14 Lakeshore road and therefore would likely have concern and or comment regarding any proposed solution.

We would very interested to learn what alternative strategies are being considered at the present time, as indicated in your notice as published.

Please be good enough to acknowledge receipt of this communication at your convenience that we may ensure we are included.

Best Regards,

Patrick E. Mines

14 Lakeshore road,
Fort Erie, Ontario, L2A 1B1

cell. 905.993.0128

pmines@outlook.com

The Regional Municipality of Niagara Confidentiality Notice The information contained in this communication including any attachments may be confidential, is intended only for the use of the recipient(s) named above, and may be legally privileged. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, disclosure, or copying of this communication, or any of its contents, is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender and permanently delete the original and any copy of it from your computer system. Thank you.

Samantha Morrisey - GM BluePlan

From: McGill, Stephanie <Stephanie.McGill@niagararegion.ca>
Sent: Monday, May 03, 2021 2:57 PM
To: Amanda Beattie - GM BluePlan
Cc: Samantha Lourenssen - GM BluePlan
Subject:

Follow Up Flag:
Flag Status:

Hi Amanda,

I spoke to Patrick Mines about Lakeshore and wanted to give you a quick recap of the conversation. His main question was whether we have decided on an alternative and I advised him we are in the early stages of planning and are considering multiple solutions for the upgrades, no preferred solution has been identified yet. He noted that there are odour issues that prevent him from enjoying his yard and he has concerns about the quality of air as anything he plants nearby dies. Unsurprisingly, his preferred solution is to remove the station from it's current location. He also wanted to note that if the property became available he would like to purchase it.

He said he's passed along the notice to his neighbours and encouraged them to reach out with similar concerns and stance that the preference is to remove the station from it's current location so I imagine we will hear from them shortly.

Thanks,

Steph

The Regional Municipality of Niagara Confidentiality Notice The information contained in this communication including any attachments may be confidential, is intended only for the use of the recipient(s) named above, and may be legally privileged. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, disclosure, or copying of this communication, or any of its contents, is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender and permanently delete the original and any copy of it from your computer system. Thank you.



Impact Assessment
Agency of Canada

Ontario Region
600-55 York Street
Toronto ON M5J 1R7

Agence d'évaluation
d'impact du Canada

Région de l'Ontario
600-55 rue York
Toronto ON M5J 1R7

August 27, 2021

Sent by email

Amanda Beattie
Project Manager
GM Blue Plan Engineering Limited
1266 South Service Rd
Unit C31
Stoney Creek ON L8E 5R9
amanda.beattie@gmblueplan.ca

Dear Amanda Beattie:

Subject: Applicability of the *Impact Assessment Act* to the Review of the Catherine Street and Lakeshore Road Sewage Pumping Station Project proposed by Niagara Region

Thank you for your correspondence, dated August 26, 2021, regarding the Catherine Street and Lakeshore Road Sewage Pumping Station (the Project) proposed by Niagara Region (the proponent).

The *Impact Assessment Act* (the IAA) sets out the federal process for assessing the impacts of certain major projects, including the assessment of positive and negative environmental, economic, health and social effects that are within the legislative authority of the Parliament of Canada. The *Physical Activities Regulations* (the Regulations) under the IAA

Proponents of designated projects are required to submit an Initial Project Description to the Impact Assessment Agency of Canada (the Agency) to inform a determination of whether an impact assessment is required.

Based on the information you provided to the Agency on August 26, 2021, it is the Agency's view that the Project is not a designated project. As a result, the proponent is not required to submit an Initial Project Description.

Should details or design aspects of the Project change such that the Project may include physical activities that are described in the Regulations, contact the Agency to discuss these changes and the implications on the applicability of the IAA.

.../2



Please note that for physical activities not described in the Regulations, subsection 9(1) of the IAA provides that the Minister of Environment and Climate Change (the Minister) may designate a physical activity. The Minister may designate on request or on his or her own initiative. A physical activity may be designated if the Minister is of the opinion that the carrying out of that activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects (resulting from federal decisions), or if public concerns related to those effects warrant the designation. Should the Minister designate the physical activity it would be considered a designated project and an Initial Project Description would be required.

Should the Project be carried out in whole or in part on federal lands, section 82 of the IAA would apply if any federal authority is required to exercise a power, duty or function under an Act other than IAA in order for the Project to proceed, or is providing financial assistance for the purpose of enabling the Project to be carried out. In that case, that federal authority must ensure that any Project assessment requirements under those provisions are satisfied.

In addition, other federal regulatory permits, authorizations and/or licences may still be required.

Further information on the IAA and associated regulations can be found at <https://www.canada.ca/en/impact-assessment-agency.html>.

If you have any questions, please feel free to contact us at iaac.ontarioregion-regiondontario.aeic@canada.ca.

Sincerely,



Sean Carriere
A/Director, Ontario Region

c.c.: Stephanie McGill, Project Manager, Niagara Region

Attachment – Useful Legislation, Regulation, and Guidance Documents

For more information on the *Impact Assessment Act*, please refer to the following links:

Legislation and Regulations:

<https://www.canada.ca/en/impact-assessment-agency/corporate/acts-regulations/legislation-regulations.html>

Impact Assessment Process Overview:

<https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/impact-assessment-process-overview.html>

Practitioner's Guide to Federal Impact Assessments under the *Impact*

Assessment Act: <https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/practitioners-guide-impact-assessment-act.html>

Compendium of Policies and Guidance Documents:

<https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance.html>

Government of Canada News Release dated August 8, 2019:

<https://www.canada.ca/en/impact-assessment-agency/news/2019/08/better-rules-for-impact-assessments-come-into-effect-this-month.html>



DEPARTMENT OF
CONSULTATION AND ACCOMMODATION

November 26, 2021

VIA EMAIL

GM BluePlan Engineering Ltd.
1266 South Service Road, Unit C31
Stoney Creek, ON L8E 5R9

Dear Kristen Farrell,

RE: MCFN Response to Notice of Public Information Centre
Catherine Street and Lakeshore Road SPS Municipal Class EA

Confirmation of Receipt

I am writing on behalf of the Mississaugas of the Credit First Nation ("MCFN") to acknowledge that we have received your above named communication, dated August 26, 2021.

Outline of MCFN Rights and Territory

In 1781, the Crown and MCFN entered into Mississaugas Treaty at Niagara (1781) regarding the lands in which your project is situated.

The Mississaugas of the Credit First Nation are the descendants of the "River Credit" Mississaugas. The undisputed Territory of the MCFN is defined as a Territory commencing at Long Point on Lake Erie thence eastward along the shore of the Lake to the Niagara River. Then down the River to Lake Ontario, northward along the shore of the Lake to the River Rouge east of Toronto then up that river to the dividing ridges to the head waters of the River Thames then southward to Long Point, the place of the beginning. Our Territory encompasses the lands and waters that were used and occupied by our Ancestors. Territories are usually large tracts of land that reflect the breadth required for seasonal activities and habitation and changes in those movement patterns through time. Through Treaties with the Crown, MCFN agreed to share our Territory with newcomers. However, not all of MCFN's Territory has been dealt with through a Treaty.



DEPARTMENT OF CONSULTATION AND ACCOMMODATION

Mississaugas of the Credit First Nation
4065 Hwy #6, Hagersville, Ontario N0A 1H0



Phone: (905) 768-4260





With the exception of a small part of the Credit River, our Treaties with the Crown did not deal with the water parts of our Territory. We have not agreed to share any part of our waters with settlers. We formally gave notice to the Crown of this claim in 2016. We note that any lands that have been artificially created on our waters have also not been dealt with by any Treaty.

Like our ancestors before us, we continue to use the lands, waters, and watershed ecosystems within our Territory for a variety of livelihood, harvesting, ceremonial and spiritual purposes. We have always exercised governance functions and stewardship in order to protect our Territory, conserve the fish and wildlife that depend upon it, and ensure its ongoing ability to sustain our people. We assert that our Aboriginal and treaty rights fundamentally entitle us to continue to act as stewards of our Territory, to be involved in decisions that affect it, and to participate in the ongoing, responsible management of the resources it provides.

Duty to Consult and Accommodate

As you will know, the Crown has a constitutional duty to consult and accommodate MCFN in respect of any decisions that might affect its asserted or proven Aboriginal and/or Treaty Rights. We expect that, consistent with the Crown's constitutional duty, no approval should be issued to this project until MCFN has been sufficiently consulted and accommodated. Nothing in this letter shall be construed as to affect our Aboriginal and/or Treaty Rights and hence shall not limit any consultation and accommodation owed to MCFN by the Crown or any proponent, as recognized by section 35 of the Constitution Act, 1982.

MCFN has the right to free and informed consent prior to the approval of any project or any planning decision adversely impacting its Territory and to benefit economically from resource development within its Territory.

MCFN has formed the Department of Consultation and Accommodation ("DOCA") to represent its interests in consultation and accommodation matters. It is DOCA's mandate to ensure that we are directly involved in all planning and development that impacts the integrity of our Territory. In this regard, DOCA will assess and help alleviate impacts on our rights, land claims, and ways of life by building relationships with governments and private sector proponents. We share a mutual interest in ensuring that projects in the Territory are planned, reviewed, and developed in a manner which ensures healthy communities, ecological protection, and sustainable development for present and future generations in the Territory.



DEPARTMENT OF CONSULTATION AND ACCOMMODATION

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4065 Hwy #6, Hagersville, Ontario N0A 1H0



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MCFN is not opposed to development, but MCFN must to be involved in development decision making. MCFN has a deep connection to its Territory and we have a stewardship responsibility for our land. By engaging with us, a project proponent can learn our perspective on how to care for this land and we can work together to shape the project to mitigate damaging effects to our land and perhaps even work to improve our environment. MCFN is the only party who shall determine whether there are impacts to our Aboriginal and treaty rights.

One of the ways we require proponents to engage with us is in providing transparency during the environmental survey and archaeological assessment process. The best way to accomplish this is by having Field Liaison Representatives (“FLRs”) on location while fieldwork is occurring, who can ensure that the Nation’s special interests and concerns are respected and considered during fieldwork. The cultural and natural resources in question are part of MCFN’s territory and heritage and it is our responsibility to ensure their protection, on behalf of the Nation. MCFN’s stewardship of its territory extends through the life of any development project and beyond.

In the spirit of collaboration and relationship building, MCFN encourages GM BluePlan to consider use of MCFN owned businesses in the execution of this project. For further information please contact Christopher Lefebvre, Mississaugas of the Credit Business Corporation.

DOCA Project Registration

DOCA has completed an initial intake review of the project communication you have provided. This file has been assigned DOCA Project 2021-0861 ; please use this number in all future communications.

We respectfully ask you to immediately notify us if there are any changes to the project.

Referral to DOCA Units

Following DOCA’s initial intake review of the project communication, the file has been referred to the following DOCA Units for additional follow-up.

	Unit Identification	Primary Contact	Email Address
✓	Archaeology	Adam LaForme	adam.laforme@mncfn.ca
✓	Cultural/Historical	Darin Wybenga	darin.wybenga@mncfn.ca
✓	Environment	Fawn Sault (Temp)	fawn.sault@mncfn.ca
	FLR Participation	Adam LaForme	adam.laforme@mncfn.ca
	Governance	Katelyn LaForme	katelyn.laforme@mncfn.ca
✓	Economic Development	Christopher Lefebvre	clefebvre@mncbc.ca

If you have not been contacted by the indicated DOCA Units within fourteen days following receipt of this letter, please let me know.



DEPARTMENT OF CONSULTATION AND ACCOMMODATION

Mississaugas of the Credit First Nation
4065 Hwy #6, Hagersville, Ontario N0A 1H0



Phone: (905) 768-4260



Request for Missing Information

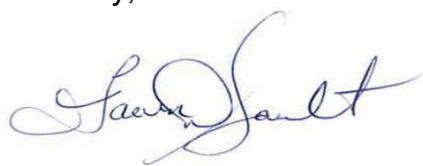
In order to proceed with our follow-up review, we ask you to ensure that all available information relating to the project has been transmitted to us. We have identified the following general information as missing from your initial project communication:

	Outstanding Project Information
	Name of person or body undertaking the action or decision.
	Contact information for the person or body undertaking the action or decision.
✓	List of documents pertaining to the proposed action/decision that are available for MCFN to review.
✓	Description of what other information is expected to become available before the proposed action/decision is undertaken.
✓	Deadlines or filing dates pertaining to the action/decision.
✓	The Crown or Municipal review/ approval that is required for the project.
✓	How the proposed action or decision may affect and/or benefit MCFN, its rights and territory.

Closing

We ask that you respond with the above requested information within fourteen days following receipt of this letter. We thank you in advance for your attention to our requirements and we look forward to working with you further to shape the planning for development in our Territory.

Sincerely,



Fawn Sault
Consultation Coordinator
fawn.sault@mncfn.ca



DEPARTMENT OF CONSULTATION AND ACCOMMODATION

Mississaugas of the Credit First Nation
4065 Hwy #6, Hagersville, Ontario N0A 1H0



Phone: (905) 768-4260



Transcript of Resident Letter

Subject: Catherine St. and Lakeshore Rd Sewage Pumping Station

Addressed To: Amanda Beattie

From: Resident

Total Number of Pages Including Cover Page (in Original Document): Total 9 pages

Public Information Centre #1: Catherine Street and Lakeshore Road Sewage Pumping Station

Which project are you commenting on?

- ☒ Catherine Street Sewage Pumping Station
- ☒ Lakeshore Road Sewage Pumping Station Municipal Class Environmental Assessment

Provide any comments or questions you have.

Please see additional pages. Including cover page, total of 9 pages.

City

- ☒ Fort Erie
- ☐ Grimsby
- ☐ Lincoln
- ☐ Niagara-on-the-Lake
- ☐ Niagara Falls
- ☐ Pelham
- ☐ Port Colborne
- ☐ St. Catharines
- ☐ Thorold
- ☐ Wainfleet
- ☐ Welland
- ☐ West Lincoln
- ☐ Other, please specify

Alternative Evaluation

Option A – Upgrade Lakeshore Road SPS and Catherine St. SPS at existing locations and property footprints.

- Not a good choice – both area old aging buildings – Do not meet today's standards – buildings will require frequent updating and will not be able to keep up with the needs of future demands – will need to build new ones in the future
- Need to decommission and relocate both

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

- Not a viable solution

Option C – Lakeshore Rd. SPS remove control building and construct a new wet well, value chamber and forcemain.

*Construct new Catherine St. SPS at adjacent lot to the east (NOT viable.)

- If this is the best solution for the Lakeshore Rd. SPS – why would it not also be the best solution for the Catherine St. SPS.
- This only makes sense, both stations are old and are in need of repair and replacement
- Do the same system of operation for both Lakeshore Rd. and Catherine St. sites
- **Major Positives are:**
 - 1) Environmental Factors
 - 2) Technical Considerations
 - 3) Summary Score
- **Minor Positives are:**
 - 1) Social and cultural factors
 - 2) Economic considerations
- This is the most feasible solution
- Cost effective
- Can accommodate future growth and service needs
- More visual and aesthetic appeal
- Less disruption to the community

Option D – 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

- This option is not practical, viable and too expensive – not a feasible solution
- Concentrate SPS in one area only
- Too overwhelming for one pumping station
- It has too many negative issues that need to be considered, that would make this choice even possible – issue – odour problems.
- **Negative Areas are:**
 - 1) Environmental Factors
 - 2) Social and Cultural Factors
 - 3) Technical Considerations
 - 4) Economic Considerations

Option E – Decommission Lakeshore and gravity sewer along Lakeshore Road/ Niagara Boulevard.

- Relocate Catherine SPS to adjacent east lot
- It's the same situation as Option D.
- But instead of SPS being located at Forsythe St. it will be on Catherine St.
- Too overwhelming for one pumping station. You need to have two locations to meet the needs of a growing population.
- Creates odour problem issues in one area
- One system – too demanding. Puts too much pressure and strain on the system.
- Will need to redo and update the system in the future (Catherine St) – not aesthetic.
- This option is not practical and viable.
- Too expensive – not a feasible solution
- Too many negative issues that need to be considered, that would make this choice possible
- **Negative Areas are:**
 - 1) Environmental Factors
 - 2) Social and Cultural Factors
 - 3) Technical Considerations
 - 4) Economic Considerations
- Doesn't fit into surrounding area (neighborhood)

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

- Relocate Lakeshore Rd. SPS to south vacant property (east of Lakeshore Rd.)
- Relocate Catherine St. SPS to adjacent east lot.
- Relocating both is not the best option
- Too costly – can't accommodate future growth
- Environmental Factors

Summary Evaluation for Lakeshore and Catherine Street Pumping Stations

- Lakeshore commissioned in 1985
- Catherine St. commissioned in 1981

Both Stations have already:

- Undergone minor equipment replacements and various maintenance activities
- Both sites indicate aging infrastructure
- Lakeshore – high maintenance costs
- Catherine St. – poor conditions warranting the need for station upgrades
- Both indicate increasing capacity demands
- Since both have similar conditions, the logical solution is to use option C with some changes
- Option C – Lakeshore Rd SPS remove control building and construct new wet well, valve chamber and forcemain
- Construct new Catherine St. SPS at adjacent lot to the east (don't agree)
- Both sites benefit by:
 - Removing the control building. Will improve sewage pumping station aesthetics
 - Cost effective alternatives
 - Suits the existing infrastructure
 - Accommodates future growth and service needs
 - Reduces disruption to existing infrastructure utilizing owned regional land
 - Eliminates the need to construct new Catherine St. SPS at adjacent lot to the east. Saves money - cost effective.
 - Minimal environmental impacts to aquatic system and groundwater
 - Compatible with existing land use as no property acquisitions will be required
 - Improved aesthetics from removing the control building
 - Addresses odour and aesthetic issues from removal of the control building
 - Minimal geotechnical challenges
 - Ability to meet future flows
 - No challenges to obtaining permits and approvals
 - Compatible with existing infrastructure
 - Low capital costs
 - Low lifecycle cost
 - Avoids all construction problems, inconveniences, noise, pollution, trucks, machinery, digging etc.
- C the best solution – everything is underground

pg. 1

Subject: Catherine St. and Lakeshore Rd.
Sewage pumping station

Addressed To: Amanda Beattie

From: Resident

Total number of pages including
cover page: Total 9 pages

Pg 2

Niagara Region

Public Information Centre #1: Catherine Street and Lakeshore Road Sewage Pumping Station

Which project are you commenting on?

- ☐ Catherine Street Sewage Pumping Station
- ☐ Lakeshore Road Sewage Pumping Station Municipal Class
Environmental Assessment
- ☒ Both

Provide any comments or questions you have.

Please see additional
Pages. Including cover page
Total of 9 Pages

pg. 3

City

- ☒ Fort Erie
- ☐ Grimsby
- ☐ Lincoln
- ☐ Niagara-on-the-Lake
- ☐ Niagara Falls
- ☐ Pelham
- ☐ Port Colborne
- ☐ St. Catharines
- ☐ Thorold
- ☐ Wainfleet
- ☐ Welland
- ☐ West Lincoln
- ☐ Other, please specify

Phone

Email

pg. 4

Alternative Evaluation

Option A - Upgrade Lakeshore Rd. SPS and Catherine St. SPS at existing locations and property footprints

- not a good choice - both are old aging buildings - Do not meet today's standards - buildings will require frequent updating and will not be able to keep up with the needs of future demands - will need to build new ones in the future
- need to decommission and relocate both

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

- not a viable solution

Option C - Lakeshore Rd. SPS remove control building and construct a new wet well, valve chamber and force main.
* Construct new Catherine St. SPS at adjacent lot to the east (NOT viable.)

Option C - continued on next page

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Option C - continued from previous page

- if this is the best solution for the Lakeshore Ppl. SPS - why would it not also be the best solution for the Catherine St. SPS.
- this only makes sense, both stations are old and are in need of repair and replacement
- do the same system of operation for both Lakeshore Ppl. and Catherine St. sites

Major Positives are:

- ① Environmental Factors
- ② Technical considerations
- ③ Summary Score

Minor Positives are:

- ① Social + cultural factors
- ② Economic considerations

- this is the most feasible solution
- cost effective
- can accommodate future growth and service needs
- more visual and aesthetic appeal
- less disruption to the community

Pg. 6

Option D - 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

- this option is not practical, viable and too expensive - not a feasible solution
- concentrate SPS in one area only
- too overwhelming for one pumping station
- it has too many negative issues that need to be considered, that would make this choice even possible issue - odour problems
- Negative Areas are

- ① Environmental Factors
- ② Social and Cultural Factors
- ③ Technical Considerations
- ④ Economic Considerations

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

- It's the same situation as Option D.
- but instead of SPS being located at Forsythe St. it will be on Catherine St.
- too overwhelming for one pumping station - You need to have two locations to meet the needs of a growing population
- Creates odour problem issue... in one area

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Option E - continued

- one system - too demanding - puts too much pressure and strain on the system
- will need to redo and update the system in the future (Catherine St) - not aesthetic -
- this option is not practical & viable
- too expensive - not a feasible solution
- Too many negative issues that need to be considered, that would make this choice possible

Negative Areas are:

- ① Environmental Factors
- ② Social and Cultural Factors
- ③ Technical Considerations
- ④ Economic Considerations

*Doesn't fit into surrounding area (neighbourhood)

Options F & G - Relocate Lakeshore Rd. SPS to south vacant property (West of Lakeshore Rd.) and relocate Catherine St. SPS to adjacent lot to the east

- Relocate Lakeshore Rd. SPS to south vacant property (East of Lakeshore Rd.)
- Relocate Catherine St. SPS to adjacent east lot.
- Relocating both is not the best option
- Too costly - can't accommodate future growth
- Environmental Factors

Pg. 8

Summary Evaluation for Lakeshore and Catherine Street Pumping Stations

Lakeshore commissioned in 1985

Catherine St. commissioned in 1981

Both Stations have already:

- undergone minor equipment replacements and various maintenance activities
- both sites indicate aging infrastructure
- Lakeshore - high maintenance costs
- Catherine St. - poor conditions - warranting the need for station upgrades
- both indicate increasing capacity demands
- since both have similar conditions, the logical solution is to use option C with some changes
- 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 (don't agree)
- Both sites benefit by:
 - removing the control building - will improve sewage pumping station aesthetics
 - cost effective alternatives
 - suits the existing infrastructure
 - accommodates future growth and service needs
 - reduces disruption to existing land infrastructure - utilizing owned regional

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continued with Summary Evaluation
for Lakeshore and Catherine Street
Pumping Stations

- eliminates the need to construct new Catherine St. SPS at adjacent lot to the east - saves money - cost effective -
- minimal environmental impacts to aquatic system and groundwater
- compatible with existing land use as no property acquisitions will be required
- improved aesthetics from removing the control building
- addresses colour and aesthetics issues from removal of the control building
- minimal geotechnical challenges
- ability to meet future flows
- no challenges to obtaining permits and approvals
- compatible with existing infrastructure
- low capital costs
- low lifecycle cost
- avoids all construction problems, inconveniences, noise, pollution, trucks, machinery, digging etc.
- C the best solution - everything is underground

November 15th, 2021

Re: Class Environmental Assessments for the Catherine Street and Lakeshore Road Sewage Pumping Stations – Response to Public Information Centre Comments

Dear Resident,

Thank you for providing your comments and feedback in response to the material presented on September 8th, 2021 at the Public Information Centre (PIC) for the Catherine Street Sewage Pumping Station (SPS) and Lakeshore Road SPS Class Environmental Assessments (EAs). We appreciate and value stakeholder input to these important studies.

As indicated in the PIC materials, the recommended solution was identified to be Option C and includes the following elements:

- **Lakeshore Road SPS** –station upgrades to accommodate aging infrastructure and includes construction of a new valve chamber and forcemain.
- **Catherine Street SPS** – construction of a new Catherine Street SPS at the adjacent lot to the east.

In review of the comments received we understand your concern in regards to 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. We understand you've expressed a preference for an underground solution at Catherine Street Station as opposed to the proposed solution of an aboveground structure. A new, above ground, control building is proposed for the Option C solution, rather than an underground solution, in order to meet the needs of the larger capacity required at the Catherine Street SPS as compared to the Lakeshore SPS.

Niagara Region values your input and is sensitive to the impacts on the surrounding community and will take the aesthetics of the new station into consideration during design.

We hope this helps clarify the rationale behind the Class EA recommendation for the Catherine Street SPS and Lakeshore Roads SPS.

Yours truly,

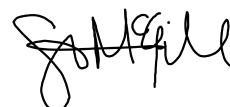
GM BLUEPLAN ENGINEERING LIMITED

Per:



Amanda Beattie, P.Eng., P.Geo., PMP
Project Manager, Partner
GM Blue Plan Engineering Limited

Per:



Stephanie McGill
Project Manager, Water and Wastewater
Services Division, Niagara Region

Samantha Morrisey - GM BluePlan

Subject: FW: Catherine Street Sewage Pumping Station

From: Amanda Beattie - GM BluePlan
Sent: Friday, May 06, 2022 10:58 AM
To: Rachael Malcolm <Rachael.Malcolm@constructconnect.com>
Subject: RE: Catherine Street Sewage Pumping Station

Good Morning Rachael,

Thank you for reaching out, we're in the final stages of completing the Project File Report and will be looking to file in the summer.

Detailed design has not been awarded yet, the Region will likely be proceeding with this in Fall 2022/Winter 2023.

Thanks,
Amanda

Amanda Beattie, P.Eng., P.Geo., CRL, CMRP, PMP
Project Manager, Partner

GM BluePlan Engineering Limited
1266 South Service Rd, Unit C3-1 | Stoney Creek, ON | L8E 5R9
c: 905.932.4844
amanda.beattie@gmblueplan.ca | www.gmblueplan.ca



From: Rachael Malcolm <Rachael.Malcolm@constructconnect.com>
Sent: Thursday, May 05, 2022 1:02 PM
To: Amanda Beattie - GM BluePlan <Amanda.Beattie@gmblueplan.ca>
Subject: Catherine Street Sewage Pumping Station

Hi Ms. Beattie,

I am just reaching out to follow up on the EA for the Catherine St Sewage Pumping Station for Niagara Region to find out when it is expected to wrap up? I also wanted to confirm if GM Blueplan will also be doing the detailed design?

Thanks,

Rachael Malcolm
Pre-Bid Researcher

tel: 905-752-5550



Catherine Street 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	2-Feb-21	1. Comment noted and filed 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)	8-Mar-21	NOC
Interested Resident	Local Resident	Local Resident	Region	Email	Noted interest in the Lakeshore Road SPS Study and requested to be added to the stakeholder list. Resient noted that they would likely have concerns reagrding any proposed solution.	30-Apr-21	1. Comment noted and filed (3-May-21) 2. The Region followed up with a phone call to further discuss the current project status. The Region noted that the project is in early stages of planning and filed comments regarding concerns with odour with the Lakeshore Road SPS (10-May-21)	10-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
Government Agency	Impact Assessment Agency of Canada	Sean Carriere	GMBP/Region	Letter	Letter noting that the project will not be required to submit an initial project description	27-Aug-21	1. Comment filed, no further action required	N/A	PIC
Indigenous Community	Mississaugas of the Credit First Nation	MCFN	GMBP/Region	Letter	Letter to acknowledge PIC notice (Sent Aug 26, 2021) and noted that the MCFN would like to be involved in development of the decision making. MCFN noted engagement would require providing transparency during the environemntal survey and archaeological assessment process through representation of a field liaison representative.	26-Nov-21	1. Comment filed 2. Field Representatives were contacted and present at archaeological field investigations	N/A	PIC
Local Resident	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 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
Local Business	Construct Connect	Rachael Malcolm	GMBP	Email	Inquired when the project is expected to be completed. Also inquire what firm will be completing the detailed design	5-May-21	1. Comment noted and filed , stakeholder added to the register 2. GMBP noted that the study is currently completing the Project File Report and is expected to be completed by Summer 2022	17-May-21	NOC

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

Catherine Street Sewage Pumping Station Schedule B Municipal Class Environmental Assessment Natural Heritage Report

for:



by:



**LGL Limited
environmental research associates**

**January 2023
LGL File TA9085**

prepared by:

Name	Title	Signature
Lynette Renzetti, B.Ed., Hons. B.Sc.	Senior Planning Ecologist	
Dave Smith, Dipl.	Fish and Wildlife Technician	
Justin Brodeur, B.Sc.	Ecologist, ISA Certified Arborist ON-2720A	

LGL Limited
environmental research associates
445 Thompson Drive, Unit 2
Cambridge, Ontario N1T 2K7
Tel: 519-622-3300 Fax: 519-622-3310
Email: cambridge@lgl.com
URL: [LGL Limited](#)

Version History:

Date	Version
November 2021	Draft
January 2023	Final

January 2023
LGL File TA9085

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Appendix B Species at Risk Habitat Screening

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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 Catherine Street Sewage Pumping Station (SPS) located at 8 Catherine Street in the Town of Fort Erie. The SPS was originally constructed in 1981 and according to recommendations made in the 2016 Water and Wastewater Master Servicing Plan (GM BluePlan, 2017) the SPS is in need of upgrading to address the need for increased operational capacity and wet weather constraints.

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

In addition to 8 Catherine Street, the Region owns the currently vacant adjoining property at 263 Niagara Boulevard. These two properties comprise the bulk of the study area for the natural heritage assessment carried out by LGL Limited. However, given that the existing SPS includes a passive overflow to the Niagara River, the desktop assessment also includes consideration for aquatic habitat associated with the river. The project area as displayed in **Figure 1** includes the Region owned properties on Catherine Street and Niagara Boulevard as well as 120 m of adjacent lands to consider natural features and functions within and in proximity to the existing SPS.

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



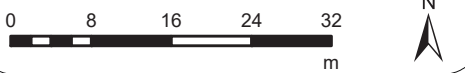
LEGEND

-  Subject Lands
-  Box Culvert
-  Shoreline
-  Core Natural Heritage: Environmental Conservation Area
-  Aquatic Resource Area (GU-9001-UNR)
-  Waterfowl Winter Concentration Area

Note: Whole extent is within Important Bird Area: Niagara River Corridor



Data sources: Ministry of Natural Resources and Forestry, Regional Municipality of Niagara, Niagara Peninsula Conservation Authority, Bird Studies Canada. Contains information licenced under the Open Government Licence - Ontario



**Catherine Street SPS
Schedule B EA
Natural Heritage**



Project: TA9085	Figure: 1
Date: November, 2021	Prepared By: JJP
Scale: 1 : 750	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).

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.

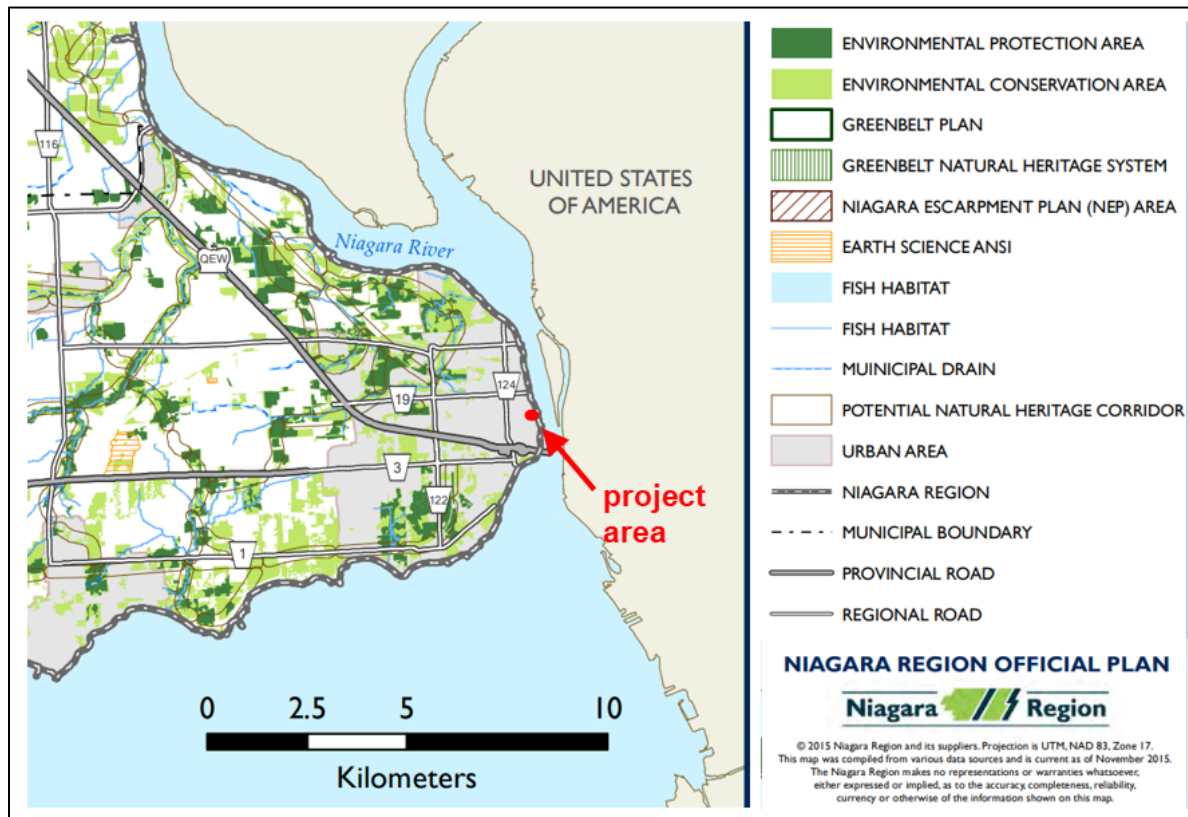
2.1.9 Nothing in policy 2.1 is intended to limit the ability of agricultural uses to continue.

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

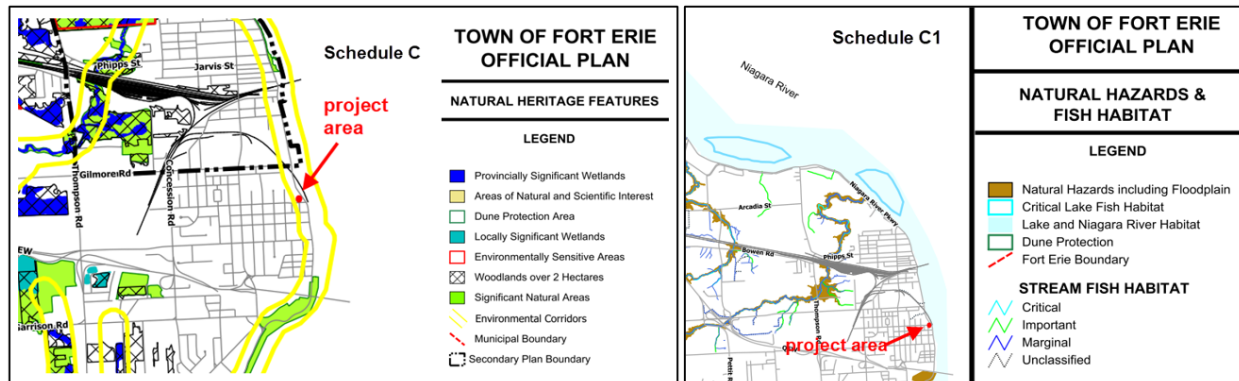
2.4.1 Region of Niagara Official Plan (2014)

The study area is located within the urban area according to Schedule C Core Natural Heritage mapping shown below (Niagara Region, 2014). The Niagara River is also shown to support fish habitat.



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, but not part of a Significant Natural Area. Schedule C1 Natural Hazards and Fish Habitat does not identify any stream habitat within the project area, nor does it identify any critical habitat in the Niagara River in proximity to the project area.



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.”

Environmental Corridors are further referenced in Section 8.3.1 of the Official Plan 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.

The Fort Erie Natural Areas Inventory includes mapping of vegetation communities in settlement areas; however, no data is provided for the urban areas in proximity to the project area (Map 3 in Dougan, 2003). None of the locally significant natural areas (Map 5 in Dougan, 2003) include the project area. As shown in **Figure 1** and consistent with the Environmental Corridor defined in the Town of Fort Erie Official Plan, the project area is within the linkage corridor associated with the Niagara River and part of the natural heritage system.

2.5 Niagara Peninsula Conservation Authority

The existing SPS is outside of areas shown to be regulated 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);
- Department of Fisheries and Oceans (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 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.

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.

No significant woodlands are identified within the subject lands or adjacent areas in the Niagara Region Official Plan or Town of Fort Erie Official Plan.

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; however, no data is provided for the urban areas in proximity to the project area (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 Catherine Street property is occupied by the fenced SPS building, paved access and parking. The Niagara Boulevard property is also lacking vegetation communities. A large proportion of the site is devoid of vegetation (gravel/dirt) with manicured grass fronting Niagara Boulevard. A line of mature trees border both sites along the northern edge. The canopies of these trees overhang onto neighbouring properties. The banks of the river are occupied by manicured parkland (mature trees and mowed lawn). Field reconnaissance by LGL Limited will be used to confirm site conditions.

3.4 Wildlife and Wildlife Habitat

A total of 99 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.

Eleven of these bird species identified are listed under the Fish and Wildlife Conservation Act (FWCA) and 72 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 MBCA, 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 120m 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 specific to the overflow were not available at the time of reporting; however, there is potential that additional storage will be part of the design given the space available at the site.

Fisheries records were obtained from the MNRF database for the Niagara River (GU-9001-UNR in). 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 for Upper Niagara River (GU-9001-UNR, Figure 1)

Common Name	Scientific Name	Thermal Regime	Tolerance	SARA Status	SARO Status
Brown Bullhead	<i>Ameiurus nebulosus</i>	warmwater	intermediate		
Brown Trout	<i>Salmo trutta</i>	coldwater	intolerant of turbidity, siltation, pollution		
Freshwater Drum	<i>Aplodinotus grunniens</i>	warmwater	tolerant		
Lake Trout	<i>Salvelinus namaycush</i>	coldwater	intolerant		
Largemouth Bass	<i>Micropterus salmoides</i>	warmwater	tolerant; moderately tolerant of turbidity		
Muskellunge	<i>Esox masquingy</i>	warmwater	intermediate		
Rainbow Smelt	<i>Osmerus mordax</i>	coldwater	intermediate		
Rainbow Trout	<i>Oncorhynchus mykiss</i>	coldwater	intolerant		
Smallmouth Bass	<i>Micropterus dolomieu</i>	coolwater	moderately tolerant		
Walleye	<i>Sander vitreus</i>	coolwater	intermediate		
White Bass	<i>Morone chrysops</i>	warmwater	tolerant		
White Sucker	<i>Catostomus commersonii</i>	coolwater	tolerant; moderately tolerant of turbidity		
Yellow Perch	<i>Perca flavescens</i>	coolwater	moderately tolerant		

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 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 NHIC which organizes data into a 1 km x 1 km grid. The project area is located within Square ID 1045537. The database search returned records for five endangered species: Eastern Pondmussel (*Ligumia nasuta*); 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 the DFO's Aquatic Species at Risk Mapping was conducted for the study area. No critical habitat for aquatic SAR was found 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 8 Catherine Street and 263 Niagara Boulevard was completed on November 9, 2021.

4.1 Vegetation and Vegetation Communities

No natural vegetation communities were observed within the study area (**Figure 2**). The site is comprised of manicured grass, gravel parking lot, a small pump building and a hedge row of Manitoba Maple along the northern limits of the Region owned properties.

4.2 Tree Inventory

An inventory of tree resources within and in proximity to the Region owned properties at 8 Catherine Street and 263 Niagara Boulevard was conducted on November 9, 2021. The tree inventory was completed to provide recommendations with regard to tree protection. The results of the 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 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. 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 ± 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.



LEGEND

-  Tree
-  Existing Sewer
-  Proposed Open Cut Sewer
-  Box Culvert
-  Disturbance Area



Data sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry, Regional Municipality of Niagara, Contains information licenced under the Open Government



Catherine Street SPS
Schedule B EA
Preferred Alternative



Project: TA9106	Figure: 2
Date: November, 2021	Prepared By: JJP
Scale: 1 : 750	Checked By: LRE

Surveyed trees were screened for rare species as referenced by 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 24 trees were identified and assessed during the tree inventory. Trees within the study area ranged in size from 10-55 cm DBH and ranged from good to poor condition. The majority of trees were located on the northern property boundary, consisting primarily of Manitoba maple (*Acer negundo*). These trees 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 is limited on site to the manicured grasses, shrubs and trees along the northern limit of the study area. No wildlife species were observed during the site visit in August 2021. Bird species (and their nests) afforded protection under the MBCA may nest in trees and/or on buildings located within the 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 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, found approximately 75 m east of the study area (**Figure 1**). As noted above, given the level of disturbance and lack of natural cover noted within the study area and across the local landscape, no corridor/ecological linkage function for wildlife is anticipated specific to the Region owned parcels. No species at risk or habitat suitable to support them was identified within the study area.

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 8 Catherine Street and the neighbouring parcel at

263 Niagara Boulevard (**Figure 2**). The preferred design makes use of an existing sewer to connect flows from the Lakeshore SPS. Although no in-water or near water works are identified as part of the preferred alternative, given the proximity and connection (overflow) of the site to the Niagara River, mitigation to protect surface water quality and fish habitat within the river will be important to the project. 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 parcels at 8 Catherine Street and 263 Niagara Boulevard as shown in **Figure 2**. This area is expected to accommodate an expanded SPS footprint, access, staging area, and surrounding disturbance. The area is comprised of an existing gravel parking lot, manicured grass and open grown/planted trees. No naturalized vegetation communities are found within the site; therefore, no impact to vegetation communities is associated with the proposed works. Individual open grown/planted trees may be in conflict with the preferred alternative. Additional trees in proximity to the site 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 site and surrounding areas are species that are tolerant of anthropogenic disturbance. The proposed area for footprint expansion is on the east side of the existing SPS in an area of manicured grass and compacted soils covered with gravel. 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 autumn 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 defined. 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, it is assumed that groundwater volumes will be relatively small, and that discharge will be treated prior to release. Where a need for dewatering is identified, measures to protect water quality of the ultimate receiver (watercourse/drain) should be identified in a Dewatering Plan and dewatering discharge points shown in the Erosion and Sediment Control Plan. Where the receiver is identified to provide fish habitat (e.g., Niagara River), additional mitigation for water quality and quantity may be required.

6.0 Summary

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 is considered low. LGL recommends that the mitigation measures (e.g., construction timing windows, tree protection fencing) be refined at detail design and included on tender documents. Where the recommended mitigation can be employed effectively, no residual impact to natural heritage or tree resources is anticipated.

At the time of reporting, details regarding changes to the existing emergency overflow (volume, quality, need for in-water or near water work) to the Niagara River were not available; therefore, the impact assessment and mitigation recommendations presented herein assume that no change to existing conditions are proposed in that regard.

7.0 References

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Appendix A Wildlife List

Appendix A Table 1 Wildlife Species List – Catherine Street SPS Study Area.

Type	Scientific Name	Common Name	G-Rank	S-Rank	Schedule	SARA	SARO	eBird - Catherine St. Parking Area	eBird - Lavinia St. Parking Area	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			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>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			X
Bird	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S2N,S4B			SC	X	X		P	
Bird	<i>Meqaceryle alcyon</i>	Belted Kingfisher	G5	S4B				X	X		P	
Bird	<i>Melanitta americana</i>	Black Scoter	G5	S4B, S4N				X	X			
Bird	<i>Poecile atricapillus</i>	Black-capped Chickadee	G5	S5				X	X			X
Bird	<i>Rissa tridactyla</i>	Black-legged Kittiwake	G5	SNA				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>Certhia americana</i>	Brown Creeper	G5	S5B				X				X
Bird	<i>Molothrus ater</i>	Brown-headed Cowbird	G5	S4B				X				
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>Thryothorus ludovicianus</i>	Carolina Wren	G5	S4				X				X
Bird	<i>Hydroprogne caspia</i>	Caspian Tern	G5	S3B				X	X			X
Bird	<i>Chaetura pelagica</i>	Chimney Swift	G5	S4B,S4N	Schedule 1	THR	THR	X				X
Bird	<i>Bucephala clangula</i>	Common Goldeneye	G5	S5				X	X			X
Bird	<i>Quiscalus quiscula</i>	Common Grackle	G5	S5B				X	X			
Bird	<i>Gavia immer</i>	Common Loon	G5	S5B,S5N				X	X			X
Bird	<i>Merqus merganser</i>	Common Merganser	G5	S5B,S5N				X	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			P	
Bird	<i>Junco hyemalis</i>	Dark-eyed Junco	G5	S5B				X	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>Thalasseus elegans</i>	Elegant Tern						X				
Bird	<i>Sturnus vulgaris</i>	European Starling	G5	SNA				X	X			
Bird	<i>Leucophaeus pipixcan</i>	Franklin's Gull						X	X			
Bird	<i>Sterna forsteri</i>	Forster's Tern	G5	S2B				X				X
Bird	<i>Anas strepera</i>	Gadwall	G5	S4				X	X			X
Bird	<i>Larus hyperboreus</i>	Glaucous Gull	G5	S4N				X	X			
Bird	<i>Regulus satrapa</i>	Golden-crowned Kinglet	G5	S5B				X	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
Bird	<i>Ardea alba</i>	Great Egret	G5	S2B				X	X			X
Bird	<i>Aythya marila</i>	Greater Scaup	G5	S4				X	X			X
Bird	<i>Histrionicus histrionicus</i>	Harlequin Duck	G4	SNA					X			

Type	Scientific Name	Common Name	G-Rank	S-Rank	Schedule	SARA	SARO	eBird - Catherine St. Parking Area	eBird - Lavinia St. Parking Area	NHIC	FWCA	MBCA
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>Eremophila alpestris</i>	Horned Lark	G5	S5B				X				X
Bird	<i>Haemorhous mexicanus</i>	House Finch	G5	SNA				X	X			X
Bird	<i>Passer domesticus</i>	House Sparrow	G5	SNA				X	X			
Bird	<i>Larus glaucoides</i>	Iceland Gull	G5	S4N				X	X			
Bird	<i>Somateria spectabilis</i>	King Eider	G5	SHB				X	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>Clanula hyemalis</i>	Long-tailed Duck	G5	S3B				X	X			X
Bird	<i>Anas platyrhynchos</i>	Mallard	G5	S5				X	X			X
Bird	<i>Falco columbarius</i>	Merlin	G5	S5B				X	X		P	
Bird	<i>Zenaida macroura</i>	Mourning Dove	G5	S5				X	X			X
Bird	<i>Cyanus olor</i>	Mute Swan	G5	SNA				X	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>Circus cyaneus</i>	Northern Harrier	G5	S4B				X			P	
Bird	<i>Mimus polyglottos</i>	Northern Mockingbird	G5	S4				X				X
Bird	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	G5	S4B					X			X
Bird	<i>Pandion haliaetus</i>	Osprey	G5	S5B				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			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>Melanerpes carolinus</i>	Red-bellied Woodpecker	G5	S4				X	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 griseqena</i>	Red-necked Grebe	G5	S3B,S4N				X	X			X
Bird	<i>Phalaropus lobatus</i>	Red-necked Phalarope	G4G5	S3S4B	Schedule 1	SC	SC	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			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			X
Bird	<i>Columba livia</i>	Rock Pigeon	G5	SNA				X	X			
Bird	<i>Regulus calendula</i>	Ruby-crowned Kinglet	G5	S4B				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	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>Melospiza melodia</i>	Song Sparrow	G5	S5B				X				X
Bird	<i>Actitis macularius</i>	Spotted Sandpiper	G5	S5				X				X
Bird	<i>Melanitta perspicillata</i>	Surf Scoter	G5	S4B,S4N				X	X			X
Bird	<i>Tachycineta bicolor</i>	Tree Swallow	G5	S4B					X			X
Bird	<i>Cyanus buccinator</i>	Trumpeter Swan	G4	S4					X			X

Type	Scientific Name	Common Name	G-Rank	S-Rank	Schedule	SARA	SARO	eBird - Catherine St. Parking Area	eBird - Lavinia St. Parking Area	NHIC	FWCA	MBCA
Bird	<i>Baeolophus bicolor</i>	Tufted Titmouse	G5	S4				X				X
Bird	<i>Cyanus columbianus</i>	Tundra Swan	G5	S4				X	X			X
Bird	<i>Cathartes aura</i>	Turkey Vulture	G5	S5B				X	X		P	
Bird	<i>Melanitta fusca</i>	White-winged Scoter	G5	S4B,S4N				X	X			X
Bird	<i>Aix sponsa</i>	Wood Duck	G5	S5				X				X
Bird	<i>Setophaga palmarum palmarum</i>	Palm Warbler	G5TU	S1B				X				X
Bird	<i>Setophaga coronata</i>	Yellow-rumped Warbler	G5	S5B				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

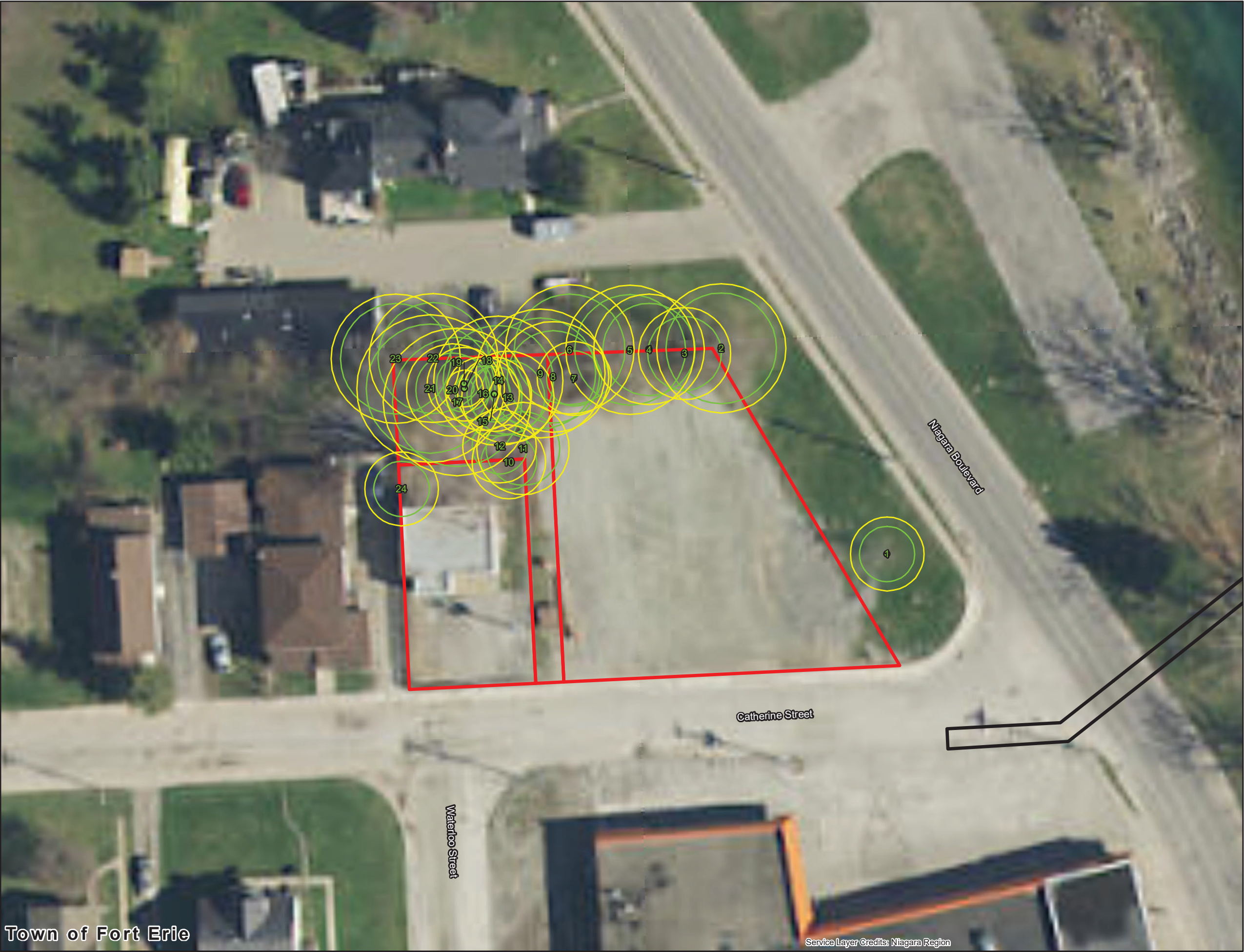
Appendix B Species at Risk Habitat Screening

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 (<i>Morus rubra</i>)	END /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	END /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	Chimney Swift (<i>Chaetura pelagica</i>)	THR /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 commonly 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.	No observations of the species during the August 2021 field visit. No removal of anthropogenic structures with suitable chimneys for nesting or roosting is proposed. No vegetation removal proposed during the breeding season for birds.	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 (<i>Podiceps auratus</i>)	Special Concern/ESA protections do not apply	eBird	The horned grebe breeds in small freshwater ponds, marshes or lake inlets, which includes man-made ponds. Preferred habitat has a mixture of open water and emergent vegetation and is usually less than 10 ha in size. The horned grebe builds a cryptic floating nest in the shallows not far from open water.	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 (<i>Falco peregrinus</i>)	Special Concern/ESA protections do not 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.

Group	Species	SARO Status/ ESA Protection	Data Source	Habitat Description	Habitat Potential within the Study Area	Further Effort Recommended in Detail Design
Bird	Red-necked Phalarope (<i>Phalaropus lobatus</i>)	Special Concern/ESA protections do not 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	Lake Sturgeon (Great Lakes – Upper St. Lawrence population) (<i>Acipenser fulvescens</i>)	Endangered/ Species and General 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.
Mussel	Eastern Pondmussel (<i>Ligumia nasuta</i>)	Special Concern/ESA protections do not apply	NHIC	In Ontario, Eastern Pondmussel's preferred habitat is sheltered areas of lakes or slow streams in substrates of fine sand and mud at depths up to 4.5 metres.	The Niagara River record for Eastern Pondmussel is from 1983 (COSEWIC Assessment and Status Report 2017). Follow up surveys ten years later did not find any individuals of the species. Habitat potential within the river in proximity to the project is considered low.	No in-water works proposed. No further effort recommended.

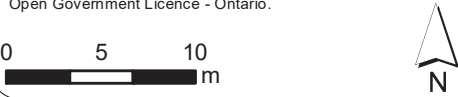
Appendix C Tree Inventory Results



LEGEND

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

Data Sources: LGL Limited field survey & Ministry of Natural Resources and Forestry Contains information licenced under the Open Government Licence - Ontario.



Catherine Street SPS
Schedule B EA
Tree Resources



Project: TA9085	Figure: C-1
Date: November, 2021	Prepared By: JJP
Scale: 1 : 400	Checked By: LRE

Project: TA9085
 Client: GM Blue Plan Engineering Limited
 Collectors: JPB
 Date: November 9, 2021
 Area: Catherine Street SPS

Tree #	Scientific Name	Common Name	DBH (cm)	Additional Stems	CONDITION				Location		TPZ (m)	COMMENTS
					TI	CS	CV	Radial Dripline (m)	Number	Street		
1	Fraxinus pennsylvanica	red ash	25.0	N/A	p	g	p	3	ROW	Niagara Boulevard	4.00	Epicormic, majority of crown dead
2	Acer negundo	Manitoba maple	55.0	14,8	g	f	g	6	263	Niagara Boulevard	7.00	Boundary tree
3	Acer negundo	Manitoba maple	12.0	10,10	g	f	g	4	263	Niagara Boulevard	5.00	N/A
4	Acer negundo	Manitoba maple	18.0	16,10,8	f	p	g	5	263	Niagara Boulevard	6.00	Heavy lean on all trunks, Boundary tree
5	Acer negundo	Manitoba maple	36.0	29,26	g	f	g	6	263	Niagara Boulevard	7.00	Boundary tree
6	Acer negundo	Manitoba maple	36.0	N/A	g	f	g	6	263	Niagara Boulevard	7.00	Boundary tree
7	Malus pumila	apple	19.0	N/A	f	f	g	3	263	Niagara Boulevard	4.00	Lean, wound at base
8	Acer negundo	Manitoba maple	23.0	14	f	f	p	5	263	Niagara Boulevard	6.00	Main stem dead
9	Acer negundo	Manitoba maple	20.0	19	f	f	g	6	263	Niagara Boulevard	7.00	Heavy lean, wound at base
10	Acer negundo	Manitoba maple	10.0	8,7,6	g	p	g	3	263	Niagara Boulevard	4.00	Topped/pruned
11	Acer negundo	Manitoba maple	11.0	7,5,4	f	f	g	4	263	Niagara Boulevard	5.00	N/A
12	Acer negundo	Manitoba maple	15.0	9	f	f	g	3	263	Niagara Boulevard	4.00	Trunk growing through fence
13	Acer negundo	Manitoba maple	17.0	N/A	f	f	g	4	263	Niagara Boulevard	5.00	Wound on trunk
14	Acer negundo	Manitoba maple	33.0	N/A	g	g	g	6	263	Niagara Boulevard	7.00	N/A
15	Acer negundo	Manitoba maple	24.0	N/A	g	f	g	3	263	Niagara Boulevard	4.00	N/A
16	Acer negundo	Manitoba maple	13.0	N/A	f	p	p	3	263	Niagara Boulevard	4.00	Trunk snapped at base of crown
17	Acer negundo	Manitoba maple	35.0	N/A	g	g	g	7	263	Niagara Boulevard	8.00	N/A
18	Acer negundo	Manitoba maple	10.0	N/A	f	p	f	1	263	Niagara Boulevard	2.00	Lost leader
19	Acer negundo	Manitoba maple	15.0	N/A	f	p	p	3	263	Niagara Boulevard	4.00	Majority of crown dead
20	Acer negundo	Manitoba maple	18.0	N/A	g	f	g	4	263	Niagara Boulevard	5.00	N/A
21	Acer negundo	Manitoba maple	38.0	N/A	g	p	g	7	263	Niagara Boulevard	8.00	Crown poorly balanced, severe lean
22	Acer negundo	Manitoba maple	23.0	N/A	g	f	g	6	263	Niagara Boulevard	7.00	Lean, Boundary tree
23	Acer saccharum ssp. saccharum	sugar maple	45.0	N/A	g	f	g	6	263	Niagara Boulevard	7.00	Boundary tree
24	Acer negundo	Manitoba maple	12.0	N/A	g	g	g	3	263	Niagara Boulevard	4.00	N/A

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:

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4 April 2022

Distribution List

1 PDF copy - Regional Municipality of Niagara

1 PDF copy - Ministry of Heritage, Sport, Tourism and Culture Industries

1 PDF copy - Golder Associates Ltd.

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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Acknowledgements

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1.0 PROJECT CONTEXT

1.1 Development Context

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).

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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 17th century and beginning of the 18th 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 18th 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-19th 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 19th 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 20th 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 19th century cartographic resources and land registry data as well as 20th 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-19th 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 20th 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
Located within 1 km of portion of study area consisting of Catherine Street SPS					
AfGr-1	Orchid	Post-Contact; Woodland, Late; 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; Woodland, Late; Woodland, Middle	Indigenous	unknown; midden	-
AfGr-8	Lavinia	Woodland, Middle	Indigenous	-	Further CHVI
AfGr-9	Peace Bridge	Archaic, Late	Indigenous; Broad Point; Genessee	domestic; grave; processing; quarry; special purpose; spiritual / ceremonial	Further CHVI
AfGr-99	-	-	-	-	-
Located within 1 km of portion of study area consisting of Lakeshore Road SPS					
*AfGr-1	Orchid	Post-Contact; Woodland, Late; 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; Woodland, Late; Woodland, Middle	Indigenous	unknown; midden	-
*AfGr-9	Peace Bridge	Archaic, Late	Indigenous; Broad Point; Genessee	domestic; grave; processing; quarry; special purpose; 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 17th 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 m² and resulted in the recovery of 375 pre-contact Indigenous artifacts dating from the Late Archaic Period through the 17th 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 19th 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.

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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



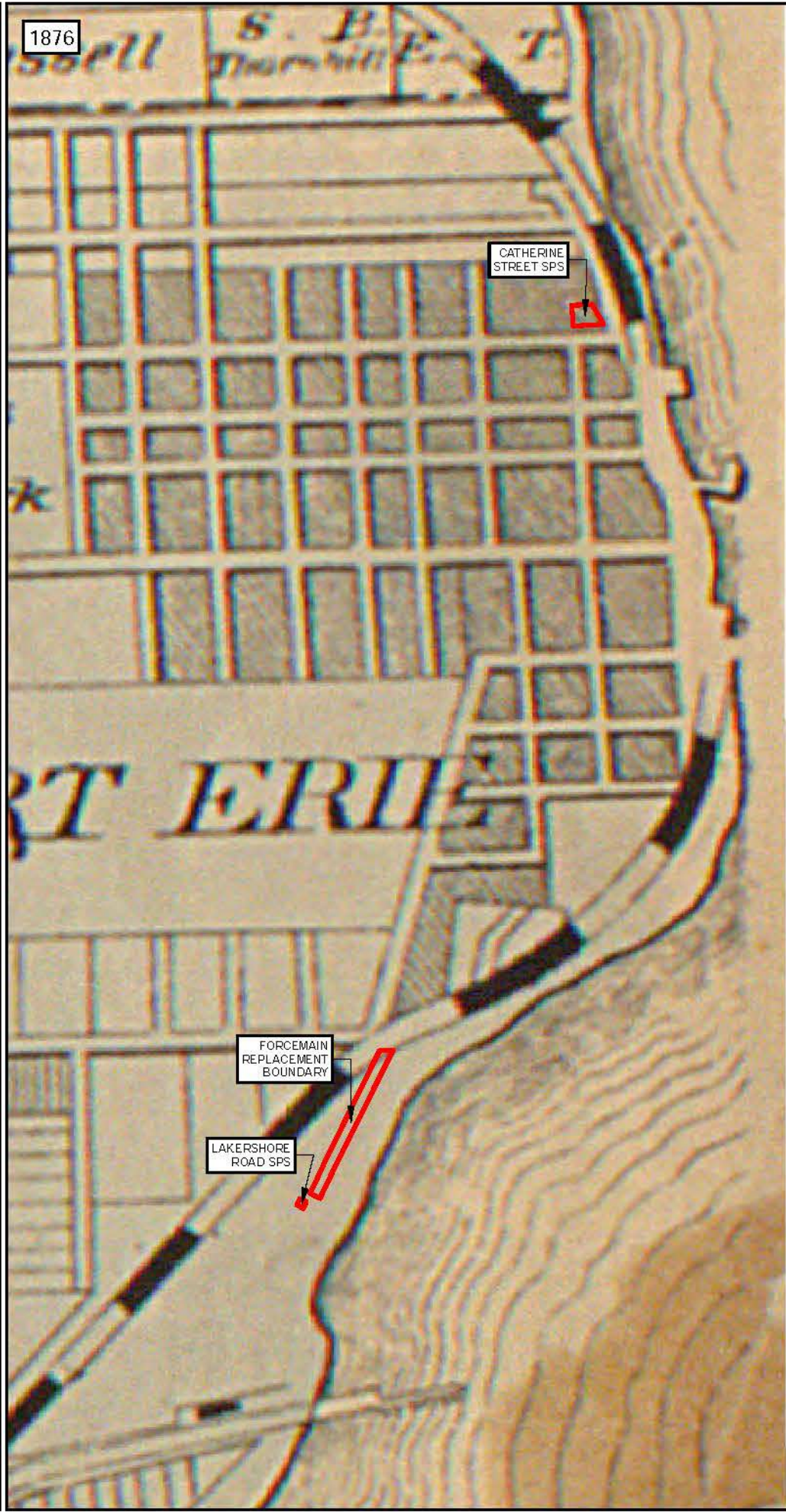
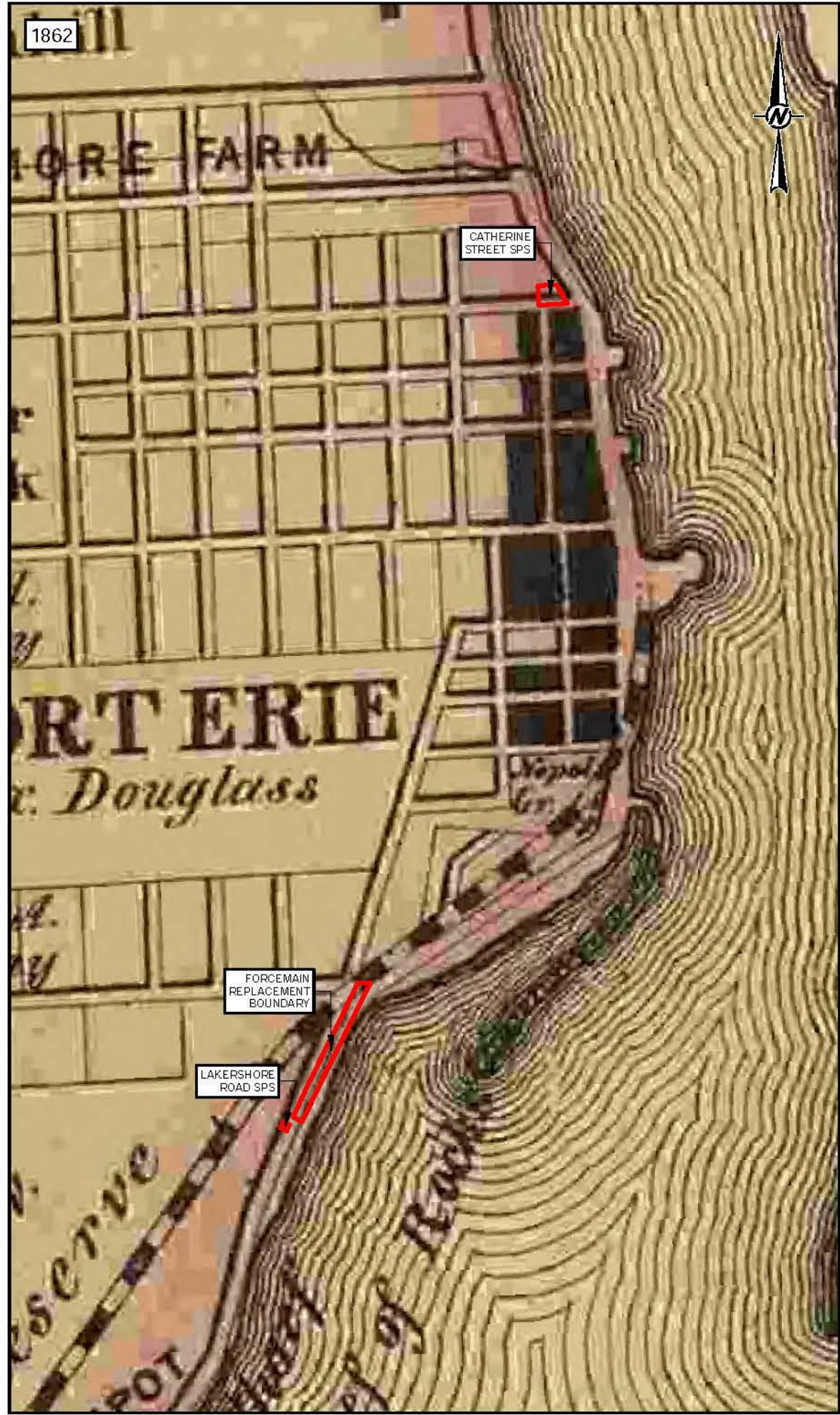
Image 15: View of manicured lawns west of Lakeshore Road, exhibiting archaeological, facing north



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.



SCALE 1:50,000

LEGEND

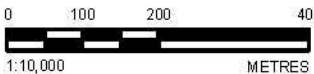
 STUDY AREA

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

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3. 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
4. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83
COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28



CLIENT
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PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: SCHEDULE "B"
CLASS EA, CATHERINE STREET AND LAKESHORE ROAD
SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO
TITLE
STUDY AREA OVERLAID ON 1862 AND 1876 HISTORICAL MAPS

CONSULTANT	YYYY-MM-DD	4/4/2022
 GOLDER	DESIGNED	AM
MEMBER OF WSP	PREPARED	BR
	REVIEWED	RF
	APPROVED	MT

PROJECT NO. 21490136	CONTROL 0002	REV. A	MAP 2
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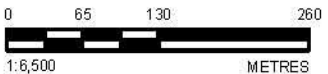


SCALE 1:50,000

LEGEND
 STUDY AREA

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
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<[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/)>
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COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28



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NIAGARA REGION

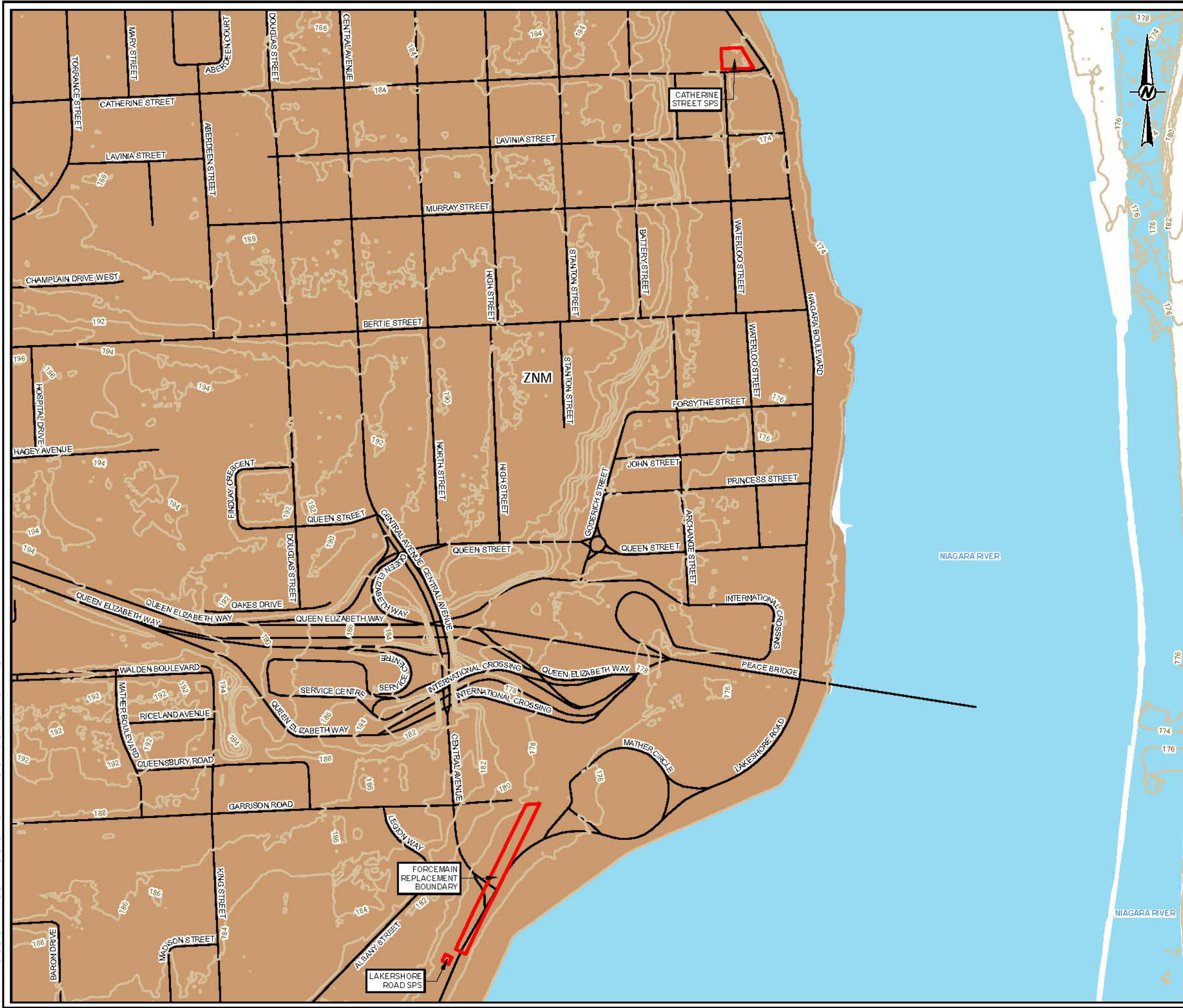
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT: SCHEDULE "B"
CLASS EA, CATHERINE STREET AND LAKERSHORE ROAD
SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO
TITLE
STUDY AREA OVERLAID ON 1934 AERIAL PHOTOGRAPH

CONSULTANT	YYYY-MM-DD	4/4/2022
 GOLDER MEMBER OF WSP	DESIGNED	AM
	PREPARED	BR
	REVIEWED	RF
	APPROVED	MT

PROJECT NO. 21490136	CONTROL 0002	REV. A	MAP 3
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IF THE MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm

Part of the Region of Niagara, Ontario, Canada, is shown. The map is a reproduction of a map published by the Government of Ontario, and the Government of Ontario is not responsible for any errors or omissions. The map is a reproduction of a map published by the Government of Ontario, and the Government of Ontario is not responsible for any errors or omissions.



KEY MAP

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)

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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 LAKESHORE ROAD

SEWAGE PUMPING STATIONS, FORT ERIE, ONTARIO

TITLE

SOILS AND ELEVATION WITHIN THE STUDY AREA

CONSULTANT	YYYY-MM-DD	4/4/2022
DESIGNED	AM	
PREPARED	BR	
REVIEWED	RF	
APPROVED	MT	

PROJECT NO. 21490136

CONTROL 0002

REV. A

MAP 4

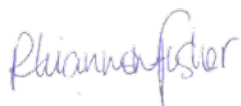
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IF THE MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

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

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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
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21490136-1000-R01-Rev0

4 April 2022

Distribution List

1 PDF copy - Regional Municipality of Niagara

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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>
Sent: October 16, 2021 12:30 PM
To: Fisher, Rhiannon <Rhiannon_Fisher@golder.com>
Subject: Fort Erie

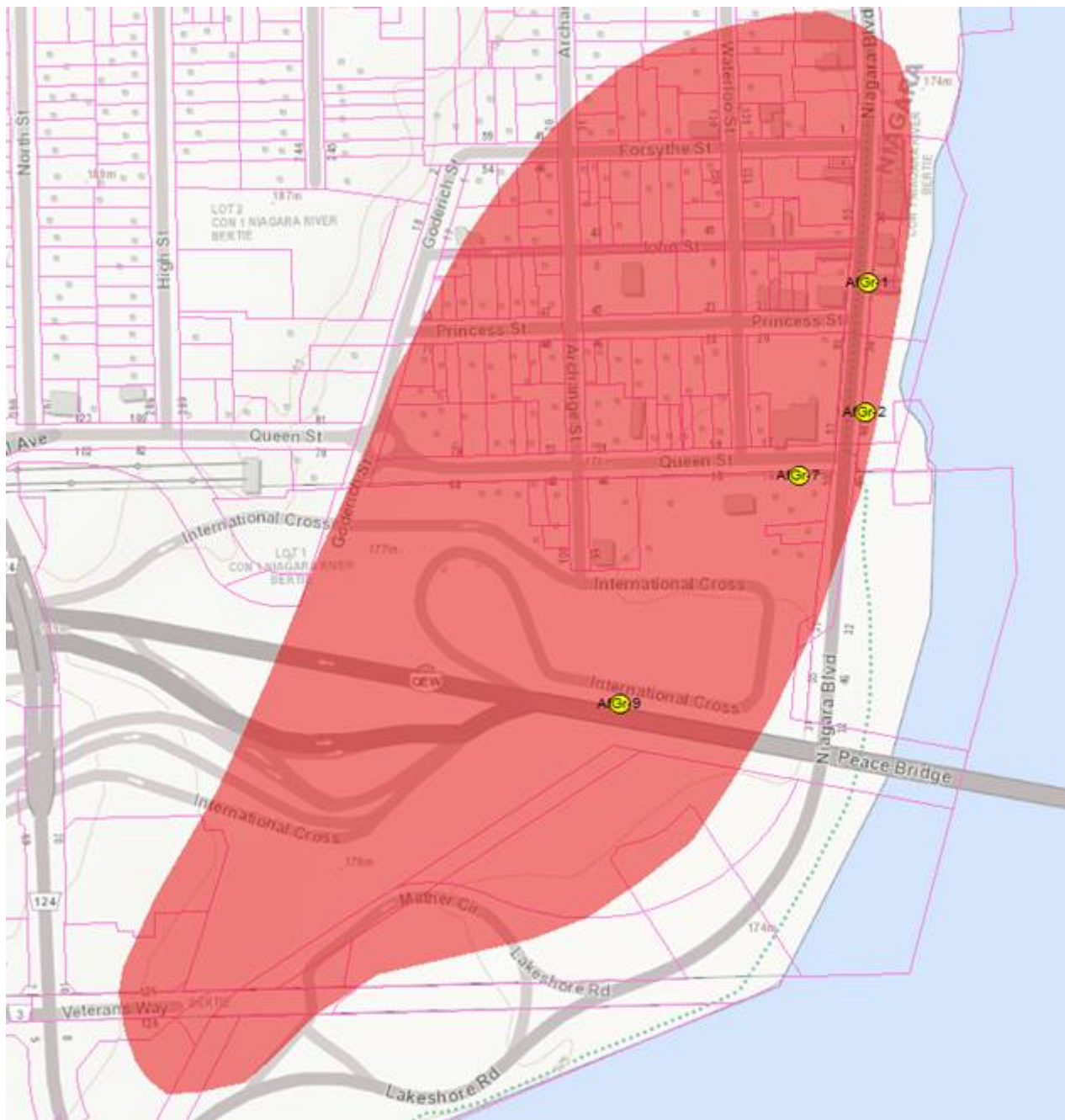
EXTERNAL EMAIL

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
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Signature Page

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Archaeology Team Lead, GTA and Southwestern Ontario



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

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

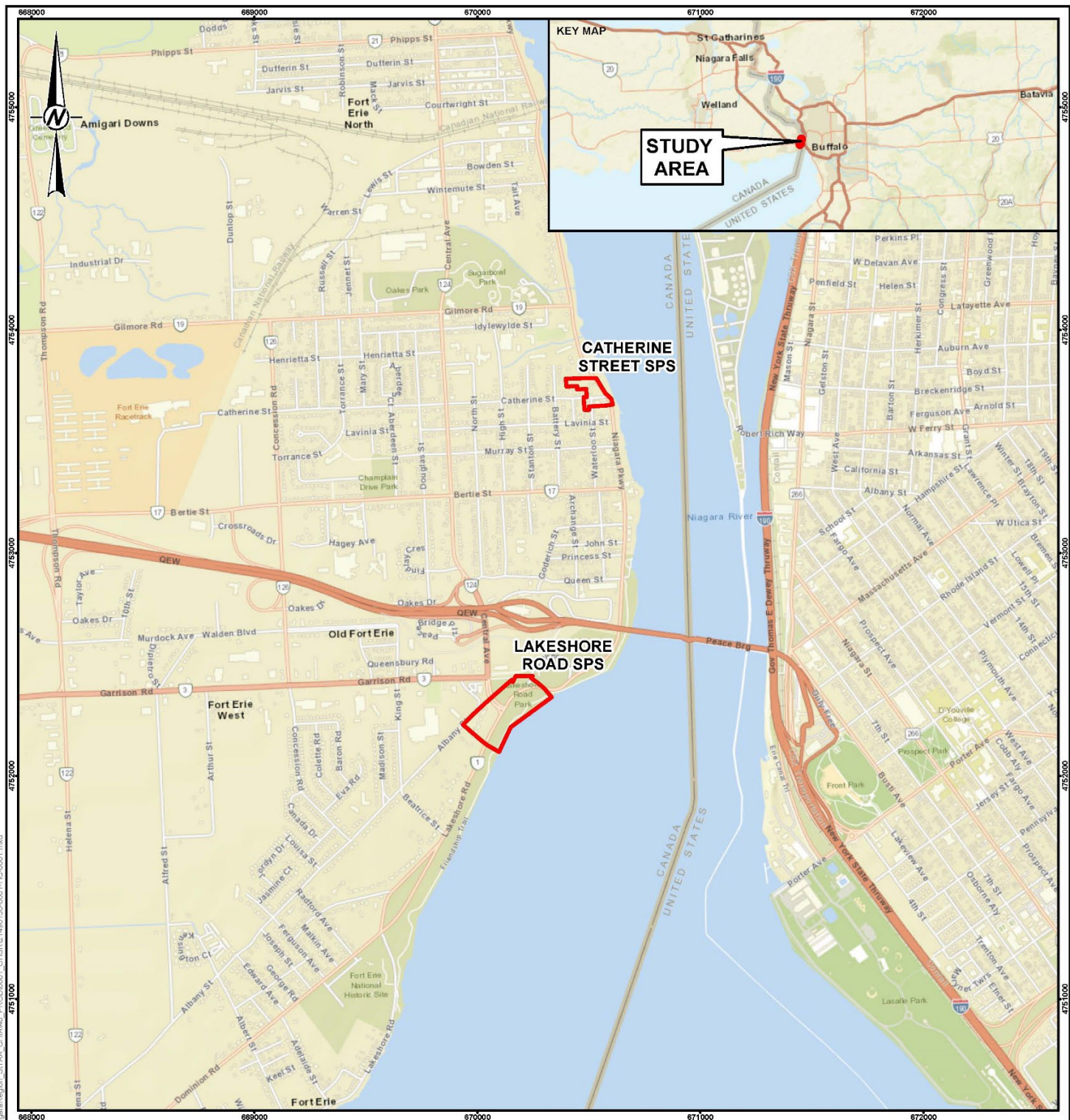
In September 2021, the Regional Municipality of Niagara (Niagara Region) retained Golder Associates Ltd. (Golder) to provide a Cultural Heritage Screening Report (CHSR) to support a Schedule “B” Municipal Class Environmental Assessment (EA) to assess alternative solutions for the Catherine Street and 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

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FIGURE
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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 property¹; 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) 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/>)
 - 20th 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©

¹ 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.

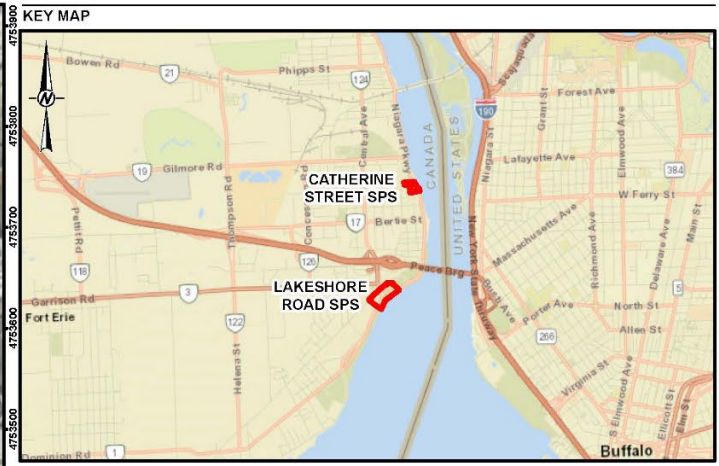
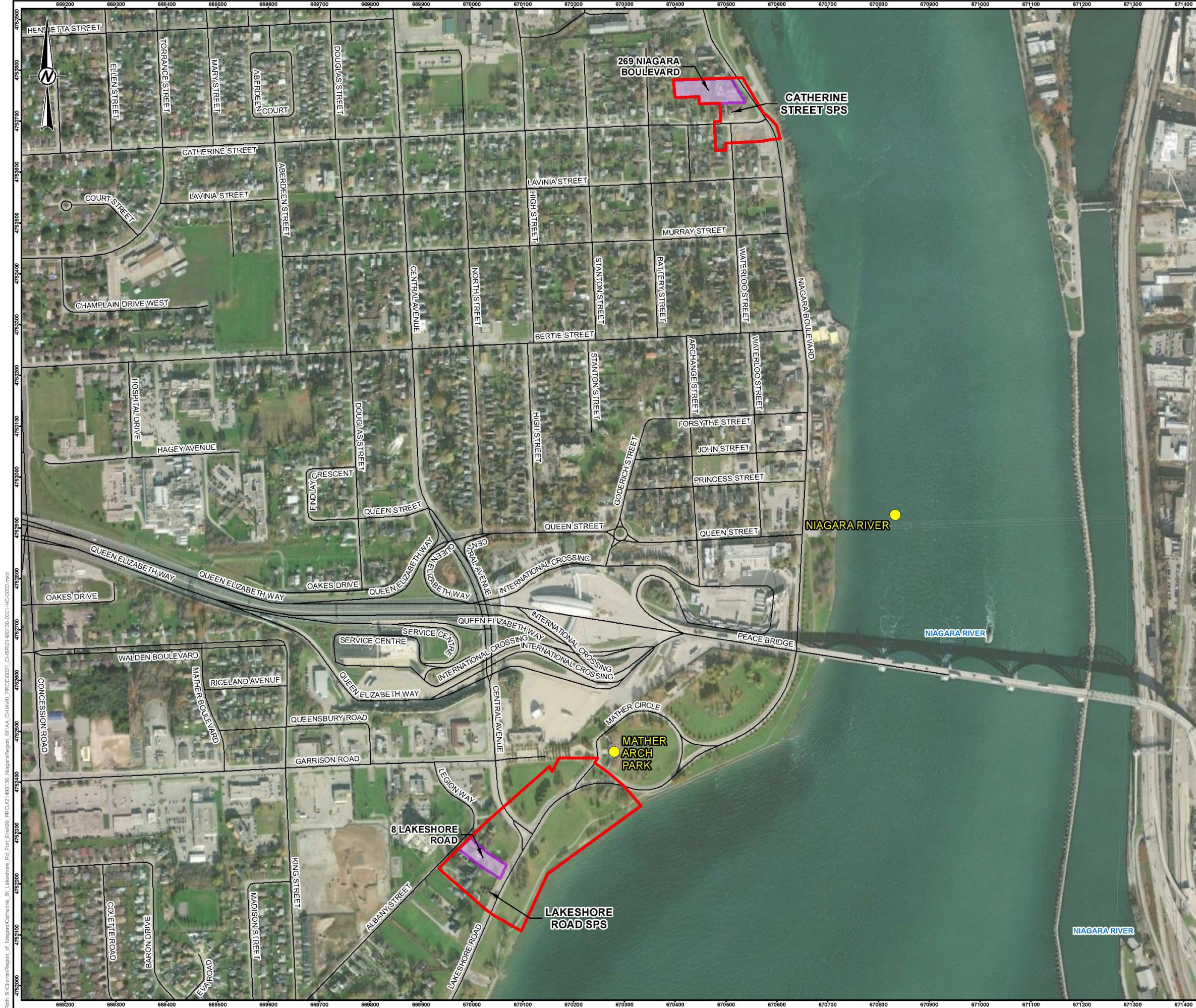
3.3 Assessment of Study Area

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. Detached, two-storey, horizontal siding house possibly represented by wooden structure on historical 1907 topographic map.	Potential built heritage resource	Indirect/adjacent: 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		Property with buildings or structures 40 or more years old. Detached, two-and-a-half storey, horizontal siding house possibly represented by wooden structure on historical 1907 topographic map.	Potential built heritage resource	Indirect/ adjacent: Proposed work at Lakeshore Road SPS is adjacent to the property parcel
Mather Arch Park (11 Niagara Parkway)		Arch constructed by the Niagara Parks Commission in 1939 in dedication to the architect of the International Peace Bridge. 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.	Potential cultural heritage landscape	Indirect/ adjacent: Proposed work on forcemain line from Lakeshore Road SPS is adjacent to the property parcel
Niagara River		The Niagara River served/ serves as a significant transportation route and resource for both Indigenous populations and Euro-Canadian settlers. 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. 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 th and early 20 th century development of Fort Erie.	Potential cultural heritage landscape	Indirect/ adjacent: Proposed work at Catherine Street SPS and Lakeshore Road SPS are adjacent to the property parcel

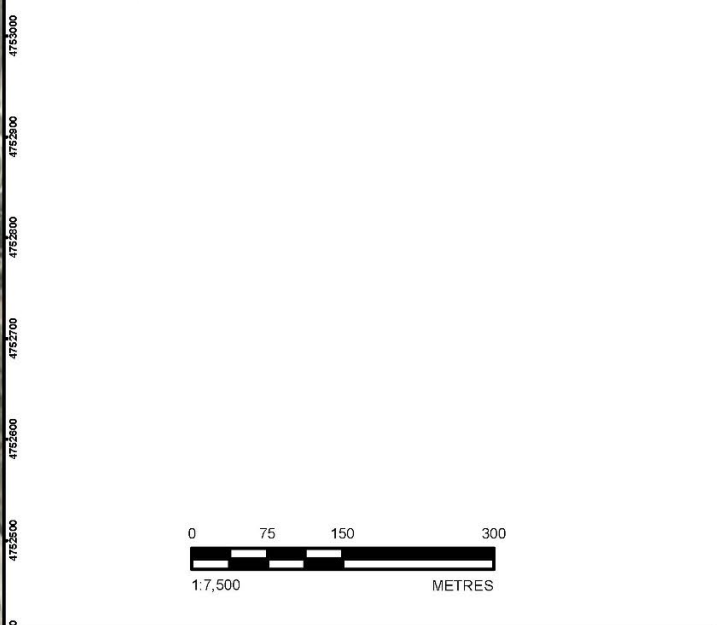


LEGEND

- 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

YYYY-MM-DD	2022-04-22
DESIGNED	AM
PREPARED	BR
REVIEWED	RF
APPROVED	MT

PROJECT NO.
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FIGURE
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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.

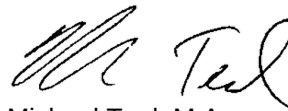
5.0 CLOSURE

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?	☐	☒

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 not to be of cultural heritage value?	☐	☒

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?	☐	☒
b. a National Historic Site (or part of)?	☐	☒
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	☐	☒
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	☐	☒
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☒
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☒

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?	☐	☒
b. has or is adjacent to a known burial site and/or cemetery?	☐	☒
c. is in a Canadian Heritage River watershed?	☐	☒
d. contains buildings or structures that are 40 or more years old?	☒	☐

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?	☒	☐
b. has a special association with a community, person or historical event?	☒	☐
c. contains or is part of a cultural heritage landscape?	☒	☐

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.

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
PART A	
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.
PART 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: ▪ The <i>Ontario Historical County Maps Project</i> web mapping application – Welland County 1862 ▪ 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 ▪ 20th century aerial imagery accessed through the Brock University Library ▪ Google Satellite and Street View imagery
PART C	
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 Catherine: Upgrade SPS at Existing Location		Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot		Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain 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 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 Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road 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 Catherine: Upgrade SPS at Existing Location		Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot		Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain 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 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 Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road 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 Catherine: Upgrade SPS at Existing Location		Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot		Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain 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 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 Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road 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 Catherine: Upgrade SPS at Existing Location		Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot		Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain 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 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 Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road 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 Catherine: Upgrade SPS at Existing Location		Lakeshore: Upgrade SPS at existing location Catherine: Construct new Catherine Street SPS in adjacent empty lot		Lakeshore: Upgrade SPS at existing location with outdoor generator and new forcemain 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 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 Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore Rd SPS South to Residential Property Catherine: Construct new Catherine St pump station in adjacent empty lot		Lakeshore: Relocate Lakeshore SPS to south vacant parking lot along Lakeshore Road 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	