Project File Report

Municipal Class Environmental Assessment – Schedule B

Premier Road Sewage Pumping Station, Forcemain and Sanitary Sewer

Prepared by:
The Corporation of North Bay
Engineering Department

Date: September 5, 2024

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1. INTRODUCTION

1.1 Background

The Corporation of the City of North Bay has completed a Municipal Class Environmental Assessment (Class EA) for planned upgrades and improvements to the Premier Road Sewage Pumping Station and Forcemain (SPS). The existing Premier SPS was constructed in early 1970 to service the Premier Road sanitary drainage area which includes numerous waterfront homes, trailer park and condominium subdivision.

The project study area is provided in Figure 1.

Figure 1

1.2 Problem and Opportunity Statement

The Corporation of the City of North Bay has initiated a Municipal Class Environmental Assessment Study to evaluate the Premier Road Sanitary Pumping Station and Forcemain (SPS). The existing Premier Road SPS has reached the end of its useful life, due to close proximity to the road, the dry well housing the pumps is in an advanced stage of deterioration. Winter salt has caused significant corrosion to the dry well, generator housing and control panel cabinet. The pumps and wells are inadequately sized causing the pumps to run frequently, which creates maintenance problems for the Sewer and Water Department. Also, due to the existing road location, the City has concerns for their personnel's safety and for conflicts with the structure from collisions with passing vehicles.

1.3 Format of Report

This report was prepared to meet the requirements of the Ontario Municipal Engineers Association (MEA) Municipal Class EA planning process. The report combines all phases of the planning process under one cover and incorporates steps considered essential for compliance with the requirements of the *Environmental Assessment Act* (EAA).

1.4 Study Scope and Location

The purpose of this EA is to identify alternatives which examine the various problems associated with the Premier SPS while incorporating the necessary upgrades to achieve a level of performance which is required by the City. Implementation of the Premier SPS Upgrades project includes the following components:

- Evaluation of existing deficiencies.
- Determination of future requirements with respect to service area population projections, and future collection system upgrades.
- Review of pumping station upgrade alternatives to address deficiencies and future needs.
- Review of standby power requirements and alternatives.
- Review the forcemain size, alignment and outlet location.
- Evaluation of environmental, technical and financial impacts of proposed SPS, forcemain and standby power alternatives; and
- Selection of the preferred alternatives and identification of mitigative measures.

The need and justification for this EA was assessed at a project specific level of detail. The project scope for this Schedule “B” Class EA project is to identify a preferred alternative for upgrading the existing Premier SPS to address deficiencies in the existing system. This project is endorsed by the City’s Sewer and Water Department, acceptable to stakeholders, and is effective in achieving the goals and objectives of the study, and sustainable over the long term.

The general study area is illustrated on Figure 2. The project study area is located in the southern portion of the City and services all of Premier Road from Lakeshore Drive to Champlain Park including Hollywood Street and Birch Street.

Figure 2

1.5 Municipal Class Environmental Assessment Process

1.5.1 Overview

All Municipalities in Ontario, including the City of North Bay, are subject to the provisions of the *Environmental Assessment Act* (EAA) and its requirements to prepare an Environmental Assessment for applicable public works projects. The Ontario MEA "Municipal Class Environmental Assessment" document (October 2000, as amended in 2015) provides Municipalities with a five-phase planning procedure approved under the EAA to plan and undertake all municipal sewage, water, stormwater management, and transportation projects that occur frequently, are usually limited in scale, and have a predictable range of environmental impacts and applicable mitigation measures.

1.5.2 Municipal Class EA Process Phases

In Ontario, municipal infrastructure projects are subject to the Municipal Class EA process and must follow a series of mandatory steps outlined in the Municipal Class EA document. The Class EA consists of five phases, which include:

- ***Phase 1 – Problem or Opportunity*****:** Identify the problem or opportunity, need and justification.
- ***Phase 2 – Alternative Solutions*****:** Identify alternative solutions to the problem by taking into consideration the existing environment and establish the preferred solution taking into account public and agency review and input.
- ***Phase 3 – Alternative Design Concepts for Preferred Solution*****:** Examine alternative methods of implementing the preferred solution, based upon the existing environment, public and agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects.
- ***Phase 4 – Environmental Study Report*****:** Document, in an Environmental Study Report (ESR) a summary of the rationale, planning, design and consultation process of the project as established through the above phases and make such documentation available for scrutiny by review agencies and the public and
- ***Phase 5 – Implementation*****:** Complete contract drawings and documents and proceed to construction and operation; monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the complete facilities.

The Class EA process ensures that all projects are carried out with effectiveness, efficiency and fairness. This process serves as a mechanism for understanding economic, social and environmental concerns while implementing improvements to municipal infrastructure.

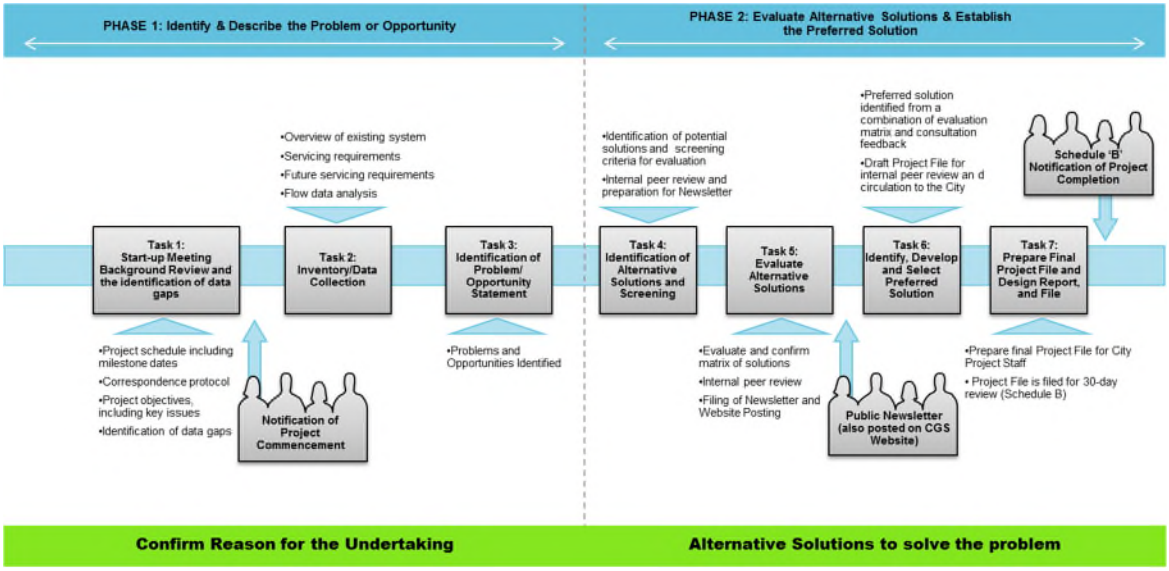
1.5.3 Mandatory Principles

The MEA process followed not only adheres to the guidelines outlined by the Class EA document, but reflects the five mandatory principles of Class EA planning under the EA Act:

1. *Consultation with affected parties early on, such that the planning process is a co-operative venture.*
2. *Consideration of a reasonable range of alternatives.*
3. *Identification and consideration of the impacts of each alternative on all aspects of the environment.*

4. *Systematic evaluation of alternatives in terms of their advantages and disadvantages to determine the net environmental effects; and*
5. *Provision of clear and complete documentation of the planning process, to allow "traceability" of decision-making with respect to the project.*

Following these five principles ensures that the EA process is devoted to the prevention of problems and damage through thorough planning and decision-making, recognizing that research and evaluation of possible impacts have been taken into account prior to the implementation of the project.



1.5.4 Project Classes

The Class EA defines four types of projects and the processes required for each (referred to as Schedule A, A+, B, or C). The selection of the appropriate schedule is dependent on the anticipated level of environmental impact, and for some projects, the anticipated construction costs.

Projects are categorized according to their environmental significance and their effects on the surrounding environment. Planning methodologies are described within the Class EA and are different according to Class type, such as the following:

Schedule A: Projects are limited in scale, have minimal adverse environmental effects and include a number of municipal maintenance and operational activities. These projects are pre-approved and may proceed to implementation without following the full Class EA planning process. Schedule A projects generally include normal or emergency operational and maintenance activities where environmental effects of these activities are usually minimal. Examples of Schedule A projects include cleaning, relining, repairs and renovations to an existing sewage collection system. As such, these projects are pre-approved and subsequently do not require any further planning and public consultation.

Schedule A+: The purpose of Schedule A+ is to ensure some type of public notification for certain projects that are pre-approved under the Class EA. It is appropriate to inform the public of municipal infrastructure project(s) being constructed or implemented in their area, however there would be no ability for the public to request a Part II Order[1]. If the public has any comments, they should be directed to the municipal council where they would be more appropriately addressed. Examples of Schedule A+ projects include establishing or extending a sewage collection system

(and all works necessary) to connect to an existing sewage outlet where such facilities are within an existing road allowance or utility corridor.

Schedule B: These projects have the potential for some adverse environmental effects. The proponent is required to undertake a screening process, involving mandatory contact with directly affected public and with relevant government agencies and stakeholders to ensure that they are aware of the project and that their concerns are addressed. If there are no outstanding concerns, then the proponent may proceed to implementation. Schedule B projects include constructing a new pumping station or increasing pumping station capacity by adding or replacing equipment, where new equipment is located in a new building or structure and new standby power facilities located in a new structure. As a result, the proponent is required to proceed through a screening process (Phases 1 and 2) including consultation with those who may be affected.

At the end Phase 2, a Project File documenting the planning process followed through Phases 1 and 2 shall be finalized and made available for public and agency review. However if the screening process raises a concern which cannot be resolved, the Part II Order may be requested and considered by the Minister of the Environment; alternatively, the proponent may elect voluntarily to plan the project as a Schedule C undertaking.

Schedule C: Such projects have the potential for significant adverse environmental effects and must proceed under the full planning and documentation procedures specified in the Class EA document. Schedule C projects require that an Environmental Study Report (ESR) be prepared and filed for review by the public and review agencies. Schedule C projects generally include the construction of new facilities and major expansions to existing facilities. Examples of Schedule C projects include construction of a new sewage system, including outfall to receiving water body or expanding an existing wastewater treatment plant beyond its rated capacity. If concerns are raised that cannot be resolved, the Part II Order may be requested.

Appendix A further expands on the steps required to complete the Municipal Class EA planning process.

1.5.5 Project Planning Schedule

This project was completed under the Municipal Class EA Schedule B planning process as the proposed Premier SPS Upgrade requires the construction of a new pumping station, forcemain and standby power facility that is located in a new building or structure (Schedule B activity). As required by the Schedule, Phases 1 and 2 of the Municipal Class EA planning process described above apply to this study. A Project File will be prepared and filed for review by the public and review agencies.

1.5.6 EA Documentation Filing

The documentation for a Schedule B project consists of a Project File Report, which is presented in this document. The placement of the Project File Report for public review completes the planning and preliminary design stages of the project.

The Project File Report is available for public review for a minimum thirty (30) calendar day period. A public notice (Notice of Study Completion) is published to announce the commencement of the review period. Copies of the Project File Report and all supporting documentation are available during normal business hours at the following location:

The Corporation of the City of North Bay
Engineering Department, 6th Floor
200 McIntyre Street East
North Bay, Ontario
P1B 8H8

If after reviewing the Project File Report, you have questions or concerns, please follow this procedure:

1. Contact the following City staff to discuss your questions/concerns:

   Mr. Gerry McCrank, C.E.T, LEL
   Senior Project Manager
   Engineering Department
   The Corporation of the City of North Bay
   200 MacIntyre Street East
   North Bay, Ontario
   Tel: 705-474-0400 ext. 2305
   Email: Gerry.McCrank@cityofnorthbay.ca

2. Arrange a meeting with the above if you have significant concerns that may require more detailed explanations.

3. If you raise major concerns, the City will attempt to negotiate a resolution of the issues(s). A mutually acceptable time period for this negotiation will be set. If the issues remain unresolved, you may request the Minister of the Environment and Climate Change, by order, to require the City to comply with Part II of the *Environmental Assessment Act* before proceeding with the project; this is called a Part II Order ("bump-up") request. The Minister may make one of the following decisions:

   - Deny the request.
   - Refer the matter to mediation; or
   - Require the City to comply with Part II of the *Environmental Assessment Act* by undertaking one of the following:

     - Submitting the Project File Report for government review and approval; or
     - Completing an Individual Environmental Assessment for government review and approval, or
     - Prepare Terms of Reference governing the preparation of an Individual Environmental Assessment for government review and approval.

Requests must be submitted in writing to the Minister of the Environment at the following address within the 30-day review period:

Minister's Office

Ministry of the Environment
135 St. Clair Avenue West, 12th Floor
Toronto, Ontario M4V 1P5

A copy of the request must be forwarded to the City of North Bay, addressed to the attention of Mr. Gerry McCrank (address provided above).

1.5.7 Consultation and Communication Program

As part of the planning process, several steps have been undertaken to inform government agencies, affected landowners and the local community/general public of the project and to solicit any comments.

The MEA Municipal Class EA document outlines specific mandatory public and agency consultation contact points and methods. In order to properly communicate the project and solicit feedback throughout the planning process, the following activities were undertaken:

- Mailed Notice of Commencement to immediate neighbours of the SPS.
- Newspaper notices for all project milestones; including a Notice of Commencement which appeared in the North Bay Nugget on April 8, 2017 and April 15, 2017 and a Project Information Center Notice for review and comment on Phase 2 material was posted in the North Bay Nugget on May 6, 2017 and May 13, 2017.
- Direct mailing (e.g. Notices of Project Commencement and Project Information Center Notice) to stakeholders, affected land owners and review agencies, including First Nations; and
- Posting project milestones (i.e. Notice of Commencement and Project Information Center Notice) on the City's website.

The above consultation and communications program are further described in Section 3.7. All comments received have been appended to this document in **Appendix B.**

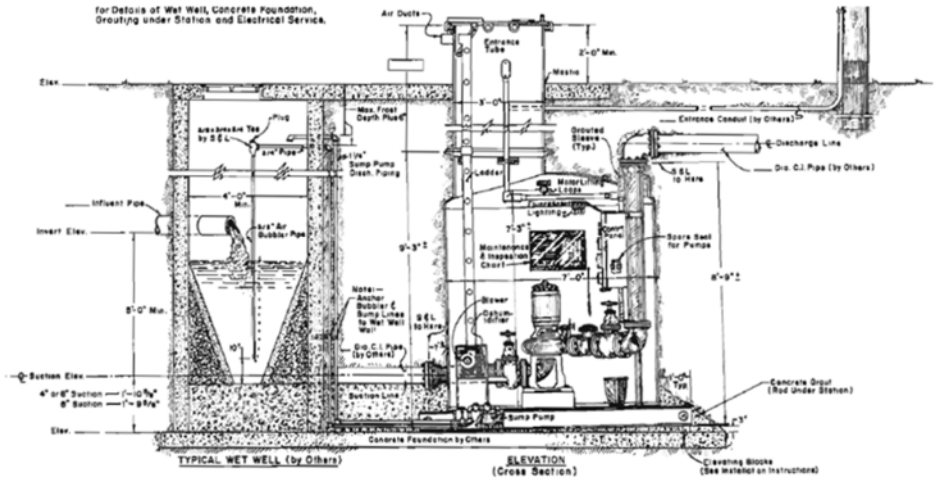
2. Inventory of Existing Conditions

2.1 Technical

The Premier Road Sewage Pumping Station and Forcemain (SPS) are located on a small portion of property adjacent to the municipal right of way opposite the intersection with Hollywood Street. The location of the Premier Road SPS and drainage area is shown in Figure 2. The SPS services approximately 268 residential properties including row housing, condominiums, trailer park, and Champlain Park which are considered totally built out and may add only a few additional buildings to the service area. The Service area is bounded by Lakeshore Drive to the north, Lake Nipissing to the west, Champlain Park to the south and the properties fronting on Premier to the east. The existing SPS, control cabinet and standby diesel generator is mostly located on a small piece of property and in the boulevard adjacent to Premier Road at Hollywood Street intersection. Underground electrical power, telephone and television cables exist on a utility pole south of the SPS.

The existing pumping station is a square (1.22m x 1.22m) 6.59m deep concrete wet well and a prefabricated steel dry well using a duplex pump system with each pump having a capacity of 10.96 L/s and hydraulic head of 5.96m. The 100mm diameter ductile iron forcemain outlets to a sanitary manhole adjacent to the existing SPS and flows through a 200mm gravity sewer flowing north along Premier Road towards Lakeshore Drive. Pump control consists of a watertight power and control panel including manual transfer switch for the generator complete with ultrasonic level transmitter connected to the City of North Bay SCADA system.

The diesel generator is a 25 KW unit 347/600V 3PH, 60Hz that is automatically started during power outages to provide constant pumping at the station and during monthly engine testing.



2.2 Social / Cultural Environment

2.2.1 Land Use

Premier Road is a 1.85km long cul-de-sac street with mainly residential properties on either side of the road. Premier Road functions as an important link to Lakeshore Drive for residents living within the neighborhood and provides access to Champlain Beach Park, Champlain Tent, Trailer and RV Park, the Lavase River boat launch, and the City dog park

2.2.2 Noise

Noise from the sewage pumping station is minimal due to its submersible construction. The diesel generator which runs during hydro outages, is located within a sound reducing enclosure. The generator set is programmed to run monthly to ensure proper operation but may increase the sound levels to the adjacent receptors during inclement weather but is not anticipated to be at a level that is above the acceptable criterion set by the Ministry of the Environment.

2.2.3 Archaeological

The Premier Road corridor was originally constructed in the mid part of the 20th century with the latest reconstruction of the road and underground infrastructure in 1977. During these periods the existing municipal right-of-way was extensively disturbed indicating that uncovering any significant archaeological potential within the corridor is non-existent.

2.2.4 Built Heritage

The properties adjacent to the Premier Road and Champlain Park Road municipal right-of-way were constructed during the mid-part of the 20th century with newer residential buildings having been constructed in the 1990's. A review of the existing properties does not indicate that a heritage building is within the study area.

2.3 Natural Environment

2.3.1 Vegetation

The Premier Road Sewage Pumping Station and Forcemain (SPS) were constructed in approximately 1970 and are located in an established residential subdivision. The area around the SPS has been disturbed over several decades due to the installation of servicing, home

construction and related landscaping. Vegetation along the Premier Road corridor is reflective of the extensive influence of the adjacent residents and is typical of a developed urban street

2.3.2 Wildlife

The existing site is located at the intersection of Premier Road and Hollywood Street and approximately 115m east of Lake Nipissing and does not have an overflow that would outlet into the lake. With the existing SPS location in the center of a residential neighborhood, disturbing any fish habitat, Blanding's turtle, barn owl, etc. is not anticipated.

The Study Area along Premier Road is comprised of manicured lawns, decorative shrubbery and trees of various sizes that do not have potential to provide a habitat for various species of wildlife.

3. Evaluation of the Alternative Solutions

3.1 General

Phase 2 of the Class EA process requires the identification and evaluation of alternative solutions to address the identified problem and opportunity statement. The Problem and Opportunity statement has identified the need to address sewage capacity and operational deficiencies in the Premier Road Sewage Pumping station and Forcemain.

Alternative Solutions were assessed on the basis of a comprehensive set of factors and criteria that reflected the following considerations:

- Provincial and federal government legislation, policies and guidelines.
- Municipal policy.
- Existing and future social, economic, cultural and traffic conditions within the study area.
- Issues and concerns identified during consultation with ministries, agencies, municipalities, ratepayer and interest groups, local community and the general public; and
- Study team investigations and expertise.

A number of planning alternatives were identified and subjected to a screening process typically used for projects of this complexity.

3.2 Identification of Alternative Solutions

The following list of Alternative Solutions was identified as having potential to address the problems and opportunities within the study area. These Alternative Solutions (See **Appendix C**) were presented at the first and second Public Information Centre (PIC) and include:

Alternative 1: Do Nothing

The 'Do Nothing' alternative demonstrates what would happen if no action was taken to improve the capacity and operational deficiencies of the Premier Road Sewage Pumping Station and Forcemain. This alternative solution was included for comparison purposes for evaluating the other alternatives.

Alternative 2: Reduce Infiltration to Sanitary Sewer System within the Premier Road SPS Drainage Area

This alternative would involve locating and eliminating any infiltration (ground water, storm water, etc.) into the existing sanitary sewer system within the Premier Road SPS drainage Area. This alternative would require various investigation techniques needed to locate leaks at joints, cracks, etc. in the sewer pipe and structures using closed-circuit television (CCTV), smoke tests, flow tests, etc.. Additionally, residents who have sump pumps draining their foundation footings into their sanitary service would require the elimination of this operation by outletting the pumped water to a storm sewer or onto the ground around the home.

Alternative 3: Upgrade / Retrofit the Existing Premier Road SPS and Sanitary Sewer on Premier Road

This alternative would involve improvements to the existing sewage pumping station and downstream sanitary sewer. The existing pumps and equipment within the wet well would need to be replaced with pumps of increased capacity. As well the downstream sewer would need to increase its size to take the additional flow from the pumps.

Alternative 4: New Sewage Pumping Station on a New Site and the Outlet for the Forcemain Relocated to a Downstream Structure

This alternative would involve locating an acceptable site for a new sewage pumping station sized to pump the flow from the existing Premier Road SPS drainage area and outletting a new forcemain to a downstream structure/sewer that has available flow capacity. The new pumping station would be located in an area away from the front of residential neighbours and would include a standby diesel generator, a weatherproof electrical panel, and landscaping as required.

3.3 Evaluation Criteria

The assessment criteria will be used to evaluate alternative solutions as follows:

- **Technical Considerations:** implementation; compatibility with existing operations; compatibility with existing utilities and buildings; provide long term solution; construction staging**.**
- **Natural Environment:** Vegetation and Wildlife, Water Resources and Fish, Air Quality/Odour.
- **Cultural Environment**: archaeological resources, cultural and built heritage; and
- **Socio-Economic Environment:** visual aesthetics, Noise impacts, construction cost, operations & maintenance cost.

3.4 Evaluation of the Alternative Solutions

The alternatives were assessed using a criteria-based summary of comparative evaluation. This method identifies and highlights the differences in net impacts associated with the various alternatives. The relative significance of the impacts has been examined to provide a clear rationale for the selection of a preferred alternative solution.

The matrix presents the assessment table used to evaluate the four (4) Alternative Solutions including the Do Nothing Alternative. Through this table, technical considerations, cultural, socio-economic and natural environments are used to evaluate and compare impacts of each of the Alternative Solutions. A recommendation was made for the Preferred Alternative Solution based on the results presented in this table, which was presented at PIC#1 & 2.

Evaluation Criteria and Sub-Factors Least Preferred Less Preferred Most Preferred	EVALUATION OF ALTERNATIVE SOLUTIONS		
	Do Nothing	Upgrade/Retrofit the Existing Premier Street SPS	New Sewage Pumping Station on a New Site and outlet the Forcemain to an existing structure
TECHNICAL CONSIDERATIONS			
Implementation: Constructability and disruption to station operation	No opportunity to address existing SPS deficiencies	Difficult to construct. Construction of upgraded SPS would be difficult to by-pass wet well during construction. Existing sewer would need to be upsized to Lakeshore Drive	Difficult to Construct due to high ground water near the lake and rock in the higher part of Premier. Will require land at the Premier/Lakeshore intersection. Existing SPS would remain in service until new SPS constructed
Compatibility with Existing Operations: Similar to other facilities in the City of North Bay	Equipment is old and requires replacement. Any replaced equipment will be compatible with existing SPS within the City.	Upgraded/Retrofit SPS would be compatible with other existing SPS within the City	New SPS and forcemain would be compatible with all other facilities to ensure equipment is re-usable across all City facilities.
Compatibility with existing Utilities and Buildings: Relocation of other utilities and proximity to adjacent buildings	No opportunity to adjust existing SPS to be compatible with existing utilities or adjacent buildings	Upgrade/Retrofit to existing SPS would be difficult due to overhead power lines and minimal space within the existing boulevard.	New SPS and forcemain will require new sewer to connect to existing system and hydro service. Landscaping will be provided to help blend to existing adjacent buildings
Provide Long Term Solution: Address issues related to equipment and infrastructure deficiencies, end of life cycle	Replace / upgrade equipment and infrastructure as needed	Upgraded/Retrofit SPS may not have the correct wet well size causing operation problems. Repair of existing wet and dry well will provide a limited life cycle requiring additional resources at a later date	SPS and forcemain will be constructed with new and updated equipment and technology and should last beyond 75 years
Construction Staging: maintain service to residents during reconstruction /rehabilitation	No opportunity to address existing SPS deficiencies	Difficult to provide temporary pumping station and service to residents during construction. Will require a temporary by-pass pumping system while upgrading/retrofitting	Existing SPS will be used while the new SPS and forcemain are constructed minimizing the effects to residents services. Sewer installation within the right-of-way will temporarily affect all property owners on Premier Road
NATURAL ENVIRONMENT			
Vegetation and Wildlife: removal of vegetation and disruption to wildlife	No impact on existing vegetation or wildlife	Boulevard vegetation would be disturbed, no wildlife impact	Existing vegetation along Premier may be disrupted installing sewers and/or forcemain. no impact to wildlife
Water Resources and Fish: impact to streams or lakes and associated fish	By-pass pumping to ditches during high flow periods may disrupt Lake Nipissing	by-passing would be minimized, sewer back-ups may still occur disrupting Lake Nipissing	no impact to Water resources or fish
Air Quality/Odour: impact to residence from odours originating from the wet well	No opportunity to address Air Quality/Odour that may exist	minimal air quality/odour as a result of a upgraded/retrofit SPS and new sanitary sewer	minimal air quality/odour as a result of a new SPS and forcemain
CULTURAL ENVIRONMENT			
Archaeological Resources: impact to Indigenous sites	All infrastructure upgrades are within existing municipal right of way which has been disturbed previously. No anticipated impact to undisturbed land	All infrastructure upgrades are within existing municipal right of way which has been disturbed previously. No anticipated impact to undisturbed land	All infrastructure upgrades are within existing municipal right of way which has been disturbed previously. No anticipated impact to undisturbed land
Cultural Heritage: impact to people living in the community	No impact to cultural heritage features	No impact to cultural heritage features	No impact to cultural heritage features
Built Heritage: impact to the buildings existing within the project area	No impact to known built heritage resources	No impact to known built heritage resources	No impact to known built heritage resources
SOCIO-ECONOMIC ENVIRONMENT			
Planning Polices: compliance with land use	SPS built within ROW does not comply with planning policies	Complies with land use policy	Depending on location chosen, land use would need to be adjusted once parcel of land purchased for SPS completed
Noise Impacts: noise created by the existing or proposed system	Nosie impact is not expected to increase from existing SPS but will continue to be an annoyance to local receptors	Nosie impact is not expected to increase from existing SPS but will continue to be an annoyance to local receptors	Nosie impact is not expected to increase due to new SPS and forcemain.
Property Impacts: residential values associated with the location of the SPS	Local residents would still have a SPS and associated equipment located within the boulevard adjacent to their property	Local residents would still have a SPS and associated equipment located within the boulevard adjacent to their property	Location of SPS would be off the right of way and located away from residents. Landscaping would be used to block out the SPS and equipment
Financial Consideration: Cost of construction; operating and maintenance	no construction cost but a high yearly O & M cost. Potential for emergency repairs to equipment as SPS gets older	Cost of Upgraded/Retrofit SPS, forcemain and sanitary sewer estimated at $3.5 million. Would require devloping a temporary SPS while the existing SPS was upgraded. O & M would reduce due to modern equipment except for wet and dry wells which may need upgrade earlier in the SPS life cycle	Construction cost of the new SPS and forcemain is estimated at $3.5 million and would be completed on a new site. O & M would reduce due to modern equipment and elimination of sewage back-ups
OVERALL SUMMARY AND CONCLUSIONS	**NOT PREFERRED DOES NOT ADDRESS NEEDS AND OPPORTUNITIES**	**NOT PREFERRED DOES NOT ADDRESS NEEDS AND OPPORTUNITIES**	**ADDRESSES MOST OF THE NEEDS AND OPPURTUNITIES - CARRIED FORWARD**

3.5 Identification of the Preferred Alternative

Based on the detailed comparative evaluation, Alternative 3 New Pumping Station, Back-up Generator and Forcemain on a New Site are recommended to be carried forward as the Preferred Alternative. Rational for selecting Alternative 3 includes:

- Low environmental impacts.
- Low socio-economic impacts.
- Fully addresses problem statement.
- Provides opportunities to improve the Premier Road neighborhood, and
- Preferred technical consideration.

A review of the other alternatives is summarized as follows:

- Alternative 1: 'Do Nothing' was not recommended as it would not address the re-occurring problems associated with the condition of the existing SPS components that are in an advanced stage of deterioration. Since this problem is only getting worse and maintenance is required on a more regular basis, a solution is needed to immediately improve the sewage pumping station operation and maintenance.
- Alternative 2: Upgrade/Retrofit the Existing Premier Road SPS and Downstream Sanitary Sewer' is a solution that would require maintaining the existing wet well within the boulevard of Premier Road in front of existing residents. Problems with sizing the pumps in the existing wet well and temporary sewage pumping during construction is considered very difficult and expensive. Problems associated with safety concern for vehicles colliding with the structure due to the proximity to the edge of road within the narrow property boundary and right of way.

3.6 Location of the Preferred Alternative

3.6.1 General

Four locations were identified as being suitably sized for the construction of a new sewage pumping station, standby generator and weatherproof panel as follows:

- Option A site is located on the unopened Archibald Street right-of-way at Premier Road
- Option B site is located on the unopened Rheaume Street right-of-way at Premier Road
- Option C site is located on private property at the southeast corner of Premier Road and Lakeshore Drive intersection.
- Option D site is located on the City owned traffic island across from Option C at the southwest corner of Premier Road and Lakeshore Drive intersection.

3.6.2 Option A – Archibald Street right-of-way at Premier Road

Option A sewage pumping station would be located on the unopened Archibald Street right-of-way and would front on Premier Road beside a recently built home. This option would require the relocation of an existing sanitary sewer servicing Hollywood Street and special dewatering design for installing the wet well adjacent to Lake Nipissing. The forcemain length for this option would be the longest and would require temporary sanitary sewers to permit construction of the sewage pumping station.

OPTION A
CORNER OF
ARCHIBALD STREET and PREMIER ROAD

3.6.3 Option B - Rheaume Street right-of-way at Premier Road

Option B sewage pumping station would be located on the unopened Rheaume Street right-of-way and would front on Premier Road. Rheaume Street provides access to two properties, and both would be disrupted for two years while the project was under construction. An existing large Maple tree would need to be removed and permission from the property owner for use of the property as a work zone until construction is completed would need to be negotiated and the property restored to existing or better conditions. A large storm sewer would need to be temporarily removed & salvaged, then re-installed once the SPS well-well was completed. Additionally extra care would be required while working around a large installation of existing Bell Canada communication ducts. This location would require extending the trunk sanitary sewer from the existing SPS site and providing a connection to the sewer from Birch Street.

OPTION B
CORNER OF
RHEAUME STREET and PREMIER ROAD

3.6.4 Option C - Private Property at the SE corner of Premier Road and Lakeshore Drive

Option C sewage pumping station would be located on private property (24hr Car Wash) at the Southeast corner of Premier Road and Lakeshore Drive intersection and would be in front of the advertising sign on the same property. This location would require extending the trunk sanitary sewer from the existing SPS site and provide a connection to the sewer from Birch Street. The forcemain would be relatively short as the outlet would be to the existing sanitary sewer on Lakeshore Drive. Negotiating a purchase price with the existing owner would need to be finalized to move forward with this option.

OPTION C
CORNER OF
LAKESHORE ROAD and PREMIER ROAD

3.6.5 Option D - City Owned Traffic Island at the SW Corner of Premier Road and Lakeshore Drive

Option D sewage pumping station would be located on the City owned island at the southwest corner of Premier Road and Lakeshore Drive Intersection. To ensure sufficient land is available for this option, the southbound ramp from Lakeshore Drive to Premier Road would be eliminated and the Premier Road entrance at Lakeshore drive would be widened and shifted to the southeast to maximize truck/transit turning onto the road. This location would require extending the trunk sanitary sewer from the existing SPS site and provide a connection to the sewer from Birch Street. The forcemain would be relatively short as the outlet would be to the existing sanitary sewer on Lakeshore Drive.

OPTION D
ISLAND AT THE CORNER OF
LAKESHORE DRIVE and PREMIER ROAD

3.6.6 Option Evaluation Summary

Based on the matrix provided under 3.7.6 Option A and B are not preferred due to the work needed to relocate existing infrastructure (sanitary and storm sewers), close proximity to Lake Nipissing, the need for adjacent temporary land to allow room to complete installation of the SPS, interference with adjacent property access, and other problems noted with both sites.

Options C and D are both preferred and similar in construction requirements, but Option C has been eliminated due to difficulties associated with the land purchase

OPTION LOCATIONS	PROS	CONS	EVALUATION
OPTION A **Archibald Street Right of Way - Public Access to Lake Nipissing**	Deep installation of sanitary sewer is minimal Location is closest to the existing SPS decreasing the amount of sanitary sewer to be installed to reroute sewage flows Public access to Lake Nipissing is maintained and Public Works will have continued access to the underground sewer system Proposed infrastructure is located on municipal right of ways and will not require land purchase	Forcemain is lengthy, increasing the Total Dynamic Head (TDH) on the system Additional traffic control will be required to be in place from Hollywood to Archibald due to the longer limit of construction SPS site is located on a right of way between two existing homes requiring aesthetical improvements and landscaping. Additional road reconstruction is required due to longer limit of construction Existing sanitary sewer on Archibald will require relocation to provide space for wet well installation. Temporary sewer or pumping system will need to be installed during construction until SPS commissioned. Special dewatering construction due to location of adjacent Lake Nipissing Extended dewatering of wet well and sanitary sewer will be required due to adjacent location of Lake Nipissing. Outlet would be pumped to Lake Nipissing and would require additional permits Maneuverability of construction equipment, storage of onsite construction materials & equipment will create concerns during infrastructure installation. Electrical Pad and top of wet well must be constructed above the 100 year flood level of Lake Nipissing	**NOT PREFERRED**
OPTION B **Rheaume Street Right of Way - Access to Lake Nipissing**	Limit of construction is from hollywood to Lakeshore (shorter than Option A) Public access to Lake Nipissing is maintained and Public Works will have continued access to the underground sewer system Forcemain is shorter reducing the Total Dynamic Head on the system Maneuverability of construction equipment, storage of onsite construction materials & equipment is available during infrastructure installation.	SPS site is located on a right of way between two existing homes requiring aesthetical improvements and landscaping. Sanitary sewer is deep from the existing SPS to the new wet well location requiring a deeper wet well Existing large diameter storm sewer on Rheaume would need to be relocated to avoid SPS wet well and sanitary sewer Requires adjusting the alignment of the existing shallow sanitary sewer (220m) closer to the watermain alignment to permit installation of the deep sanitary sewer Remove large branches from adjacent tree located in neighbouring property and may require a working easement from the addjacent property owner Two property owners will have access to their properties disrupted for an extended period during construction Traffic control will require temporary traffic signals and one way traffic to prevent access to Birch and Hollywood. Maneuverability of construction equipment, storage of onsite construction materials & equipment will create concerns during infrastructure installation. Existing extensive underground and above ground utilities would creat extracaution for installing dewatering and shoring for wet well structure	**NOT PREFERRED**
OPTION C **Corner of Lakeshore Drive and Premier Road - Vacant Land**	Limit of construction is from Hollywood to Lakeshore (shorter than Option A) Less impact to existing property owners than Option A or B Forcemain is shorter reducing the Total Dynamic Head on the system Maneuverability of construction equipment, storage of onsite construction materials & equipment is available during infrastructure installation.	SPS site is located on private property and will require purchasing land (need agreement with land owner) Sanitary sewer is deep from the existing SPS to the new wet well location requiring a deeper wet well Deep Sanitary sewer will require deep services Above ground Bell crosses property and may result in some construction problems (installing shoring, wet well, etc.) Traffic control will require temporary traffic signals and one way traffic to prevent access to Birch and Hollywood.	**PREFERRED No. 1** Alternative dropped after not being able to negotiate land purchase
OPTION D **Corner of Lakeshore Drive and Premier Road - Intersection Island**	Limit of construction is from Hollywood to Lakeshore (shorter than Option A) Less impact to existing property owners than Option A or B Forcemain is shorter reducing the Total Dynamic Head on the system Maneuverability of construction equipment, storage of onsite construction materials & equipment is available during infrastructure installation. Removal of ramp will slow traffic entering premier (traffic calming)	Traffic control will require temporary traffic signals and one way traffic to prevent access to Birch and Hollywood. Sanitary sewer is deep from the existing SPS to the new wet well location requiring a deeper wet well Deep sanitary sewer will require deep services Above ground Bell crosses island may require replacement depending on final location of wet well structure Driveways to adjacent properties will be extended to access Lakeshore Drive	**PREFERRED No. 2** New alternative developed with construction on City right-of-way

3.7 Preferred Option

3.7.1 Typical Sewage Pumping Station Layout

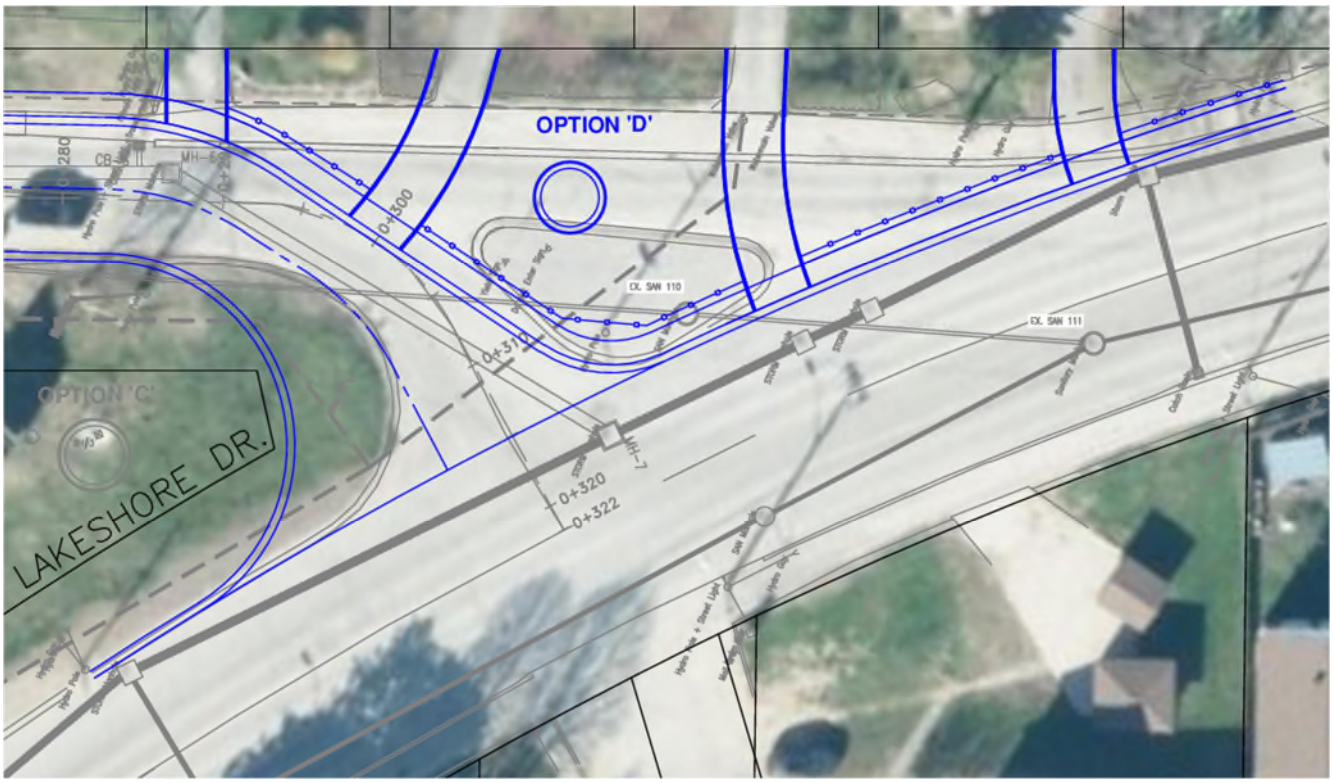
The City of North Bay has been updating their sewage pumping stations (SPS) since 2018 and have successfully completed the facilities on Gertrude Street and Wallace Road. The design for both stations followed the same guidelines that are being proposed for Premier Road SPS to ensure compatibility between all of the stations. The City Sewer and Water Operations personnel, including SCADA operators become familiar with the similar equipment and station layout, making it easier to operate and provide maintenance. The Premier Road site layout will be very similar to the other two sites but may have their equipment/components adjusted to suit the proposed site.

3.7.2 Option D – Sewage Pumping Station, Forcemain and Sanitary Sewer

Option D – Sewage Pumping Station will be constructed on the expanded island at the intersection of Lakeshore Drive and Premier Road by eliminating the ramp and adjusting the location of the Premier Road intersection. To protect the SPS site, a steel beam guide rail will be installed behind the relocated sidewalk from Lakeshore Drive which will be connected to the Premier Road sidewalk. Relocating other utilities such as arial communication cables, sewers and watermain will be completed as part of the project.

3.7.3 Schematic Layout of Option D SPS Site

The final layout of the proposed Option D SPS site will be determined during preliminary and detailed design but a review of impacts were completed as per the attached sketch.



3.8 Consultation

3.8.1 Public, Agency, stakeholders and First Nation

As part of the Municipal Class EA communications and consultation program, efforts have been made to inform government review agencies and the local community of the nature and scope of the project and to solicit input/comments. These steps included advertising and mailing the Notice of Commencement, Public Information Center Notice 1 & 2, and Notice of Completion. A list of the notices mailed is included in **Appendix C**

Responses from any of the Public, Agency, stakeholders or First Nations have not been received in regards to this project.

4. Mitigation Measures

Based on the preferred solution for the Premier SPS (Alternative No. 3), the proposed upgrades are expected to have varying but relatively minor and manageable environmental effects. In order to address the effects, the following approach was taken:

- **Avoidance:** The first priority is to prevent the occurrence of negative effects (i.e., adverse environmental effects) associated with the implementation of an alternative (i.e., the new SPS).
- **Mitigation:** Where adverse environmental effects cannot be avoided, it will be necessary to develop the appropriate measures to eliminate or reduce to some degree, the negative effects associated with implementing the alternative.

- **Compensation:** In situations where appropriate mitigation measures are not available, or significant net adverse effects will remain following the application of mitigation, compensation measures may be required to counterbalance the negative effect through replacement in kind, or provision or a substitute or reimbursement.

Based on conceptual design and considering the above, in some cases avoidance measures were able to be applied more extensively thus reducing the extent and magnitude of potential adverse environmental effects requiring the application of mitigation measures.

The following mitigation measures are recommended to ensure that any short-term disturbances are managed by the best available methods. These measures will be further confirmed and defined during detailed design.

Problem	Mitigating Measure
Removal of Trees and Vegetation	• Where tree removal is unavoidable, a tree replacement program will be put in place. • All trees to be retained shall be clearly marked by the City. • Where required, protect mature and middle-aged trees along the edge of construction area. • Restore disturbed areas/habitat to natural or better conditions. • Detailed design will outline all construction practices relating to vegetation and ensure that all impacts are avoided or minimized. • Obtain an Arborist to trim tree that obtain damage and to are to remain
Groundwater Resource Management	• Where significant water-taking is anticipated (i.e., > 50,000 L/day), a Permit to Take Water (PTTW) will be required from the MOECP prior to construction • The extent of water-taking required will be confirmed through additional hydrogeological investigations during detailed design. These investigations will determine if and how much water-taking may be required, if a MOECP PTTW is needed and potential draw-down impacts, impacts to base flow, zones of influence at each dewatering location, if required, and mitigation measures. • Groundwater from dewatering will be pumped to the sanitary sewer but may be pumped to existing storm sewers with NBMCA/City approval. Dewatering water shall be pumped to an acceptable sewer on Lakeshore Drive. • Where proposed sewers cut through bedrock, a clay plug will be installed from the bottom of the trench to the top of the underground bedrock to prevent movement of groundwater.
Sediment Deposition	• As required, prepare an erosion and sediment control plan consistent with the Ontario Provincial Standard Drawings. • The erosion and sediment control plan will include details relating to the location and protection of any proposed stockpile areas. • Ensure proper onsite monitoring of erosion and sediment control, especially during/after wet weather events. • Any areas disturbed by construction will be restored and stabilized as soon as practically possible.

Problem	Mitigating Measure
Waste Disposal	• If contaminated soil is encountered, disposal shall be consistent with Part XV.1 of the *Environmental Protection Act* (EPA) and the Record of Site Condition Regulation (O. Reg 153/04). • All waste generated during construction activity will receive proper disposal as per MOECP requirements.
Traffic and Access	• Traffic control including notification signage for SPS, sewer and forcemain construction • Minimize construction duration (e.g. working days). • City access to property maintained for ongoing operations and maintenance activities • Provide flagging personnel during construction day (7am to 7 pm) to permit quicker reaction to traffic travelling through the work site. Only provide temporary traffic lights outside of work period (evening and nighttime) • Traffic shall remain on Premier Road and any detouring traffic onto Birch Street and Hollywood Street shall only occur during short time periods (less than an hour) and with City Project Managers permission.
Temporary Social Impacts (e.g. blasting, noise, dust, vibration) to Adjacent Properties	• Construction operations will be restricted to the daytime (wherever possible). In addition, the contractor will be required to adhere to local noise by-laws. • Apply calcium chloride during prolonged dry weather • Dust control by spraying water/street sweeping. • Adjacent open space area to have fencing and signage for safety. • Provide prior notification of all blasting events to local property owners
Visual Impact/Noise/Vibration/Odour (SPS Operation)	• Appropriate SPS landscaping design captured in detailed design. • Noise and vibration requirements addressed through detailed design • Odour management measures will be addressed during the detailed design stage.
Structural Impact to Adjacent Properties/Roads	• Obtain comprehensive geotechnical investigation report • Pre and post construction surveys will be completed. • Pre-construction photographs of site and haul routes
Provincially Significant Wetland (PSW)	• Contact and submit drawings to NBMCA for review and approval • Obtain all necessary permits from NBMCA

5. Conclusions

5.1 Preferred Alternative

This Project File identified alternative technical solutions and a preferred alternative for the Premier Road SPS, forcemain and sanitary sewer based on the needs of the community, sound engineering principles, environmental criteria, and consultation with the public and other stakeholders.

Through the Municipal Class EA process, several alternatives were established and evaluated and further to this evaluation, a New Premier Road SPS, back-up diesel generator and Forcemain on a New Site was chosen as the preferred alternative. This selection provides minimal impact to the environment, a secure sewage conveyance for the Premier Road sanitary drainage area in the south end of the community and is economically and efficiently manageable for the City of North Bay.

5.2 Municipal Class EA

As per the Municipal Class EA process and a Schedule B undertaking the project file report will be made available to the public and a Completion Notice will be published in the local newspaper and issued to all stakeholders and agencies. The 30-day notification period will commence with publication of the notice.

5.3 Approvals

Upon achieving the 30-day notification period with no requests to ‘bump-up’ the environmental Assessment the City will proceed with detailed design of the facility and its appurtenances which will be approved under the City’s CLI-ECA (based on pump sizes) or MOECP’s Environmental Compliance Approval. Construction will commence once final approval has been received.

The proposed site is located adjacent to Lake Nipissing and may require screening by North Bay Mattawa Conservation Authority (NBMCA). All drawings shall be submitted to the NBMCA and any appropriate permits required by the agency shall be obtained during detailed design and prior to construction.

Contact with utilities, especially Bell Canada to obtain locations of above and below ground utilities. An existing Bell cable runs across the proposed sewage pumping station site and may need to be relocated to permit installation of the equipment and wet well at the proposed site.