

Halton Region Lower Base Line Wastewater Pumping Station and Associated Forcemains Class EA Study



Project File Report



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Acronyms and Abbreviations

AA	Archaeological Assessment
ANSI	Areas of Natural and Scientific Interest
DC	Development Charge
DFO	Department of Fisheries and Oceans
CCME	Canadian Council of Ministers of the Environment
CH	Conservation Halton
CHER	Cultural Heritage Evaluation Report
CHSR	Cultural Heritage Screening Report
CHVI	Cultural Heritage Value or Interest
EA	Environmental Assessment
EAA	Environmental Assessment Act
EPA	Environmental Protection Act
ESA	Endangered Species Act
ESR	Environmental Study Report
HCCC	Haudenosaunee Confederacy Chiefs Council
IMP	Integrated Master Plan
JBPE	Joint Best Planning Estimate
LOS	Level of Service
MBCA	Migratory Birds Convention Act
MCEA	Municipal Class Environmental Assessment
MCM	Ministry of Citizenship and Multiculturalism
MCFN	Mississaugas of the Credit First Nation
MEA	Municipal Engineers Association
MECP	Ministry of Environment, Conservation and Parks
MLD	Megalitres per day
MNR	Ministry of Natural Resources
OP	Official Plan
PFR	Project File Report
PIC	Public Information Centre
PPS	Provincial Policy Statement
PSW	Provincially Significant Wetland
Region	Region of Halton
ROP	Regional Official Plan
ROW	Right of Way
SAR	Species at Risk
SCADA	Supervisory Control and Data Acquisition
SNGR	Six Nations of the Grand River
WWPS	Wastewater Pumping Station
WWTP	Wastewater Treatment Plant

1.0 Introduction

The Regional Municipality of Halton (the “Region”/Halton Region) is comprised of four Local Municipalities: the City of Burlington, the Town of Halton Hills, the Town of Milton and the Town of Oakville. Located in southern Ontario, the Region is part of the Greater Golden Horseshoe area, one of the most dynamic regions in Canada and North America.

The Region and its Public Works department recognize that readily available and reliable public water and wastewater infrastructure is essential to the viability of existing and growing communities across the Region.

Halton Region has undertaken a Schedule ‘B’ Municipal Class Environmental Assessment Study (Class EA) to identify the preferred location for the Lower Base Line Wastewater Pumping Station (WWPS) and the alignment for the associated forcemain and gravity sewer. The Lower Base Line WWPS was identified in the 2011 Sustainable Halton Water and Wastewater Master Plan to support growth in Milton and Halton Hills and is included in the ongoing Water, Wastewater and Transportation Integrated Master Plan (IMP).

Through the Class EA, alternative locations and alignments for the WWPS and sanitary pipelines were evaluated with considerations for capacity requirements, constructability, environmental and cultural impacts, property requirements, coordination with other surrounding projects, and financial implications. The study was undertaken as a Schedule ‘B’ Class EA in accordance with the Municipal Class Environmental Assessment (MCEA) process (October 2000, as amended in 2007, 2011, 2015, 2023 and 2024) under the Ontario *Environmental Assessment Act*. The Province has proposed to revoke the MCEA.

The requirements of this Schedule ‘B’ Class EA have been fulfilled through the completion of Phases 1 and 2 of the Municipal Class EA Process:

- **Phase 1:** Define the problem/opportunity statement, and
- **Phase 2:** Identify, assess, and select preferred location and alignment for the WWPS and associated sanitary pipelines.

This Project File Report documents the MCEA process and provides an overview of the study, including the background of the study area, applicable planning and policy context, and existing conditions and constraints. The report summarizes engagement with Indigenous, First Nations and Métis Communities, and consultation with agencies, stakeholders and the public while outlining the evaluation of alternatives and the rationale for the preferred infrastructure solution. The preferred design concept is presented to inform the future detailed design and implementation phases.

2.0 Background and Objectives

2.1 Study Background and Objectives

Halton Region has undertaken a Schedule 'B' Municipal Class Environmental Assessment (Class EA) to identify the preferred location for the Lower Base Line Wastewater Pumping Station (WWPS) and the alignment for the associated forcemain and gravity sewer. The Lower Base Line WWPS was identified in the 2011 Water and Wastewater Servicing Master Plan to support growth in Milton and Halton Hills and is included in the ongoing IMP.

This Class EA study will develop, evaluate, and select the optimal location for the WWPS and alignment for the associated sanitary pipelines. The station will convey wastewater flow from growth areas in Milton and Halton Hills to the Mid-Halton Wastewater Treatment Plant (WWTP) via the existing Boyne Trunk Sewer. The new WWPS will be sized to service growth to 2051, based on the latest growth projections, the Joint Best Planning Estimates (JBPEs), as developed by the Region and local municipalities.

This Class EA study will follow the Municipal Class Environmental Assessment (MCEA) process, ensuring adherence to planning guidelines, environmental policies, and continued and open dialogue with various levels of government, Indigenous Communities, and the public. Aspects of future construction and operational impacts will also be considered to minimize potential disruption to the existing community.

2.2 Study Area

Halton Region is situated in Southern Ontario and is bounded by the City of Hamilton to the west, the Region of Peel to the east, Wellington County to the north and Lake Ontario to the south. The Region is comprised of four local municipalities: the City of Burlington, the Town of Halton Hills (including the Communities of Acton and Georgetown), the Town of Milton and the Town of Oakville.

The study area for this Class EA falls within the Town of Milton and the Town of Oakville, with the municipal border running approximately halfway through the study area, east to west, with the Town of Milton to the north and the Town of Oakville to the south. The study area extends to Highway 25 to the west, Burnhamthorpe Road to the south, mid-way between Forth Line and Fifth Line to the east, and south of Britannia Road to the north. The study area has diverse land uses including regional natural heritage areas, environmentally significant areas, agricultural areas, and residential and employment areas; all of which have been considered through the Class EA study.

The study area can be seen in **Figure 2-1** below.

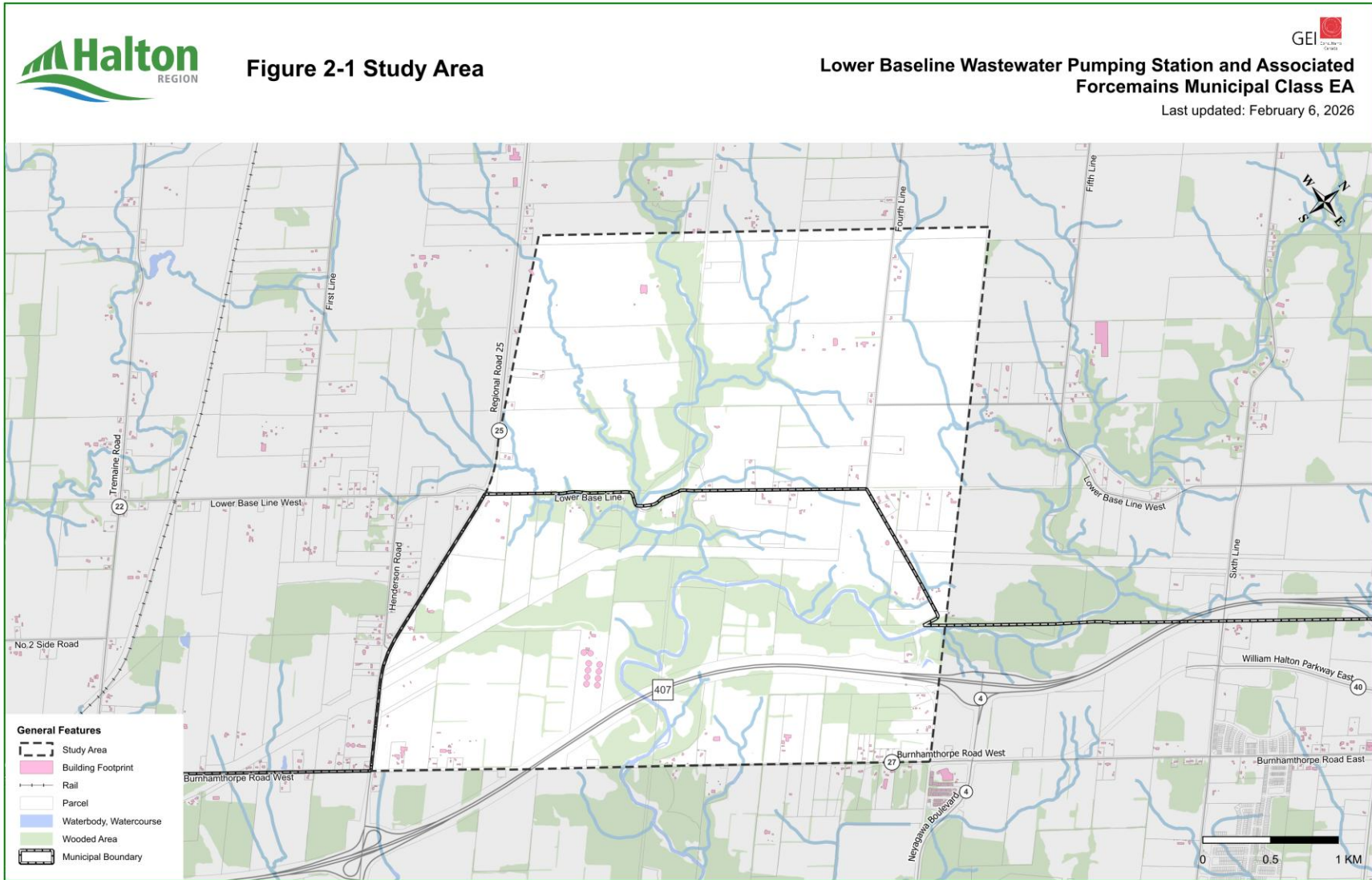


Figure 2-1 – Lower Base Line WWPS Study Area

3.0 Municipal Class Environmental Assessment Process and Objectives

This Class EA study was completed as a Schedule 'B' project in accordance with the requirements of the Municipal Class EA process (October 2000, as amended in 2007, 2011, 2015, 2023 and 2024). The Class EA 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. Class EA requirements are outlined in detail below.

3.1 Class Environmental Assessment Act

Ontario's Environmental Assessment Act (EAA) was enacted in 1975 and came into force in 1976. The EAA requires proponents to examine and document the environmental effects that could result from major projects or activities and alternatives approaches.

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 or 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 in Ontario of the environment (RSO1990, c.18, s.2). An EA must also ensure that decisions result from a rational, objective, transparent, replicable, and impartial planning process.

As set out in *Section 17.6 (2)* of the EAA, an EA document must include the following:

- The purpose of the undertaking;
- The alternative methods of carrying out the undertaking; and,
- Alternatives to the undertaking.

The EA document must also include a description of:

- The environment that will be affected or that might reasonably be expected to be affected, directly or indirectly, by the undertaking or alternatives to the undertaking;
- The effects that will be caused or that might reasonably be expected to be caused to the environment by the undertaking or alternatives to the undertaking;
- The actions necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment by the undertaking or alternatives to the undertaking; and,

- An evaluation of the advantages and disadvantages to the environment of the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking;
- A description of any consultation about the undertaking and the results of the consultation. (EAA, R.S.O.1990, c. E.18, s.17.6(2)).

3.2 Principles 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:

- 1 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 concerns cooperatively before final decisions are made. Consultation should begin as early as possible in the planning process.
- 2 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.
- 3 Identification and consideration of the effects of each alternative on all aspects of the environment.** This includes the natural, social, cultural, technical, and economic environments.
- 4 Systematic evaluation of alternatives in terms of their advantages and disadvantages, to determine their net environmental effects.** The evaluation shall increase in the level of detail as the study moves from the evaluation of “alternatives to” to the evaluation of “alternative methods”.
- 5 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.

3.3 Class Environmental Assessment Process

The Municipal Class Environmental Assessment (MCEA) process, prepared by the Municipal Engineers Association (October 2000, as amended in 2007, 2011, 2015, 2023 and 2024) outlines the procedures to be followed to satisfy Class EA requirements for water, wastewater, stormwater management and road projects. Since this project started in 2023, this Class EA will follow the 2023 MCEA process with consideration for the latest 2024 amendment. The recent 2024 amendments provided updates to water and wastewater project schedules. The amendment also identifies projects that may be exempt from the Schedule B Class EA process if an Archaeological Screening Process (ASP) is completed, and the site is cleared of any archaeological potential.

The Class EA process includes five phases:

- **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 Methods of Implementation of the Preferred Solution while taking input from the public and other stakeholders into consideration;
- **Phase 4:** Documentation of the Class EA process in the form of an Environmental Study Report (ESR) for public review; and,
- **Phase 5:** Implementation and Monitoring.

Public and agency consultation are integral to the Class EA planning process. Projects subject to the Class EA process are classified depending on the degree of the expected impacts. **Figure 3-1** illustrates the Municipal Class EA planning and design process with the phases required for each schedule.

Exempt Projects (formerly known as Schedule A and A+ Projects) are projects that are generally limited in scale and have minimal adverse effects on the environment.

Projects Eligible to be Screened are select projects that may be exempt from the Schedule B Class EA process if they successfully undergo an Archeological Screening Process (ASP). The ASP includes Indigenous Community engagement, consultation with Ministries and completing a checklist related to archaeological potential of the proposed locations. If the project passes the screening process, the project will be exempt from the EAA. However, if the project does not pass the screening process, then the applicable Schedule B or C assessment process is required.

Schedule B Projects require evaluating alternatives and assessing their potential environmental impacts through the completion of Phases 1 and 2 of the EA process. The proponent is required to consult with Indigenous Communities, the affected public and relevant review agencies.

Schedule C Projects must satisfy all five phases of the Class EA process. These projects have the potential for greater environmental impacts. Phase 3 involves the development and assessment of design alternatives, as well as public consultation on the preferred conceptual design. Phase 4 normally includes the preparation of an Environmental Study Report (ESR) that is filed for public review.

3.4 Selection of the Class EA Schedule

As a **Schedule B Class EA**, the Halton Region Lower Base Line WWPS and Associated Forcemain Class EA study has satisfied Phases 1 and 2 of the Class EA process with the completion of this Project File Report and subsequent 30-day public review period. Following completion of the Class EA, the project will advance to detailed design and construction, incorporating mitigation measures identified through the Class EA process to mitigate potential impacts on the community and the environment.

MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

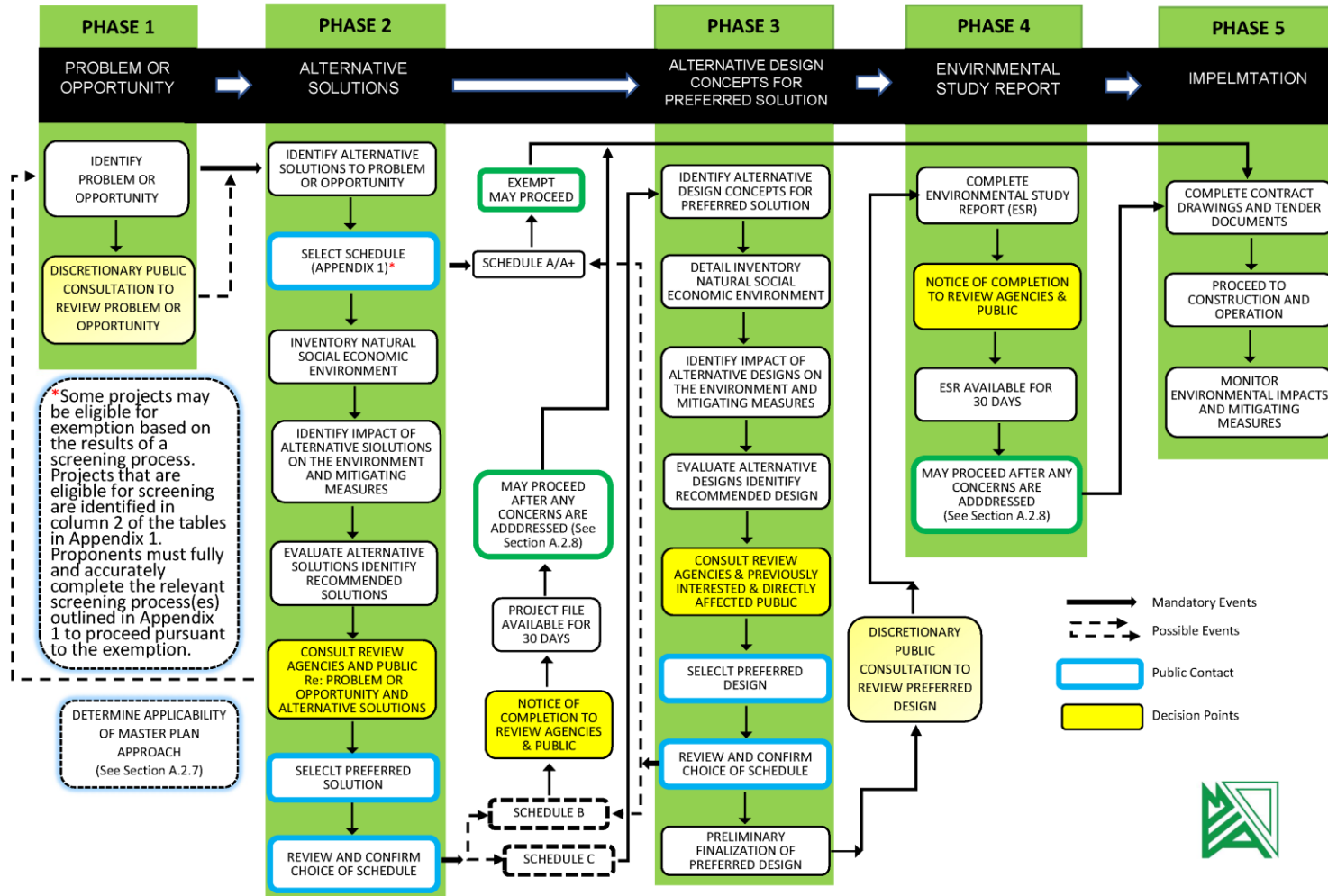


Figure 3-1 – MEA Municipal Class EA Process

4.0 Stakeholder Consultation and Engagement

4.1 Public and Stakeholder Consultation

Public and stakeholder consultation is a key component of the MCEA process and is critical to the success of this study. The consultation program was designed to support meaningful, two-way engagement with the public, regulatory agencies, and other interested parties. This approach ensures balanced and objective information is shared, provides opportunities to listen to and address questions and concerns, and enables the collection of valuable feedback on the study process, alternative solutions, and the preliminary preferred solution, extending beyond minimum legislative requirements.

The primary goals and objectives of the public consultation process were to:

- Present clear and concise information at key stages of the study process;
- Solicit community, regulatory, Regional and Local staff input;
- Identify concerns that might arise from the undertaking;
- Consider stakeholder comments when developing the preferred solution; and,
- Satisfy Municipal Class EA Consultation requirements.

The Communications and Consultation plan for this Class EA is driven by five key principles:

- **Respect:** For all parties engaged in the process;
- **Clear, consistent communication:** To ensure broad understanding, and that all communication across messaging platforms is consistent;
- **Demonstrated organizational and community values:** To ensure all communications reflect the values of the Region as an organization and as a community;
- **Transparency:** Communicate the EA process and its results openly; and,
- **Flexibility:** Adapt to different interested parties, concerns, and opportunities that may arise throughout the EA process.

A range of consultation methods was used throughout the Class EA process to inform the public and interested parties, and to solicit input; including notices, a project webpage, comment forms, and a virtual Public Information Centre (PIC). Consultation activities are highlighted in the following sections, with detailed documentation of the completed consultation provided in **Appendix A**.

4.1.1 Consultation Activities

Halton Region initiated the Class EA in November 2023 based on the recommendations in the 2011 Water and Wastewater Servicing Master Plan and developed a Communication and Consultation Plan (CCP). Based on the CCP, at the onset of the study, the Region undertook the following key activities:

- Notice of Commencement (November 30, 2023): A contact list was prepared which included members of the community, government agencies, utilities, Indigenous Communities and other interested parties. The Notice was mailed or emailed to individuals on the contact list and published in the following local paper:
 - Newspaper – November 30 and December 7, 2023 (Inside Halton).
- Public Information Centre (PIC): The PIC was held virtually from November 13 to December 15, 2025. A copy of the PIC Summary Report is provided in **Appendix A** and includes the contact list, engagement summary and presentation materials.
- Key Stakeholder Meeting: Several meetings were held with interested parties throughout the study process, including:
 - Town of Milton
 - Town of Oakville
 - Conservation Halton
 - Developer Groups
 - Ministry of Environment, Conservation and Parks (MECP)

4.1.2 Study Contact List

A Study Contact List was compiled at the onset of the study, including government review agencies, conservation authorities, utilities, and interested members of the community. This list was updated throughout the course of the study as comments were received. The Study Contact List was used for mail and e-mail correspondence, where applicable. In addition to members of the public, key participants and interested parties included:

- Conservation Authorities,
- Indigenous Communities, First Nations and Métis Communities,
- Emergency and Health Services,
- Federal, Regional and Municipal Agencies,
- Rail and Transit,
- Resident/Community Associations,
- School Boards, and,
- Utilities.

The full study contact list is available in **Appendix A**.

4.1.2.1 Property Owner Engagement

The Region facilitated extensive engagement with the applicable property owners throughout the study period to ensure there were open and transparent discussions. Feedback from property owners was

considered throughout the evaluation of alternatives and selection of the preferred alternative. Further engagement with property owners will occur throughout the future detailed design and construction processes.

4.2 Engagement with Indigenous Communities

Indigenous Communities, including First Nations and Métis Communities, have a unique understanding of the natural environment given their relationship with traditional lands, practices, and way of life. As such, they can provide valuable information throughout the study process. First Nations and Indigenous Communities were engaged at the beginning of the study, during background assessments, during public engagement and upon study completion.

This Class EA completed early, ongoing, and engaged communication with First Nations and Indigenous Communities. The Engagement Plan found in **Appendix A**, is a living document that was updated throughout the Class EA process and documents all communications and actions completed with Indigenous Peoples.

Some key points from the Indigenous Engagement Plan include:

- The need for early and meaningful engagement with all interested Treaty Rights Holders affected by or interested in the project;
- Individual engagement protocols for each individual Indigenous Community;
- Creating a respectful environment where Indigenous traditional knowledge is used to augment or complement scientific knowledge;
- Learning, understanding, and acting toward reconciliation;
- Ensuring an ethical space for contribution and knowledge sharing;
- Developing a protocol for engagement and follow-up with individual Indigenous Communities and Partners;
- Obtaining comments and reviews from Indigenous Communities and groups;
- Identifying the best methods for further engagement activities with Indigenous Communities;
- Adherence to commitments to build trust and relationships in a meaningful way; and,
- Facilitating the Indigenous Communities' timelines for engagement activities.

At the onset of the Class EA, a Project Notification Letter was sent to the Indigenous Communities, First Nations and Métis Communities to provide information on the study and provide an opportunity for feedback and participation in the study. The following Indigenous Communities were contacted:

- Mississaugas of the Credit First Nation (MCFN)
- Six Nations of the Grand River (SNGR)
- Haudenosaunee Confederacy Chiefs Council (HCCC)
- Wendat Nation (formerly Huron-Wendat Nation)
- Métis Nation of Ontario

The Region worked with these Indigenous Communities throughout the study to keep them informed, ensuring their feedback was received and considered throughout the study and invited them to participate in key document review and field investigations.

5.0 Background and Policy Context

The following sections present a review of policies, regulations, and legislation at the federal, provincial, and local/municipal levels of government that provide context for this Class EA study.

5.1 Federal Legislation and Policy Context

5.1.1 Department of Fisheries and Oceans – Fisheries Act

The *Fisheries Act*, last amended in 2024, outlines the framework for the management and regulation of fisheries and the conservation and protection of fish and fish habitat within the fishing zones of Canada, all waters in the territorial sea of Canada, and all internal waters of Canada. The most recent revision to the *Fisheries Act* restricts activities that cause “death of fish, other than by fishing” as well as the “harmful alteration, disruption, or destruction of fish habitat” and the release of substances that are known or suspected to be deleterious to fish or fish habitat.

There are several watercourses within the study area with known fish and fish habitat. If an alignment is chosen that crosses any watercourse the *Fisheries Act* will apply to this project. A Fisheries and Oceans Canada (DFO) request for review will be required for activities that harm, disrupt, or cause the destruction of fish habitat, as well as cause death to fish. Any activities impacting watercourses with known Species-at-Risk (SAR) will also require a request for review from DFO.

Relevance to this Class EA: New sanitary infrastructure may be required in proximity to Sixteen Mile Creek, and *Fisheries Act* requirements must be considered.

5.1.2 Environment Canada – Migratory Birds Convention Act

The *Migratory Birds Convention Act* (MBCA) was established in 1917, and last amended in 2024, to protect migratory birds, their eggs, their nests and prohibit the deposit of harmful substances in waters and areas frequented by them. The MBCA 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.

Relevance to this Class EA: There are several woodlots in the study area with potential to support migratory and nesting birds.

5.1.3 Environment Canada – Species at Risk Act

The purpose of the *Species at Risk Act* (SARA) is to prevent wildlife species from being extirpated or becoming extinct, provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened.

Once a wildlife species is listed as a species at risk in the legislation, it is legally protected under the SARA through prohibitions and the mandatory development of a recovery strategy by the Government of Canada.

Relevance to this Class EA: While the SARA applies to species on federal lands, or elsewhere by order of the Governor in Council, it also applies to species at risk migratory birds under the MBCA and fish anywhere they occur.

5.2 Provincial Legislation and Policy

5.2.1 The Planning Act

The *Planning Act* lies within the mandate of the Ontario Ministry of Municipal Affairs and Housing (MMAH). The Act defines the rules for land use planning in Ontario and describes how land uses may be controlled in Ontario, and by whom. The *Planning Act* also defines the roles and responsibilities of the province and municipalities, listed below:

Provincial Responsibilities:

- Issue Provincial Planning Statements (PPS);
- Promote provincial interests;
- Prepare provincial plans, such as the Greenbelt Plan;
- Provide information and advice to municipalities on land use planning issues; and
- Administer local planning controls and provide approvals where required.

Municipal Responsibility:

- Make local planning decisions that will determine the future of communities;
- Prepare planning documents such as Official Plans and Zoning By-Laws; and
- Ensure that planning decisions and documents are consistent with the PPS and conform, or do not conflict with provincial plans.

5.2.2 Provincial Planning Statement

The 2024 Provincial Planning Statement (PPS) is a consolidated statement of the Government of Ontario's policies on land use planning and replaces both the Provincial Policy Statement (2020) and A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019). As a key part of Ontario's policy-led planning system, the PPS sets the policy foundation for regulating the development and use of land province-wide with the aim of meeting the needs of a fast-growing province while enhancing the quality of life of Ontarians.

Key general infrastructure policies included in the 2024 Provincial Planning Statement relevant to wastewater services include the following:

- Infrastructure and public service facilities shall be provided in an efficient manner while accommodating projected needs.
- Planning for infrastructure and public service facilities shall be coordinated and integrated with land use planning and growth management so that they:
 - are financially viable over their life cycle, which may be demonstrated through asset management planning;
 - leverage the capacity of development proponents, where appropriate; and
 - are available to meet current and projected needs.
- Before consideration is given to developing new infrastructure and public service facilities:
 - the use of existing infrastructure and public service facilities should be optimized; and
 - opportunities for adaptive re-use should be considered, wherever feasible.
- Infrastructure and public service facilities should be strategically located to support the effective and efficient delivery of emergency management services, and to ensure the protection of public health and safety in accordance with the policies in Chapter 5: Protecting Public Health and Safety.
- Public service facilities should be co-located to promote cost-effectiveness and facilitate service integration, access to transit and active transportation.

More specifically, the 2024 Provincial Planning Statement recommended that sanitary and water services shall:

- Accommodate forecasted growth in a timely manner that promotes the efficient use and optimization of existing municipal sewage services and municipal water services and existing private communal sewage services and private communal water services;
- Ensure that these services are provided in a manner that:
 - can be sustained by the water resources upon which such services rely;
 - is feasible and financially viable over their life cycle;
 - protects human health and safety, and the natural environment, including the quality and quantity of water;
 - aligns with comprehensive municipal planning for these services, where applicable;
 - promote water and energy conservation and efficiency;
 - integrate servicing and land use considerations at all stages of the planning process; and
 - consider opportunities to allocate, and re-allocate if necessary, the unused system capacity of municipal water services and municipal sewage services to support efficient use of these services to meet current and projected needs for increased housing supply.

Section 3 of the *Planning Act* requires that decisions affecting planning matter are consistent with the Provincial Planning Statement.

Relevance to this study: The Lower Base Line Class EA study is supported by the policies of the 2024 PPS, as being a necessary step for the development of new infrastructure to accommodate growth.

5.2.3 Species Conservation Act (Endangered Species Act)

The *Species Conservation Act (2025)* has replaced the *Endangered Species Act (2007)* as of March 30, 2026. The *Species Conservation Act* aims to identify species at risk and provide protection and conservation for species while taking into account social, economic, and sustainable growth considerations.

Species at risk in Ontario are initially identified by the Committee on the Status of Species at Risk in Ontario (COSSARO), and if approved by the Ontario Ministry of the Environment, Conservation, and Parks, the species will be added to the Protected Species in Ontario List under the Act. The ESA takes a registration-first approach and permits regulation for activities that cannot proceed under a registration.

Relevance to this study: The *Species Conservation Act* applies throughout the Lower Base Line study area, particularly in the vicinity of the Sixteen Mile Creek corridor.

5.2.4 Ontario's Environmental Assessment Act

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

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 or 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 on the whole or any part of Ontario by providing for the protection, conservation, and wise management in Ontario of the environment (RSO1990, c.18, s.2).

5.2.5 Greenbelt Plan

The *Greenbelt Plan (2017)* remains a key framework for protecting agricultural lands, water resources, and natural areas within the Greater Golden Horseshoe. Recent administrative amendments (August 2024) ensure continued application of relevant Provincial Policy Statement and *Growth Plan* policies, maintaining protections for the Greenbelt following their revocation.

5.3 Municipal and Locally Applicable Legislation, Policies and Plans

5.3.1 Halton Region Official Plan

As of July 1, 2024, the Halton Region Official Plan is no longer an official plan for the Regional Municipality of Halton as the *Planning Act* identifies the Region as an “upper-tier municipality without planning responsibilities.” Instead, it is now deemed an official plan of each of the local municipalities in Halton (Town of Oakville, City of Burlington, Town of Milton, Town of Halton Hills) until such time as it is revoked or amended by the local municipalities.

The 2022 Regional Official Plan (ROP) is a land use policy document that guides how Halton Region grows and develops. It includes goals and objectives for new development that reflect the vision of residents and Regional council. The ROP addresses region-wide issues and provides a consistent vision for land use in the local municipalities of Oakville, Burlington, Milton and Halton Hills. Each local municipality has an official plan of their own, which will work alongside the adopted ROP until they undertake a review of their official plan.

The ROP sets out Regional structure consisting of systems, land use designations and constraints to development. The ROP also focuses on four key policy thematic areas, these include: planning vision, healthy communities, land stewardship, and implementation. As noted above, the ROP, in conjunction with Official Plan of the local municipalities, continues to provide direction and high-level guidance for the Region’s growth and development.

5.3.2 Town of Milton Official Plan

Following the Provincial changes to Halton Region’s planning authority, the Town of Milton upholds two Official Plans – the Halton Region Official Plan, 1995, and the Town of Milton Official Plan, 1996, with all respective modifications and amendments up to and including the December 2024 consolidation. The Official Plans aims to ensure that, in the future, the Town of Milton will continue to have a strong sense of community and the neighbourly environment that is evident in Milton. These will be achieved by the adhering to the following goals:

- To Build and Maintain a Diverse and Vital Economy.
- To Build and Maintain a Safe, Livable and Healthy Community.
- To Protect and Enhance our Heritage, Identity and Character.
- To Encourage Sustainable Development.
- To Maximize the Benefits of, and to Promote Conservation, Stewardship and Enhancement of the Natural Environment.
- To Promote the Creation of an Efficient Land Use Pattern.
- To Encourage Human Scale Community Design.
- To Provide Responsible Cost-Effective Local Government and Services.

The Town of Milton has completed the first version of their updated Official Plan, aimed to provide policy direction to manage growth in the community to 2051. More information can be found in the link below.

<https://www.milton.ca/en/business-and-development/official-plan.aspx>

5.3.3 Town of Oakville Official Plan

Following the Provincial changes to Halton Region’s planning authority, the Town of Oakville complies with three Official Plans – the Livable Oakville Official Plan, the North Oakville Secondary Plans and the Halton Region Official Plan. The Official Plan (Consolidated Official Plan August 2008) is referred to as “The Livable Oakville Plan” and establishes the policies and land use designations that implement the Town’s vision “to be the most livable Town in Canada.” The Livable Oakville Plan applies to all lands within the Town except the North Oakville East and West Secondary Plan areas. The Livable Oakville Plan contains goals, objectives and policies established primarily to manage direct physical change and the effects on the social, economic, and natural environment of the municipality, and include:

- Establishing the desired land use pattern for lands within the Town, south of Dundas Street and north of Highway 407 to 2031;
- Coordinating land use and infrastructure requirements to ensure that the anticipated growth can be accommodated;
- Establishing a framework and policy context for decision making that provides certainty for the planning process; and,
- Conforming or not conflicting with provincial plans, has regard to matters of provincial interest, and is consistent with provincial policy statements.

A town-wide Official Plan Review is ongoing. Its purpose is to update Oakville's official plan documents to be consistent or in conformity with the latest Provincial legislation and policies, as well as the Region of Halton Official Plan as amended through the Regional Official Plan Review, and to bring lands subject to the North Oakville East and West Secondary Plans (to the 1984 Official Plan, as amended) into the Livable Oakville Plan. More information can be found at the link below.

<https://www.oakville.ca/business-development/planning-development/official-plan/official-plan-review/>

Conservation Authority Regulation and Policy

Conservation Authorities are local agencies that protect and manage water and other natural resources at the watershed level. These agencies have several responsibilities and functions in the land use planning and development process.

Ontario’s conservation authorities operate under the *Conservation Authorities Act*, which is administered by the Ministry of the Environment, Conservation and Parks (MECP), with provincial oversight related to natural hazard management provided by the Ministry of Natural Resources (MNR). The legislative mandate of conservation authorities, as set out in Section 20 of the *Conservation Authorities Act*, is to establish and undertake programs designed to further the conservation, restoration, development, and management of natural resources on a watershed basis.

Legislative changes introduced through the More Homes Built Faster Act, 2022 (Bill 23) modified aspects of the Conservation Authorities Act and related regulations, clarifying the roles of conservation authorities in development review, natural hazard management, and permit approvals.

Under Ontario Regulation 686/21 (*Mandatory Programs and Services*), conservation authorities are required to deliver programs related to understanding and managing natural hazard risks, including

flooding and erosion, and to support the prevention and mitigation of these risks. Conservation authorities also have provincially delegated responsibilities to review development proposals and planning applications on behalf of the Province to ensure consistency with the natural hazard policies of the *Provincial Planning Statement*, including Sections 5.1.1 to 5.2.8 related to protecting public health and safety.

Conservation authorities regulate development and certain activities within regulated areas through permits issued under Ontario Regulation 41/24 (Prohibited Activities, Exemptions and Permits), which came into effect in 2024 and replaced Ontario Regulation 162/06. These regulations establish the framework for permitting activities within regulated areas and are intended to protect people and property from risks associated with natural hazards such as flooding, erosion, and unstable slopes.

The Lower Base Line study area lies within the jurisdiction of Conservation Halton, primarily within the Sixteen Mile Creek watershed. Conservation Halton is a commenting agency on development applications under the *Planning Act* based on regulations approved by their Board of Directors and the province. The authority also provides technical review related to natural heritage, hazardous lands and water resources (e.g., stormwater management), in coordination with partner municipalities.

Relevance to this study: Should any proposed infrastructure be located within the regulation limits of the Conservation Halton, the Region is responsible for consulting with Conservation Halton and understanding permit requirements.

6.0 Existing Conditions

The EAA requires that the potential environmental impacts of proposed infrastructure be assessed and considered in the evaluation alternatives and selection of the preferred solution(s), and that appropriate mitigation measures are developed and implemented. The EAA defines the environment to include:

- 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; or,
- Any part or combination of the foregoing and the interrelationships between any two or more of them.

The following sections provide a description of each aspect of the environment for this Class EA Study Area.

6.1 Technical Environment

This section describes the existing wastewater infrastructure in the Region associated with the future Lower Base Line WWPS, as well as the geotechnical and hydrogeological conditions within the study area.

6.1.1 Existing Wastewater System

Halton Region's wastewater system services the City of Burlington, the Town of Oakville, the Town of Milton, and part of the Town of Halton Hills. The remainder of the Town of Halton Hills is generally rural with private servicing. The existing wastewater system is comprised of the Lake-based system and Stream-based systems. **Figure 6-1** depicts the existing wastewater system, including existing infrastructure and drainage areas. The following sections outline each of the components of the wastewater system: wastewater treatment plants, and the collection system made up of wastewater pumping stations (WWPS) and sanitary pipes.

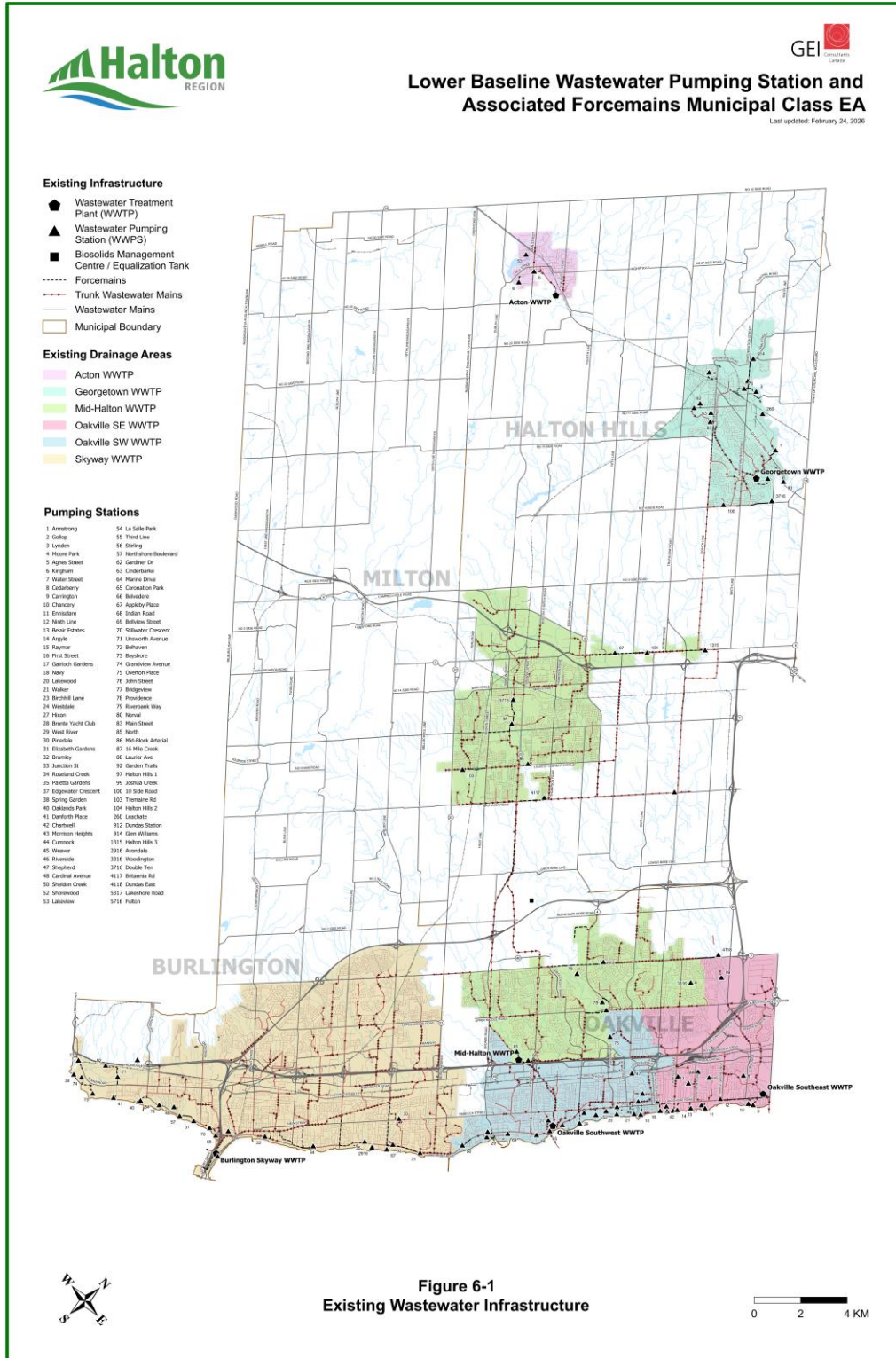


Figure 6-1 – Halton Region Existing Wastewater Infrastructure

6.1.1.1 Wastewater Treatment

The lake-based wastewater system is comprised of four large drainage areas that discharge to the Lake Ontario-based treatment plants: Skyway, Mid-Halton, Oakville Southeast and Oakville Southwest Wastewater Treatment Plants (WWTP). The stream-based wastewater system is comprised of two major drainage areas delineated by treatment plant: the Acton WWTP and the Georgetown WWTP.

The Lower Base Line WWPS will discharge to the Mid-Halton WWTP, located at 2195 North Service Road, just west of Third Line. The Mid-Halton WWTP services an area of approximately 11,000 ha, generally bounded by the QEW to the south, Bronte Road to the west, and Sixteen Mile Creek to the east in South Oakville and Kestell Boulevard/North Ridge Trail in North Oakville, and Dundas Street to the north, in addition to the Town of Milton. In the future, Mid-Halton will service growth in North Oakville and the Halton Hills 401 Corridor.

The Mid-Halton WWTP is a conventional secondary treatment facility and discharges to Lake Ontario through a diffused outfall that combines flows with treated effluent from the Oakville Southwest WWTP. The existing rated capacity of the Mid-Halton WWTP is 125 megalitres per day (MLD).

6.1.1.2 Collection System

Wastewater flows are conveyed by gravity from areas of higher elevation upstream to areas of lower elevation downstream in the collection system. For the most part, the terrain across Halton Region gradually slopes down from north to south, which has led to the planning and construction of gravity collection systems that outlet to Lake Ontario.

Wastewater from Milton is conveyed to the Mid-Halton WWTP via the Boyne Trunk Sewer. A full list of WWPSs that currently pump into the Mid-Halton catchment area are summarized in Table 6-1 including Drumquin WWPS that was recently constructed.

Table 6-1 Wastewater Pumping Stations in Mid-Halton WWTP Catchment

SPS	Facility Name	Firm Capacity (L/s)
55	Third Line WWPS	1408
78	Providence Rd WWPS	70
79	Riverbank Way WWPS	9
82	Fulton St WWPS	1134
85	North WWPS	3508
86	Midblock Arterial WWPS	1215
87	16 Mile Creek WWPS	651
88	Laurier Ave WWPS	250
97	Halton Hills WWPS No.1	503
103	Tremaine WWPS	550
104	Halton Hills WWPS No.2	390
912	Dundas	1200
1315	Halton Hills #3 WWPS	106
4117	Britannia Road	1000
4118	Dundas East	428
--	Drumquin WWPS	1240

The Lower Base Line WWPS will service the areas displayed on **Figure 6-2**. Flows from Georgetown that currently discharge to the Britannia WWPS will be partially diverted to the Lower Base Line WWPS in future, as growth proceeds.

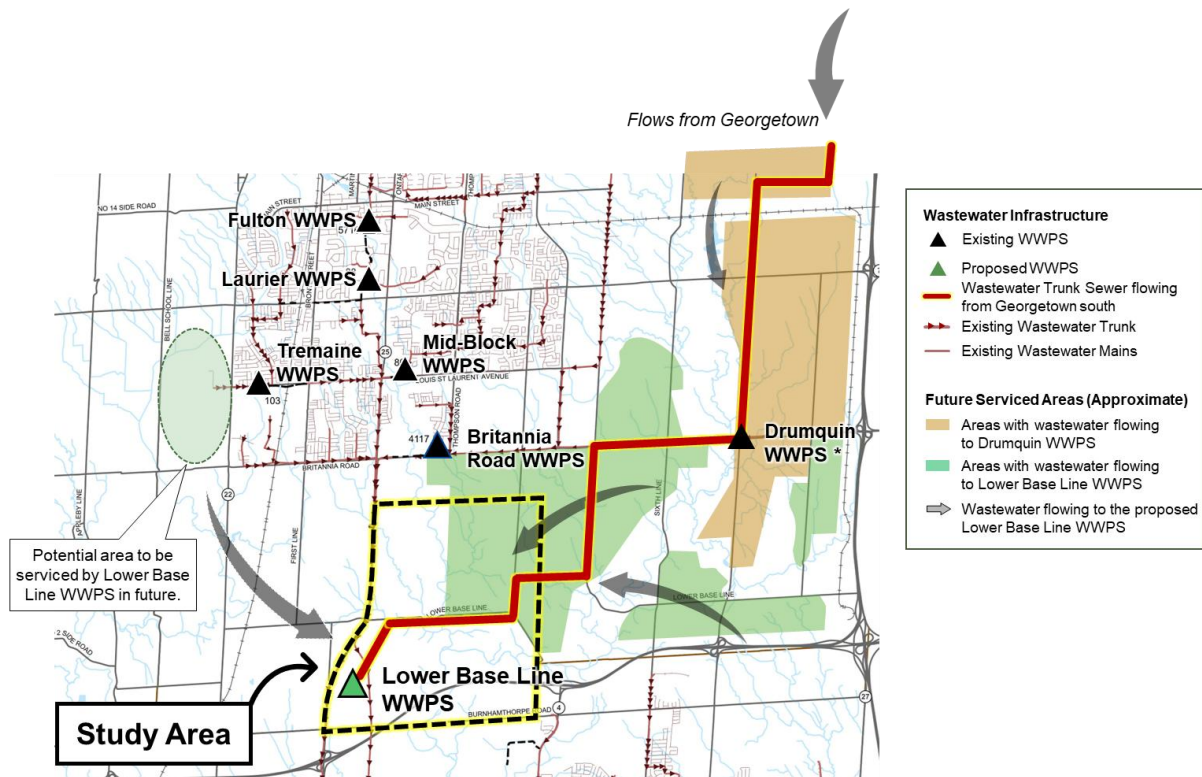


Figure 6-2 – WWPS Servicing Areas

6.1.2 Existing Utilities

Various buried and above-ground utilities are present within the study area. More specifically, Lower Base Line contains a mix of aerial and underground utilities within the municipal right-of-way, including municipal water, sanitary, and storm infrastructure, as well as buried utilities owned by Hydro One, Bell Canada, Rogers Communications, Zayo and Enbridge. Portions of Lower Base Line between Highway 25 and Fourth Line are serviced by single-phase electrical power, with some segments near Sixteen Mile Creek and Lower Base Line Road lacking electrical service entirely. While single-phase power is generally adequate for residential use, it does not provide sufficient capacity to support the operational requirements of a WWPS. Regional Road 25 also contains multiple third-party utilities within the right-of-way.

A high-pressure Enbridge Gas Inc. pipeline runs adjacent to Sixteen Mile Creek. Furthermore, a Hydro One corridor with hydro transmission towers runs parallel and south of Lower Base Line Road.

6.1.3 Geotechnical and Hydrogeological Conditions

A Geotechnical and Hydrogeological Desktop Report was completed by GEI Consultants Canada Ltd. in April 2024 during Phase 1 of the Class EA process to provide an understanding of the local geology and anticipated subsurface conditions that could impact the constructability of a new WWPS and associated pipes, to aid in the selection of a preferred alternative.

The primary soil type within the study area is silty to clayey till, with Paleozoic bedrock along the floodplain of Sixteen Mile Creek. The surficial soils are underlain by shale bedrock of the Queenston Formation, characterized by its red color and presence within harder limestone, dolostone, and sandstone. Across the study area, overburden thickness ranges from 7m to 15m to no overburden where bedrock is exposed within the floodplain of Sixteen Mile Creek.

Well records were reviewed within the study area, and based on available records, the depth to bedrock ranges from 1.8m to 18m, with an average depth of 10m. Groundwater levels were recorded between 0.9m and 30.5m below ground level.

The Geotechnical and Hydrogeological Desktop Report is provided in **Appendix B**.

6.2 Natural Environment

A Desktop Natural Environment Study Area Review was completed by GEI Consulting Canada Ltd. in May 2024, during Phase 1 of the Class EA process to assess the environmental landscape and identify any potential natural environment constraints.

The desktop review identified that the study area is located within the Greenbelt and falls under the regulatory jurisdiction of Conservation Halton. The area is predominantly rural in nature, encompassing a diverse mix of natural features and human-modified landscapes, including agricultural fields, golf courses, rural residences, commercial uses, and existing transportation and utility corridors. Natural features within the area are primarily associated with the West and Lower Middle branches of Sixteen Mile Creek, which traverse the landscape through well-defined valley systems. These valleys, together with numerous smaller tributaries, drainage features, and tableland natural areas, form a connected network of ecological features. Riparian habitats within the main valleys are characterized by wetland communities, including marches and swamps, transitioning into surrounding forest vegetation.

The detailed Natural Environment Desktop report is provided in **Appendix C**.

6.3 Socio-Cultural Environment

6.3.1 Existing Land Uses

The Lower Base Line study area encompasses land which has been designated for various purposes including parkway belt, residential, recreational, commercial, and rural purposes. The study area is located within the Greenbelt Plan and includes lands designated as Agricultural Area, Natural Heritage System, Urban Area, Regional Natural Heritage System, Parkway Belt, and Protected Countryside under the applicable Town of Milton, Town of Oakville, Halton Region, and Greenbelt planning frameworks. Although infrastructure development is permitted within the protected environment lands, additional restrictions apply for any proposed infrastructure within the Greenbelt/Protected countryside designation.

6.3.2 Agricultural Resources

An Agricultural Screening Report was prepared by Colville Consulting Inc. in May 2024 to identify existing agricultural resources within the study area, including agri-food network, relative levels of agricultural investment, and the mix of surrounding land uses. The assessment identified and documented the number and type of agricultural operations (both active and retired), agriculture-related and on-farm diversified uses, field crops present, non-agricultural land uses, and visible agricultural land improvements. Additionally, it identified mitigation measures required to support the development of a long list of properties with potential interest, particularly in relation to potential impacts on agricultural lands.

Further details are provided in the Agriculture Screening Report in **Appendix D**.

6.3.3 Archaeological Resources

A Stage 1 Archaeological Assessment (AA) was undertaken by Parslow Heritage Consultancy Inc. in May 2024 to determine the potential to encounter archaeological resources within the study area. The assessment included an overview of the archaeological policies, development context, historical context, and archaeological context to confirm archaeological potential. The background research identified elevated potential for the recovery of archaeologically significant materials within the study area due to the presence of water sources, 1900 Euro-Canadian settlements and historic settlement roads, and numerous designated and listed cultural heritage resources. Portions of the study area with archaeological potential were recommended for a Stage 2 archaeological assessment prior to future ground disturbances.

The Region is committed to completing a Stage 2 AA through the subsequent design phase of the project. The Region will continue to communicate and engage with Indigenous Communities, First Nations, Métis Communities and the Ministry of Citizenship and Multiculturalism (MCM) throughout the Stage 2 AA process.

The Stage 1 AA can be found in **Appendix E**.

6.3.4 Cultural Heritage Resources

A desktop analysis was conducted by Parslow Heritage Consultancy Inc. in April 2024 to identify known and/or potential areas of cultural heritage value or interest (CHVI) within or crossed by the study area and is based on the MCM Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes. The purpose of the screening is to determine if subsequent cultural heritage studies such as Cultural Heritage Existing Conditions and Preliminary Impact Assessment, site-specific Cultural Heritage Evaluation Reports (CHER), or Heritage Impact Assessment, will be required. The report determined the following:

- A total of 16 listed properties on the Town of Milton’s municipal heritage register and Town of Oakville’s Municipal Heritage Register;
- No designated properties, heritage conservation districts (HDC) or cultural heritage landscapes (CHL) found in the Town of Milton’s Municipal Heritage Register or the Town of Oakville’s Municipal Heritage Register;
- No registered cemeteries/burial sites; and,
- No Canadian Heritage River, designated heritage trails or World Heritage sites.

Approximately 40 parcels are located within the study area, many of which contain buildings and/or structures constructed prior to 1982 and therefore meet the 40-year-old threshold for potential Cultural Heritage Value or Interest (CHVI). Should a preferred site for the Lower Base Line wastewater pumping station and/or associated forcemain alignment contain a potential heritage feature that may be impacted, a Cultural Heritage Evaluation Report (CHER) will be undertaken to further evaluate any identified resources in accordance with Ontario Regulation 9/06. Where a cultural heritage resource is confirmed and cannot be avoided, the findings of the CHER will inform the need for a Heritage Impact Assessment to identify potential impacts and recommend appropriate mitigation and conservation measures. In addition, if the limits of the Project Area are expanded, an updated Cultural Heritage Screening Report (CHSR) will be completed to ensure that all lands subject to potential impact are appropriately assessed.

The cultural heritage screening report can be found in **Appendix F**.

7.0 Phase 1 – Problem and Opportunity Statement

7.1 Problem or Opportunity Statement

As part of Phase 1 of the Municipal Class EA process, the problem or opportunity statement clearly identifies the opportunities and considerations being addressed through the study. The problem or opportunity statement for the Halton Region Lower Base Line WWPS and Associated Forcemains Class EA is as follows:

This study aims to support growth and provide reliable wastewater services for new homes and businesses in Milton and Halton Hills. The study will identify the preferred location for the Lower Base Line Wastewater Pumping Station and alignment for the associated linear infrastructure (pipes), considering technical feasibility, environmental impacts, social and cultural-heritage impacts, property and regulatory requirements and financial impacts.

Site locations and forcemain and sewer alignments were identified and evaluated with a focus on:

- Providing system capacity to meet projected growth needs to 2051;
- Construction challenges and associated risks;
- Providing schedule deliverability and coordination with ongoing and future planned projects;
- Providing operational flexibility for maintenance, inspection, and emergency operations;
- Minimizing environmental (natural, social, and economic) impacts;
- Minimizing land acquisition; and,
- Minimizing total capital, operation and maintenance, and lifecycle costs.

7.2 Opportunities and Considerations

To inform the study's Problem or Opportunity Statement, the following opportunities and considerations were identified:

- Provision of emergency storage, operational flexibility, and redundancy;
- Ability to establish and confirm capacity needs for short and long-term growth within the study area; and,
- Consideration for future land use designations, ahead of development, to minimize potential impacts to the surrounding socio-economic environment.

As the Class EA progressed, the potential for anticipated or emerging challenges was considered. Further assessment focused on the following key areas:

- **Siting/Alignment Locations:** Future land use designations, farmlands, residential neighbourhoods, park lands, traffic impacts, aesthetics, sight lines/views, etc.
- **Natural Environment:** Significant environmental features and policy areas exist within the study area (i.e. Conservation Halton Regulated Area including Sixteen Mile Creek and tributaries, wildlife habitat, Green Belt Area). Furthermore, impacts to groundwater, natural public space, mature trees etc. were considered.

- **Property:** Site access, easements, multiple jurisdictions (e.g., Halton Region, Town of Milton, Town of Oakville, Conservation Halton), utility corridors (e.g., Hydro One, Enbridge Gas Inc.).
- **Utilities:** Portions of the study area are not serviced by three-phase power or natural gas, which is required for facility operation.

8.0 Phase 2 – Alternative Solutions

Phase 2 of the Class EA process was undertaken to identify, develop and evaluate alternative concepts to address the problem or opportunity statement from Phase 1. Following the baseline inventory of natural environment, socio-cultural, and technical factors described in **Section 6**, a list of concepts was developed that would address the study objectives. Based on the preferred concept, a list of alternative locations and alignments for the WWPS and associated sanitary pipes was developed and evaluated using a multi-criterion approach.

8.1 Evaluation Process Overview

Table 8-1 summarizes the approach taken during Phase 2 to identify the preferred alternative.

Table 8-1 Alternative Evaluation Process Overview

Step	Description
1. Develop List of Servicing Concepts and Evaluate	Develop and evaluate a list of servicing concepts based on the study objectives and technical feasibility along with other social and environmental factors.
2. Identify Alternative Sites and Alignments based on Preferred Concept and Evaluate	Develop a list of potential station sites and pipe alignments based on the preferred concept. These alternatives are evaluated considering technical feasibility, socio-cultural impacts, environmental impacts, financial implications and regulatory requirements based on information obtained through background studies and feedback from stakeholders and interested parties.
3. Present information to the Public (PIC)	Present the study and the preliminary preferred alternative at a virtual Public Information Centre and provide stakeholders, interested parties and the public an opportunity to provide comments and ask questions.
4. Confirm the Preferred Alternative	The feedback gained through public and stakeholder consultation, including engagement with Indigenous Communities, First Nations and Métis Communities, is used to confirm the preferred alternative and identify any required mitigation measures before moving forward into the design and implementation phases.

8.2 Servicing Concepts and Evaluation

Servicing concepts were developed to address the problem or opportunity statement identified at the beginning of Phase 1 of the Class EA process. Consistent with the principles of environmental planning, a “Do Nothing” servicing concept was considered. Two additional servicing concepts were developed for evaluation and are illustrated in Figure 8-1. Concept 1 includes a wastewater pumping station located east of Sixteen Mile Creek, with forcemains crossing beneath the creek. Concept 2 consists of a deep gravity sewer crossing beneath Sixteen Mile Creek, with the wastewater pumping station located west of the creek.

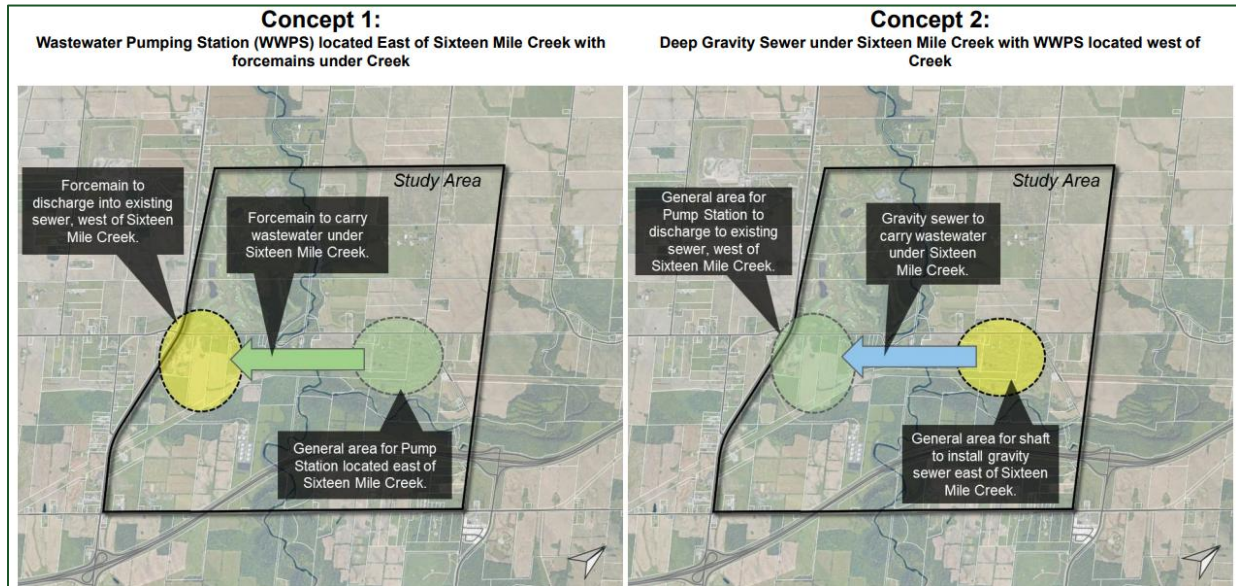


Figure 8-1 – Concepts for WWPS and Associated Sanitary Pipes

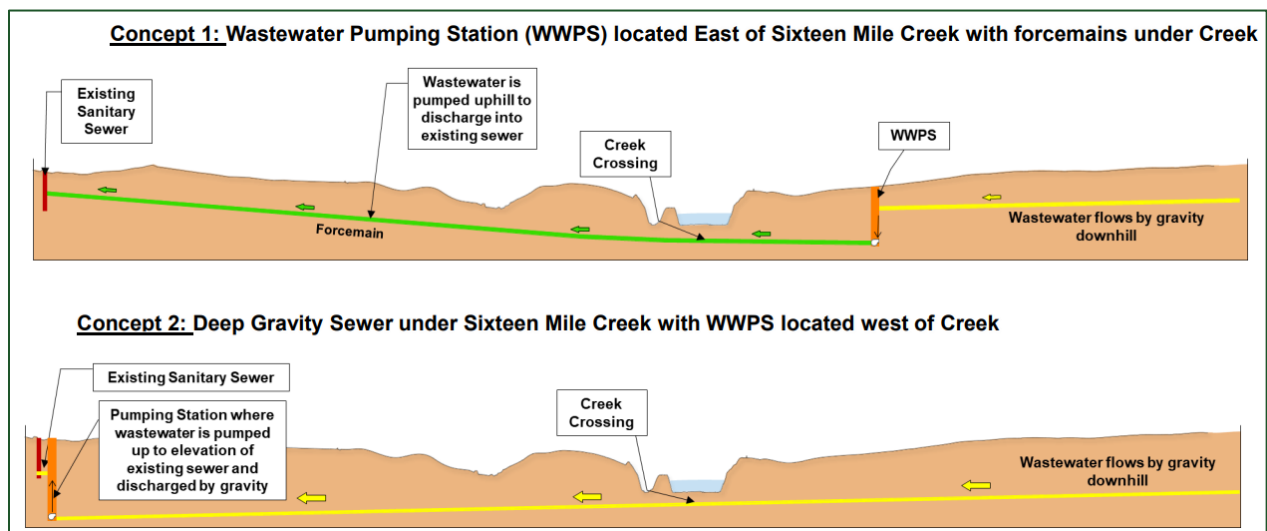


Figure 8-2 – Elevation View of Concepts for WWPS and Associated Sanitary Pipes

The servicing concepts were evaluated based on the differentiating criteria outlined below:

1. Technical:
 - a. How well can the concept accommodate increases in flow to the WWPS over time?
 - b. How much emergency storage does the concept provide?
 - c. How easily does the concept allow for electrical and gas servicing?
 - d. How much energy is required?
 - e. What is the relative construction duration?
 - f. What is the level of complexity required to operate and maintain the pipes and WWPS?
2. Social:
 - a. How much potential is there for odour generation?
 - b. How much potential is there for noise generation?
 - c. Are there aesthetic impacts to the surrounding area?
3. Environmental:
 - a. Are there potential impacts to wildlife?
 - b. Are there potential impacts to wetland/watercourses/habitats?
4. Regulatory compliance:
 - a. How much property is required?
 - b. What kind of permits/approvals are required?
5. Financial:
 - a. What are the property acquisition costs associated with the concept?
 - b. What are the construction costs associated with the concept?
 - c. What are the lifecycle, operation and maintenance costs associated with the concept?

Each alternative concept was qualitatively evaluated against the criteria outlined above using a standardized ranking of poor or negative impacts, moderate impacts, and positive or minimal impacts. Qualitative scores were assigned to reflect how well each concept satisfied the evaluation criteria.

A summary of the evaluation results, including the scoring outcomes and a brief description of each alternative route concept, is provided in **Table 8-2** below.

Table 8-2 Concept Evaluation Results

Concepts	Do Nothing	Concept 1 Wastewater Pumping Station (WWPS) Located East of Sixteen Mile Creek with Forcemains Under Creek	Concept 2 Deep Gravity Trunk Sewer Under Sixteen Mile Creek with WWPS Located West of Creek
Concept Description	Existing conditions are maintained and the WWPS and sanitary piping are not constructed.	A pumping station east of Sixteen Mile Creek conveys wastewater beneath the creek via a forcemain that discharges into the existing wastewater system at the Halton Region Biosolids Management Centre.	A deep gravity trunk sewer crosses beneath Sixteen Mile Creek, with a pumping station west of the creek lifting wastewater into the existing wastewater system at the Halton Region Biosolids Management Centre.
Disadvantages	<ul style="list-style-type: none"> Does not achieve objectives of Problem and Opportunity Statement. Growth Cannot proceed without servicing; negative social impacts of limiting housing supply. 	<ul style="list-style-type: none"> Minimal access to utilities. High energy consumption. Low ability to accommodate increases in flow over time. High operational and maintenance complexity. 	<ul style="list-style-type: none"> Average energy consumption. Average operational and maintenance complexity.
Advantages	<ul style="list-style-type: none"> No disturbance to surface natural features due to construction. 	<ul style="list-style-type: none"> Potential to perform during periods of high wastewater flow. Potential environmental impacts and approval requirements. Average capital costs. 	<ul style="list-style-type: none"> Ability to perform during periods of high wastewater flow. Available access to utilities. Improved ability to accommodate increase in flow over time. Low potential environmental impacts and approval requirements. Municipally owned land availability for WWPS. Lower capital costs.
Screening	Screened out	Screened Out	Passed

Concept 2, which uses a deep gravity sewer to cross under Sixteen Mile Creek with the WWPS located west of the creek, was identified as the preferred option because it has lower environmental and social impacts, is easier to construct, operate, and maintain, and more cost effective. As the preliminary preferred concept, Concept 2 was carried forward to develop a list of alternative locations and alignments for the WWPS and sanitary pipes. The full concept evaluation matrix can be found in **Appendix G**.

8.3 Pumping Station Location and Alternative Gravity Sewer Alignments

Based on the preferred concept, a list of route alternatives and wastewater pumping locations was developed. The list of alternatives is summarized in **Table 8-3** and shown in **Figure 8-3**.

Table 8-3 Summary of Alternative Alignments

Alternative	Route Description
Alternative A Lower Base Line	<ul style="list-style-type: none"> Alternative A begins at the northeast corner of Fourth Line and Lower Base Line, follows the Lower Base Line right-of-way, crosses Sixteen Mile Creek, and then turns south to the Halton Region Biosolids Management Centre property.
Alternative B Lower Base Line and Private Property Easement	<ul style="list-style-type: none"> Alternative B begins at the northeast corner of Fourth Line and Lower Base Line and proceeds southwest through private properties to the Halton Region Biosolids Management Centre property.
Alternative C Golf Course and Hydro Corridor	<ul style="list-style-type: none"> Alternative C begins at the northeast corner of Fourth Line and Lower Base Line, travels west along Lower Base Line, then turns south and follows the Hydro One corridor to the Halton Region Biosolids Management Centre property.

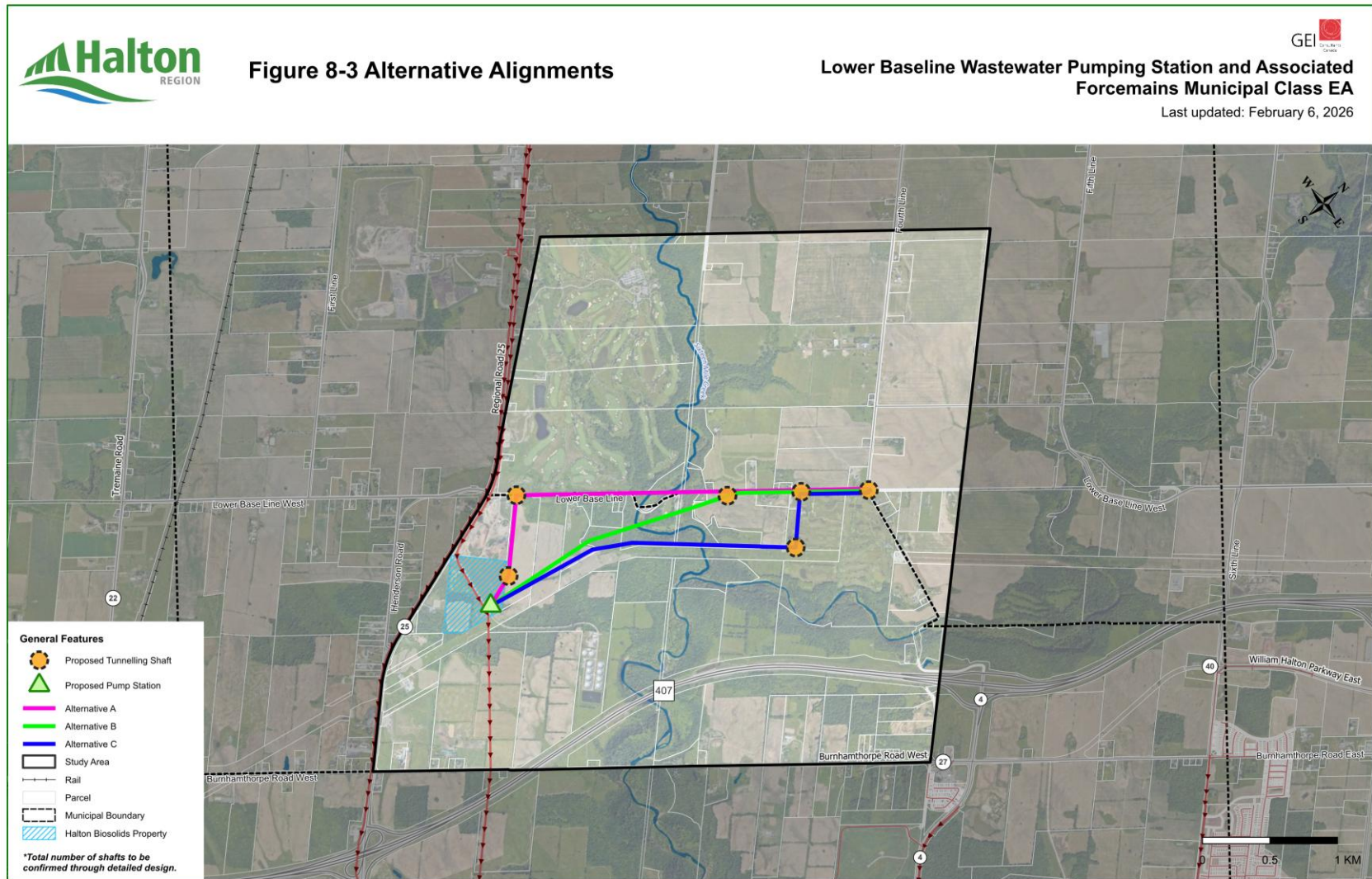


Figure 8-3 – Alternative Alignments

8.4 Detailed Evaluation Criteria

The list of alternatives was evaluated against a range of criteria to select the preliminary preferred alternative route.

The criteria were organized into five categories to support a comprehensive evaluation framework: technical, environmental, social and cultural, legal/jurisdictional, and financial. Each criterion is described in further detail below.

8.4.1 Technical Criteria

The technical criteria focus on engineering feasibility, system performance, and long-term functionality of the proposed WWPS and associated sewer alignments. These criteria assess whether each alternative can be safely designed, constructed, operated, and maintained under existing and anticipated site conditions, while meeting hydraulic performance requirements and accommodating future system needs. The following considerations were assessed when determining each concept's technical feasibility:

- **Geotechnical requirements:** Alternatives with geotechnical conditions that are favourable for tunnelling were scored higher, as they reduced construction risk and complexity. Alternatives with variable or challenging geotechnical conditions along the proposed alignment are less favourable due to increased uncertainty, specialized construction requirements and higher costs.
- **Hydrogeological requirements:** Alternatives requiring shaft construction in areas with anticipated higher groundwater levels or complex hydrogeological conditions are less favourable due to increased construction risk, groundwater management requirements, and potential environmental impacts, while alternatives with lower groundwater conditions are more favourable.
- **Depth and number of required shafts:** Alternatives requiring fewer and shallower shafts were more favorable, as tunnel construction requires entrance and exit shafts with associated staging areas. Alternatives requiring a greater number and increased depth of shafts are less favourable due to increased surface disturbance, construction complexity and higher construction and material costs.
- **Length of sewer:** Alternatives with shorter sewer lengths are more favourable due to reduced construction extent and duration, lower capital costs, and fewer potential environmental and property impacts. Alternatives requiring longer sewer alignments are less favourable due to increased construction footprint, complexity and costs.
- **Hydraulics:** Alternatives with improved hydraulic conditions, such as those with fewer bends in the pipe, reduced pumping needs or reduced depth for any drops in the sewer, are more favourable. Alternatives requiring additional pumping, undesirable hydraulic conditions or more complex hydraulic configurations were less favourable due to increased energy use, operational complexity and long-term costs.
- **Constructability:** Alternatives that can be constructed using straightforward and proven methods, including trenchless technologies such as tunnel boring machines and micro-tunnelling where appropriate, are more favourable. Alternatives requiring more complex, constrained or disruptive construction approaches (such as extensive open-cut excavation) are less favourable due to increased construction risks, surface disruption and cost.

- **Compatibility with future infrastructure:** Alternatives that are compatible with planned or potential future infrastructure, including road widenings, upstream sewer construction, or future watermains, are more favourable as they minimize the need for future relocation or rework. Alternatives that constrain or conflict with potential future infrastructure, or would require modification due to future infrastructure, are less favourable due to increased long-term cost, risk, and coordination requirements.
- **Operations and maintenance:** Alternatives that provide good long-term operability and maintenance access are more favourable, with shaft locations and depths that allow safe and efficient access for inspection, cleaning, and emergency response. Alternatives with deeper or more difficult access to the shaft locations were less favourable due to constrained accessibility, increased maintenance effort, and higher long-term operational costs.

8.4.2 Environmental Criteria

The environmental criteria evaluate the potential effects of the proposed WWPS and associated sewer alignments on the natural environment during construction and long-term operation. These criteria consider how each alternative may interact with surface water, groundwater, ecological systems, and protected environmental features, and assess the extent to which potential impacts can be avoided, minimized, or mitigated. The evaluation is informed by existing environmental conditions, applicable regulatory frameworks, and conservation objectives to ensure the protection of natural resources and environmental features. Under the environmental criteria, considerations include:

- **Impacts to surface water features:** Alternatives that avoid or minimize crossings of surface water features, reduce the potential for in-water works, or alter natural drainage patterns were more favourable, while alternatives requiring multiple crossings or extensive works within or adjacent to open water features are less favourable due to increased risk of hydrologic and ecological impacts.
- **Impacts on ground water/recharge areas/source water protection areas:** Alternatives that minimize disturbance to groundwater systems, recharge areas, and source water protection zones are more favourable, while alternatives with greater potential to disrupt groundwater flow, quality, quantity, or recharge ability are less favourable due to increased environmental risk and regulatory considerations.
- **Construction impacts to species at risk and habitat lands:** Alternatives that avoid or limit construction within species at risk habitat and sensitive natural lands are more favourable, while alternatives requiring construction in or adjacent to these areas are less favourable due to increased potential for habitat disruption, permitting requirements, and mitigation requirements.
- **Impact on conservation authority regulated areas and other protected environmental features:** Alternatives that minimize encroachment into conservation authority regulated areas and other protected environmental features are more favourable, while alternatives with greater intrusions are less favourable due to increased regulatory complexity and potential environmental impacts.

8.4.3 Social Criteria

Social criteria assess the potential effects of the proposed WWPS and associated sanitary sewer on communities, land uses, and cultural resources. These criteria consider how construction and long-term operation may affect Indigenous Communities, First Nations, Métis Communities, residents, businesses, agricultural operations, and culturally sensitive areas, with emphasis on minimizing disruptions and respecting community and indigenous interests. The evaluation considers both temporary construction-related impacts and long-term social considerations, informed by existing conditions, land use context, and ongoing consultation with affected stakeholders. Social considerations assessed under these criteria include:

- **Construction noise/dust/road closures:** Alternatives that minimize construction-related noise, dust, and the duration or extent of road closures are more favourable, while alternatives resulting in prolonged disruptions or impacts to local traffic and residents are less favourable.
- **Archaeological potential at shaft or facility locations:** Alternatives with shaft or facility locations in areas of low archaeological potential are more favourable. Alternatives with shafts located in areas of moderate or high archaeological potential were screened out, or received a less favourable rating due to the Indigenous Community, First Nations, and Métis Community concerns.
- **Cultural heritage potential at shaft or facility locations:** Alternatives that avoid or minimize impacts to known or potential cultural heritage resources at shaft or facility locations are more favorable, while alternatives with greater potential to affect cultural heritage resources are less favourable due to increased risk of disturbances.
- **Impacts to Indigenous Communities, First Nations, and Métis Communities:** Alternatives that avoid or minimize potential impacts to Indigenous Communities, First Nations, and Métis Communities are more favourable, while alternatives with a higher likelihood of affecting Indigenous Communities, First Nations, and Métis Communities are less favourable to respect Treaty Rights.
- **Impacts on agricultural lands:** Alternatives that avoid or minimize disturbances to agricultural lands are more favourable. Alternatives resulting in permanent or temporary impacts on agricultural operations are less favourable due to potential effects on farm productivity and land use.
- **Potential for odours near sensitive receptors:** Alternatives that minimize the potential for odour impacts near sensitive receptors are more favourable. Alternatives located closer to residential areas or other sensitive receptors are less favourable due to increased risk of nuisance.

8.4.4 Legal and Jurisdictional Criteria

Legal and jurisdictional criteria evaluate the regulatory, approval, and property considerations related to the proposed WWPS and associated sanitary sewer. These criteria assess the extent to which each alternative aligns with applicable legislation, approval processes, and jurisdictional requirements, as well as the complexity and risk associated with implementation. Consideration is given to land ownership and property rights, regulatory compliance and approvals, and steps required to advance the project through detailed design and construction. Under the legal and jurisdictional criteria, considerations include:

- **Complexity of required property acquisitions:** Alternatives avoiding or requiring fewer property acquisitions and relying primarily on temporary or permanent easements are more favourable, while alternatives requiring acquisition of multiple properties are less favourable due to impacts on private property owners, schedule risk, and cost.
- **Excess soils management requirements:** Alternatives generating lower volumes of excess soils and allowing for reuse are more favourable, while alternatives requiring extensive soils management, off-site hauling, or specialized handling are less favourable due to increased regulatory, logistical, and cost considerations.
- **Required approvals and permits:** Alternatives requiring fewer and more common approvals and permits are more favourable, while alternatives requiring multiple, complex, or rare approvals from regulatory agencies are less favourable due to increased regulatory complexity, coordination effort, and schedule risk.

8.4.5 Financial Criteria

The financial criteria assess the relative costs associated with the implementation, operation, and long-term ownership of the proposed WWPS and associated sanitary sewer. These criteria consider both upfront and ongoing financial implications to support a transparent comparison of alternatives and inform value-based decision-making. The evaluation accounts for capital costs, property-related costs, and long-term operations and maintenance expenditures over the lifecycle of the infrastructure.

8.5 Detailed Evaluation of Alternatives

For each criterion, the concepts were rated with a red X to indicate a negative impact or greater risk, a yellow dash to indicate a moderate impact, or a green check mark to indicate a positive or minimal impact.

Through the evaluation, **Alternative A (Lower Base Line)** performed the strongest overall across the assessment criteria. From a technical perspective, it was identified as having higher constructability scoring with a route that has greater future accessibility for inspection and maintenance of the sewer, due to the majority of its alignment falling within the municipal right-of-way of Lower Base Line. Environmentally, while some impacts were identified, they were generally limited and manageable compared to Alternative B and C. Socially, the alternative performed well by minimizing impacts to existing land uses and communities. Alternative A is also ranked favorably under legal and jurisdiction considerations as it largely utilizes Region owned lands, reducing the complexity of approvals and property requirements. Financially, Alternative A was assessed as moderate in cost. Overall, Alternative A minimizes environmental and social impacts, is easier to construct and operate, and makes efficient use of municipally owned land, resulting in the highest overall ranking.

Alternative B (Lower Base Line and Private Property Easements) demonstrated mixed performance across the criteria. While technically feasible, the need to cross several private properties introduces additional construction and coordination challenges, along with future accessibility concerns. Environmental impacts were assessed as moderate and comparable to Alternative A. Socially, the alternative performed similarly overall to Alternative A. While this alternative results in potentially fewer road closures and construction impacts, there is higher potential to impact cultural heritage and agricultural lands, and similar potential to encounter archaeological features. Legal and jurisdictional considerations were a key constraint, as securing easements presents higher risk and complexity, and again, impacts private landowners. From a financial perspective, Alternative B performed well compared to the other options due to the shorter length of tunnelling required. Overall, while feasible, this alternative affects more private properties and is more challenging to construct and implement, resulting in a mid-range ranking.

Alternative C (Golf Course and Hydro Corridor) performed least favorably across most criteria. Technically, the alternative presents significant challenges due to constraints associated with the hydro corridor and golf course lands. Environmentally, it was identified as having greater potential impacts relative to the other alternatives. Social impacts were also higher, given increased disruption to existing land uses and recreational areas. Legal and jurisdictional considerations were a notable constraint, as the alternative involves multiple third-party lands and complex approval requirements. Financially, this option was assessed as having the highest capital cost due to the longer tunnel length, which increases both construction requirements and the number of shaft locations, as well as associated operation and maintenance needs. Overall, the greater environmental and social impacts, combined with the higher costs and implementation complexity, resulted in Alternative C ranking lowest.

Table 8-4 on the following page summarizes the evaluation of each alternative alignment against the identified criteria.

Table 8-4 Alternative Alignment Evaluation Summary

Criteria	Alternative A Lower Base Line	Alternative B Lower Base Line and Private Property Easement	Alternative C Golf Course and Hydro Corridor
Technical	✓	—	✗
Environmental	—	—	✗
Social	✓	✓	—
Legal/Jurisdictional	✓	✗	✗
Financial	—	✓	✗
RESULTS	Minimizes environmental and social impacts, is easier to construct and operate, and efficiently uses Region-owned land.	Impacts more private properties, more challenging to construct	Impacts more private properties, greater social impacts to existing land uses, highest capital cost.
RANKING	1	2	3

8.6 Lower Base Line Preferred Conceptual Route

Alternative A (Lower Base Line) was identified as the preferred route. As shown in **Appendix G**, this route scored the highest for all five criteria because:

- **Technical:** Overall, the route alignment follows the municipal right-of-way, reducing private property needs and improving future accessibility for maintenance.
- **Social-Cultural:** The route avoids the Hydro One utility corridor and recreational areas. The route has the least direct impact on existing land uses (e.g., agricultural, golf course, etc.).
- **Natural Environment:** The route has the lowest potential impact natural features. Opportunities exist to mitigate potential impacts.
- **Legal/Jurisdictional:** The route is mainly within municipally owned land (property and road right-of-way) minimizing additional legal and/or jurisdictional requirements when obtaining land or permits.
- **Economic:** This route efficiently utilizes municipally owned land, reducing costs to obtain additional land and access.

The preliminary preferred alternative and WWPS location were presented at the PIC from November 13 to December 15, 2025. Following the review of comments received, Alternative A was confirmed as the preferred conceptual route.

Figure 8-4 provides a map of the preferred conceptual route.

The preferred design concept for the Lower Base Line WWPS and sanitary sewer will improve the capacity of the sanitary system within the study area while supporting the broader regional long-term servicing plan for the existing community and future growth, achieving the objectives of this study, as identified in the Problem and Opportunity Statement.

8.6.1 Benefits of the Preferred Alternative

The preferred design concept addresses future capacity needs to 2051, as well as other benefits including:

- Short-term construction impact with long-term community benefits.
- Opportunities exist to minimize potential construction impacts on surface features through use of alternative construction technologies.
- Provides servicing for future growth in accordance with the Integrated Master Plan.
- Has the least potential impact on the environment and meets current design standards.
- Allows for collaboration with municipal partners (Town of Milton, Town of Oakville) to facilitate construction while minimizing potential impacts to private land and to the community.

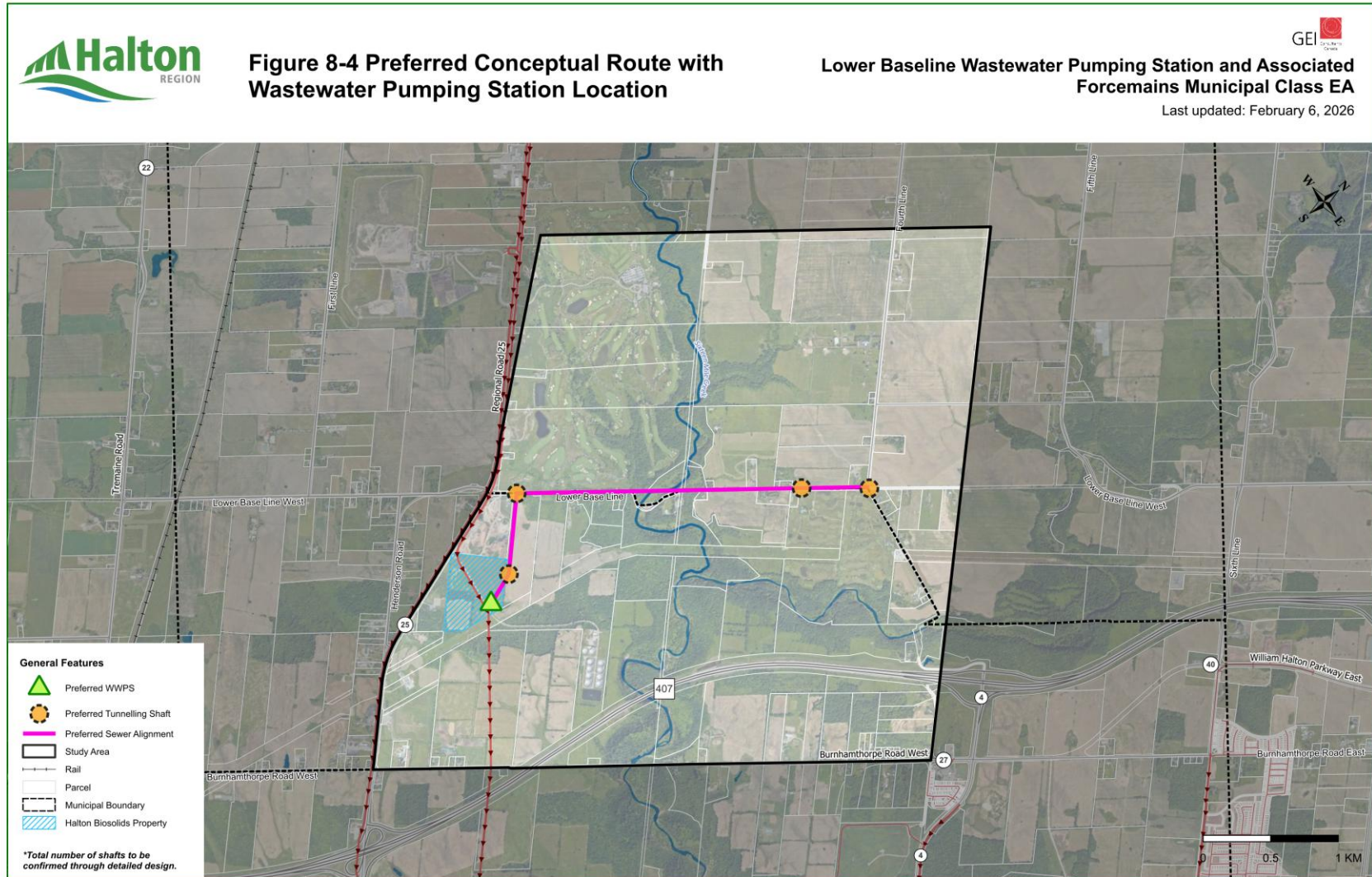


Figure 8-4 – Preferred Conceptual Route with WWPS Location

9.0 Implementation

Following the completion of the Lower Base Line Wastewater Pumping Station and Associated Forcemains Class EA, the Region expects to transition directly into detailed design which will take place over the course of 2026, and then implementation which is anticipated to be in 2027.

The following subsections summarize the studies conducted to assess impacts during construction of the preferred route, and the mitigation measures required.

At the end of Phase 2 of the Municipal Class EA process for Schedule B projects, a Notice of Completion is issued, and the Project File Report is made available for public review for a period of 30 days. The Notice of Completion for this Class EA was issued on April 10, 2026, and sent to review agencies, stakeholders, interested parties, members of the public, and Indigenous Communities, First Nations, and Métis Communities. When the Notice of Completion was issued, this Project File Report was made available on the following Halton Region webpage for public review.

<https://www.halton.ca/for-residents/opportunities-to-participate/online-consultation-lower-base-line-wastewater-pumping-station-and-associated-forcemains-municipal>

9.2 Commitments and Mitigation Measures

9.2.1 Natural Environment

This section describes the potential impacts of the proposed WWPS and sanitary pipes on natural heritage features, and associated mitigation measures where impacts cannot be avoided. Refer to **Figure 9-1**. Natural constraints and the Conservation Halton Regulation Limit near the preferred conceptual alignment are illustrated in **Figure 9-1**. Further details can be found in **Appendix C**.

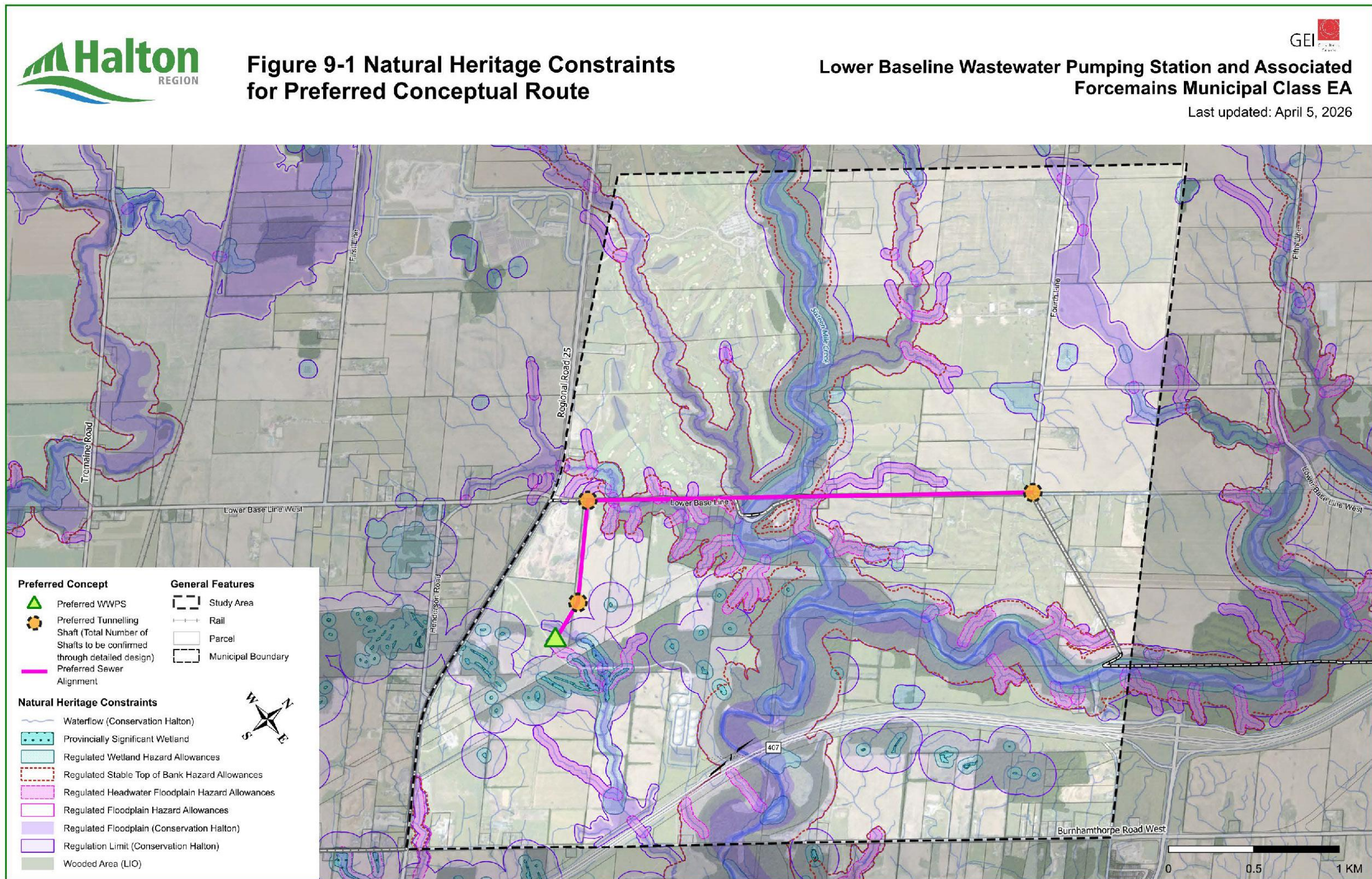


Figure 9-1 – Natural Heritage Constraints for Preferred Conceptual Route

Table 9-1 Potential Impacts to Natural Heritage and Mitigation Measures

Potential Direct or Indirect Impacts	Avoidance and Mitigative Measures	
	Planning Stage	Implementation Stage
Aquatic Systems		
Loss or Alteration of Fish Habitat in watercourses and direct impacts on fish (including species at risk)	<ul style="list-style-type: none"> • Site wastewater infrastructure to avoid watercourses, fish habitat, natural hazards, and regulatory setbacks where possible. • Minimize impacts at watercourse crossings by using trenchless installation methods and locating shafts and pits outside sensitive areas. • Ensure buried infrastructure is installed at sufficient depth below watercourses to prevent long-term impacts. • Avoid headwater drainage features where feasible; where impacts are unavoidable, maintain or replicate key ecological functions. • Avoid impacts to Silver Shiner critical habitat; where unavoidable, minimize the footprint and restrict in-water works to approved timing windows. 	<ul style="list-style-type: none"> • Prepare and implement erosion and sediment control measures, with regular monitoring and timely corrective actions during construction. • Apply enhanced monitoring where works occur near sensitive habitats, including Silver Shiner critical habitat. • Implement spill prevention and response measures to minimize the risk of contaminant releases during construction. • Avoid in-water works where possible; where required, schedule works within approved timing windows to protect fish and fish habitat. • Implement fish salvage measures, where necessary, in accordance with applicable provincial licensing requirements. • Consider construction timing for trenchless installations to avoid sensitive periods for aquatic species, where vibration effects may occur.
Changes to surface water drainage and water quality	<ul style="list-style-type: none"> • Avoid impacts to watercourses and headwater drainage features where feasible. • Where impacts are unavoidable, maintain drainage and water quality through appropriate realignment and buffering measures. • Incorporate stormwater management considerations into the WWPS design, including runoff control, discharge, and infiltration. 	<ul style="list-style-type: none"> • Implement erosion and sediment control and spill prevention measures to minimize potential environmental impacts during construction. • Manage materials (including excess soil), equipment, and operations to prevent contaminants from entering watercourses, headwater drainage features, or wetlands. Excess soil shall be managed in accordance with O Reg. 406/19, including completion of Past Uses, Sampling and Analysis Plan and Soil Characterization Report during detailed design. • Ensure all machinery is clean and properly maintained prior to and during on-site activities (no leaks of fuel, grease or oils). • Vehicle maintenance and refueling shall be confined to designated areas a minimum of 30m away from any natural features, and all activities shall be controlled to prevent entry of petroleum products or other deleterious substances into the natural environment.
Impacts to wetlands	<ul style="list-style-type: none"> • Site permanent infrastructure and temporary construction areas to avoid wetlands and maintain associated buffers where feasible. • Where facilities are located within wetland catchments, incorporate stormwater management and infiltration measures to avoid changes to wetland hydrology. 	<ul style="list-style-type: none"> • Implement water quality protection measures, including erosion and sediment control and spill prevention, to minimize potential impacts to wetlands. • Monitor groundwater quality encountered during construction dewatering and provide treatment prior to discharge as applicable.

Potential Direct or Indirect Impacts	Avoidance and Mitigative Measures	
	Planning Stage	Implementation Stage
Terrestrial Ecosystems		
Loss/alteration of wildlife habitat and linkages	<ul style="list-style-type: none"> Site permanent infrastructure and temporary construction areas to avoid or minimize impacts to wildlife habitat, ecological linkages, and other sensitive natural features where feasible. 	<ul style="list-style-type: none"> Apply appropriate setbacks from construction and operational areas to protect wildlife habitat. Phase any necessary habitat removals and apply timing and mitigation measures to reduce effects on wildlife. Where impacts are unavoidable, implement restoration and enhancement measures to maintain ecological functions.
Effect on Species at Risk	<ul style="list-style-type: none"> Identify Species at Risk and potential habitat early and avoid impacts to confirmed habitat through appropriate siting and setbacks. Where works within SAR habitat are unavoidable, apply construction phasing and mitigation measures to minimize effects. Obtain any required approvals or registrations under the <i>Endangered Species Act</i> in consultation with MECP. 	<ul style="list-style-type: none"> Establish appropriate setbacks from construction and operational areas to protect Species at Risk (SAR) habitat and movement corridors. Schedule tree removals outside of sensitive wildlife windows; additional surveys may be required where timing constraints apply. Implement SAR awareness, training, and observation protocols for construction activities in sensitive areas.
Construction noise, light, dust and disturbances to wildlife and Species at Risk	<ul style="list-style-type: none"> Limit night-time construction where feasible and maximize separation from sensitive habitats to reduce noise and light disturbance. Direct temporary construction lighting away from natural features. Develop an erosion and sediment control plan at the detailed design stage to identify and implement appropriate mitigation measures. 	<ul style="list-style-type: none"> Locate staging, storage, and material areas outside natural heritage features and associated buffers. Design and operate permanent lighting to minimize effects on wildlife by directing light away from natural areas and limiting night-time illumination where feasible. Implement erosion, sediment, and dust control measures during construction to minimize off-site impacts.
Impacts on woodlands and other vegetated areas	<ul style="list-style-type: none"> Minimize impacts to woodlands and other natural vegetation and maintain appropriate buffers where works are adjacent. Phase vegetation removals and apply mitigation measures, including timing restrictions, where removals are required. Replace removed trees in accordance with Regional tree-canopy replacement policies. Prepare restoration and/or enhancement plans where natural features may be affected. Identify a vegetation protection zone in alignment with Region OP policy 139.1.7(4) 	<ul style="list-style-type: none"> Maintain appropriate setbacks from protected woodlands, trees, and vegetated areas. Schedule tree removals outside sensitive wildlife timing windows and coordinate Species at Risk mitigation with regulatory agencies, as required. Restore and enhance temporarily disturbed areas promptly following construction. Maintain a vegetation protection zone during and post-construction.
Colonization of invasive species on disturbed soils	n/a	<ul style="list-style-type: none"> Manage tree removal and disposal to reduce the spread of invasive species. Apply best management practices during construction to prevent the introduction and spread of invasive species. Restore disturbed areas using native species and appropriate cover crops suited to local conditions.

To confirm the specific required mitigation measures and inform the detailed design, further site-specific field investigations are recommended as listed below:

- Amphibian Call Surveys;
- Breeding Bird Surveys;
- Botanical inventories and Ecological Land Classification mapping confirmation;
- Headwater drainage feature review;
- Feature limit staking, including wetland staking;
- Tree inventories, and Tree Impact and Protection Plan; and,
- Environmental Site Assessment (Phase 1 and 2).

Furthermore, the additional assessments below are required to ensure protection of the environment during construction:

- Erosion and Sediment Control Plan
- Past uses, Sampling and Analysis Plan;
- Soil Characterization Report;
- Soil Management Plan; and,
- Restoration Plan.

Further, opportunities for enhancement and restoration to the natural heritage system should be integrated into the design of the proposed infrastructure works. The detailed design should outline how impacts will be minimized, mitigated, restored and enhanced.

9.2.2 Socio-Cultural Environment

This section describes the potential impacts of the proposed WWPS and sanitary pipes on cultural heritage features and archaeology, and the mitigation measures to minimize negative impacts. Refer to **Table 9-2**. Further details can be found in **Appendices D, E and F**.

Table 9-2 Potential Impacts to Socio-Cultural Environment and Mitigation Measures

Potential Impacts	Mitigative Measures	
	Planning and Design Stage	Construction and Operation Stage
Archaeology		
Impact or disturbance of archaeological artefacts	<ul style="list-style-type: none"> Areas that may be impacted by any ground disturbance during construction and identified as retaining archaeological potential through the Stage 1 Archaeological Assessment, shall have a Stage 2 archaeological assessment completed prior to any ground disturbance carried out by a licensed consultant archaeologist and completed in accordance with the Ministry of Citizenship and Multiculturalism's <i>Standard and Guidelines for Consultant Archaeologists, 2011</i>. Agricultural lands recommended for Stage 2 assessment shall be subject to pedestrian survey at 5 m intervals, in accordance with Section 2.1.1 of the <i>Standards and Guidelines</i>. Non-agricultural lands (i.e., manicured lawns and wooded areas) shall be subject to test pit survey at 5 m intervals, in accordance with Section 2.1.2. Engage with Indigenous Communities, First Nations, and Métis Communities and support their participation in the Stage 2 Archaeological Assessment at their request. 	<ul style="list-style-type: none"> Engage with Indigenous Communities, First Nations, and Métis Communities during construction and support their monitoring of ground disturbing activities at their request. If deeply buried archaeological deposits are discovered during construction, MCM shall be notified immediately, and construction operations around the area of discovery shall cease until a licensed archaeologist determines the nature and significance of the deposits. Should previously undocumented archaeological resources be uncovered, these may form new archaeological sites and be subject to Section 48 (1) of the <i>Ontario Heritage Act</i>. If human remains are encountered during construction, the Cemeteries Regulation Unit of the Ministry of Consumer Services should be notified. In situations where human remains are associated with archaeological resources, MCM should be contacted to ensure the site is not subject to unlicensed alterations which would be a contravention of the <i>Ontario Heritage Act</i>.
Cultural Heritage		
Impact to cultural heritage features or cultural heritage landscapes	<ul style="list-style-type: none"> The proposed Lower Base Line preferred conceptual location and route do not impact properties containing cultural heritage resources. If this changes through the detailed design, a Cultural Heritage Evaluation Report (CHER) would be required to confirm cultural heritage resources and identify any required mitigation measures. 	n/a
Agricultural		
Loss of Prime Agricultural Land	<ul style="list-style-type: none"> Develop a rehabilitation plan to restore lands disturbed portion of the subject lands back to an agricultural condition and minimize the loss of prime agricultural lands. 	<ul style="list-style-type: none"> Ensure rehabilitation plan is executed during construction.
Loss of Cropland	<ul style="list-style-type: none"> Prepare a Rehabilitation Plan to ensure underdeveloped portions of Subject Lands, which are disturbed by construction activity can be successfully cultivated. 	<ul style="list-style-type: none"> Continue farming disturbed crop lands after construction is complete where possible.
Surficial Drainage	<ul style="list-style-type: none"> Prepare a Grading Plan, Drainage Plan and Stormwater Management Plan. 	<ul style="list-style-type: none"> Ensure site grading and stormwater management is executed as designed.
Disruption to Farm Operations	<ul style="list-style-type: none"> Provide advance notice to nearby farmer of planned construction works. 	<ul style="list-style-type: none"> Ensure access to farm operations and farm fields is maintained at all times through construction.
Noise, Dust & Light	<ul style="list-style-type: none"> Adhere to Ministry of the Environment Conservation and Parks (MECP) guidelines. 	<ul style="list-style-type: none"> Adhere to Ministry of the Environment Conservation and Parks (MECP) guidelines.
Wells, Irrigation, Water Bodies	<ul style="list-style-type: none"> Prepare a Hydrogeological study for the subject lands, if required. Conduct a private well monitoring program to establish pre-construction water levels; continue monitoring through construction to understand impacts of construction on private wells, if any. 	<ul style="list-style-type: none"> Implementation recommendations of Hydrogeological study.
Social / Community		
Traffic Impacts and Property Access	<ul style="list-style-type: none"> Complete a Traffic Management Plan to understand impacts to traffic and property access along Lower Base Line Road during different phases of construction and proposed mitigating measures to minimize road closures and associated impacts and ensure properties are continually accessible. 	<ul style="list-style-type: none"> Implement recommendations of traffic management plan. Communicate with impacted residents regarding any partial road closures, and overall construction timing.
Air, Odour, Noise and Vibration	<ul style="list-style-type: none"> Should potential air and odour impacts be identified, undertake the necessary supplemental studies to define impacts and develop mitigation measures. 	<ul style="list-style-type: none"> Meet all applicable MECP air quality standards. Adhere to Town of Oakville and Town of Milton noise bylaws. Work within the MECP's Environmental Noise Guideline – Stationery and Transportation Sources – Approval and Planning.

A summary of additional studies related to socio-cultural factors that shall be completed as required during the detailed design phase is provided below:

- Stage 2 Archaeological Assessment;
- Grading and Stormwater Management Plan;
- Traffic Management Plan;
- Noise Impact Assessment;
- Agricultural Rehabilitation Plan;
- Hydrogeological Studies; and,
- Drainage Study.

9.2.3 Other Technical Studies

Other technical studies that will support the design of the preferred conceptual alignment are listed below:

- Geotechnical Study (soils, boreholes, monitoring wells along preferred alignment);
- Hydraulic Assessment of proposed sewer and pumping station;
- Subsurface Utilities Engineering investigation;
- Topographical Survey; and,
- Geophysical survey.

9.3 Future Permits and Approvals

Prior to construction of the proposed works, a number of permits and approvals are required as summarized in **Table 9-3**.

Table 9-3 Overview of Future Permits and Approvals

Agency	Permit / Approval	Details
Ministry of Environment, Conservation and Parks (MECP)	Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) Amendment	<ul style="list-style-type: none"> Add a new WWPS to Halton Region's existing CLI-ECA.
	Permit to Take Water (PTTW)	<ul style="list-style-type: none"> Required to support dewatering during shaft construction and tunnelling operation.
	Greenbelt Considerations	<ul style="list-style-type: none"> Alignment downstream from east of Sixteen Mile Creek within Protected Countryside. Greenbelt Plan (2017) permits new infrastructure in the Protected Countryside approved under <i>the Environmental Assessment Act</i>. Additional policy requirements set out in the Greenbelt Plan will be administered by the Environmental Management Plan.
	Environmental Activity and Sector Registry (EASR)	<ul style="list-style-type: none"> For water taking to support shaft and tunnel operations.
Conservation Halton (CH)	Permit for Development Interference with Wetlands and Alternation to Watercourse and Shoreline Regulation	<ul style="list-style-type: none"> Construction work is proposed within CH regulatory area. Construction works including: <ul style="list-style-type: none"> New wastewater forcemain crossing at 16 Mile Creek. Any design changes (i.e., locations of the proposed shafts within the regulated area). Dewatering of the entry and exist shafts at the regulated area, and associated mitigation of any potential negative impacts
Town of Oakville	Municipal Consent Approval	<ul style="list-style-type: none"> Coordinated approval with Town throughout design including consideration for construction and blasting. Town of Oakville has deferred Municipal Consent Approval to Town of Milton for work along Lower Base Line.
	Site Plan Approval	<ul style="list-style-type: none"> Potentially required for access road on 2346 Lower Base Line property. Requires pre-consultation meeting to confirm requirements.
	Road Occupancy Permit	<ul style="list-style-type: none"> For full road closures including a traffic control plan and detour routes. Contractor to obtain. Town of Oakville has deferred road occupancy to Town of Milton for work along Lower Base Line.
	Site Alteration Permit	<ul style="list-style-type: none"> Potentially required if excavated material is stockpiled on 2346 Lower Base Line property or if any tunnelling shafts extend outside the Town's ROW.
	Zoning By-Law Amendment	<ul style="list-style-type: none"> May be required for linear works, to be reviewed with Town, likely to be focused on WWPS.
	Tree Removal By-Law Requirements	<ul style="list-style-type: none"> Where applicable, private tree by-law will apply to any tree removal on private property.
	Noise Exception Permit Application	<ul style="list-style-type: none"> Where applicable, a noise exception permit application is required.
	Building Permits	<ul style="list-style-type: none"> Building permits will be required for any potential above-grade control buildings, electrical/mechanical equipment buildings, and/or external electrical substation to house the electrical transformers, switchgear, and standby power generators.
	Short-term Dewatering Permit	<ul style="list-style-type: none"> Where temporary construction dewatering is required to discharge into the Town's storm sewer system.
Material Management Plan	<ul style="list-style-type: none"> For on-site management of materials generated by boring and tunnelling To be coordinated with the Erosion and Sediment Control Plan in cases of incoming materials, on-site excess reuse materials, and off-site excess material. To comply with O.Reg. 406/19 	
Town of Milton	Municipal Consent Approval	<ul style="list-style-type: none"> Coordinated approval with Town throughout design including consideration for construction and blasting.
	Site Plan Approval	<ul style="list-style-type: none"> Required at Fourth Line property.
	Road Occupancy Permit	<ul style="list-style-type: none"> For all road closures including a traffic control plan and detour routes. Contractor to obtain.
	Site Alteration Permit	<ul style="list-style-type: none"> Potentially required if excavated material is stockpiled on Fourth Line property or if any tunnelling shafts extend outside the Town's ROW.
Hydro One	None	<ul style="list-style-type: none"> No permits expected as proposed works do not encroach on Hydro corridor.
Enbridge	Crossing and Encroachment Consent	<ul style="list-style-type: none"> Tunneled WWM crosses below easement on 2346 Lower Base Line property. Access road and construction traffic crossing over easement on 2346 Lower Base Line property. Tunneled WWM crosses below high-pressure gas line on Lower Base Line west of Sixteen Mile Creek.
Imperial Oil (Sarnia Products)	Application to Cross	<ul style="list-style-type: none"> Tunneled WWM crosses below easement on 2346 Lower Base Line property. Access road and construction traffic crossing over easement on 2346 Lower Base Line property.

10.0 Conclusions and Recommendations

As the Region continues to grow, pressure on the existing and future wastewater infrastructure system will increase. The proposed preferred design concept addresses future capacity needs to 2051 within the defined area, as well as other benefits including:

- Short-term construction impacts with long-term community benefits.
- Short-term and long-term operational flexibility to account for wide range of flow rates
- Opportunities exist to minimize potential construction impacts on surface features through the use of alternative construction technologies.
- Minimized number of tunnelling shafts.
- Has the least potential impact on the environment and meets current design standards.

The Lower Base Line Class EA Study has developed a comprehensive solution that will improve the capacity within the existing study area, while supporting the broader regional long-term servicing plan for the existing community and future growth.

The preferred solution identified the following components:

- New wastewater pumping station facility
- Gravity sewer alignment primarily along Lower Base Line

Consideration of potential impacts was included as part of the evaluation of alternatives and can be addressed by the recommended mitigation measures. Public, Indigenous Communities, First Nations, and Métis Communities, and agency notifications were provided throughout the course of the Class EA study. All comments have been addressed or will be addressed by the mitigation measures outlined in this Project File Report as the project proceeds through detailed design and implementation phases.