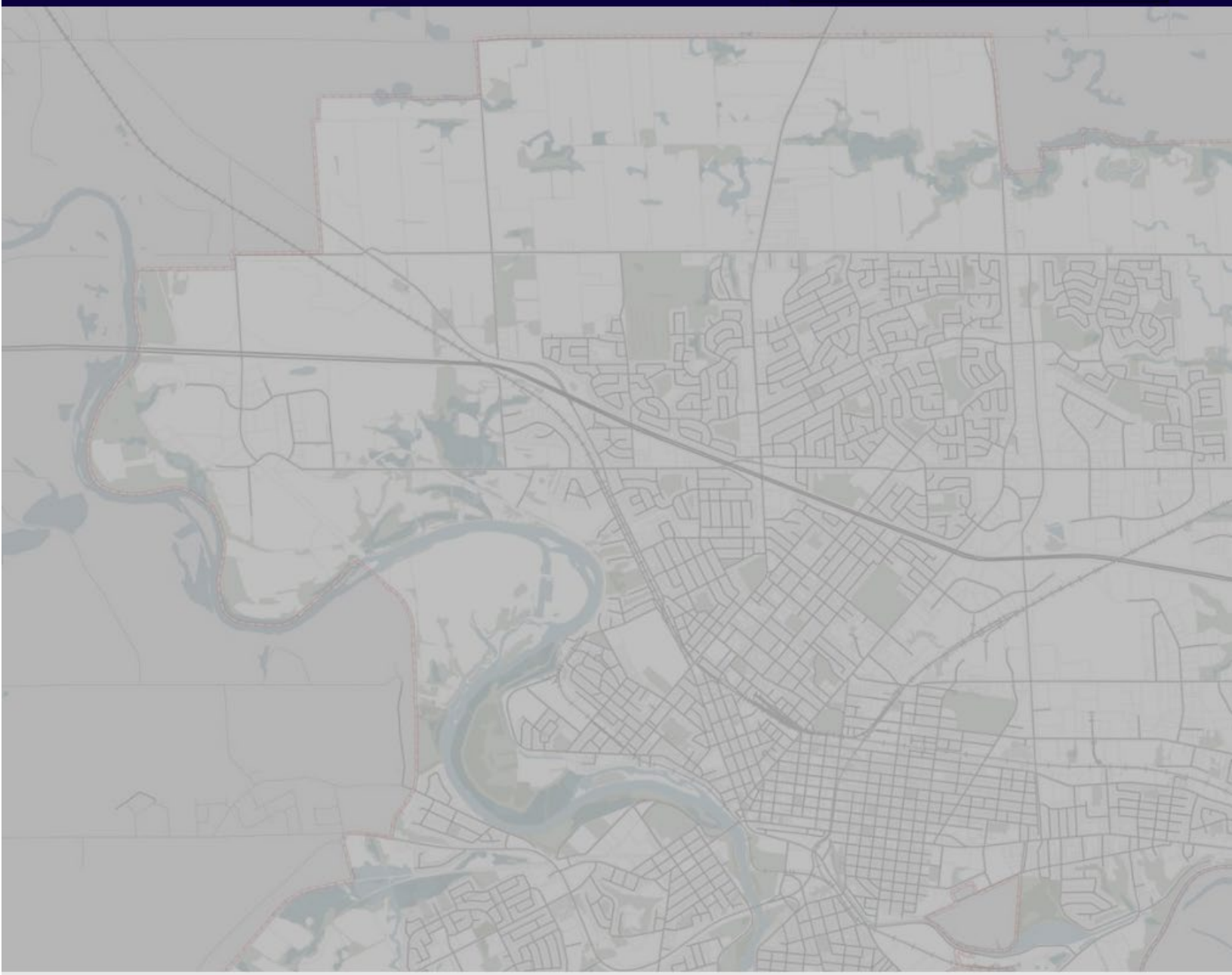
City of Brantford

Northwest Municipal Services Expansion Environmental Assessments

Oak Park Road Trunk Sewer: Schedule B Project File Report

Updated October 17, 2025



GEI Consultants Canada

CIMA+

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EM/HS:tw

Certification

The Northwest Municipal Services Expansion Environmental Assessments have been a cooperative project completed by GEI Consultants Canada Ltd. (previously GM BluePlan) and CIMA+ on behalf of the City of Brantford. Throughout the process, key contributions have been made from technical experts from our internal teams as well as external teams including Montrose Environmental Solutions Canada Inc., Thurber Engineering Ltd., Arcadis Canada Inc. (previously Urban X), Rowan Williams Davies & Irwin Inc. (RWDI), Archeological Services Inc. (ASI).

Record of Revisions

Identification	Date	Description of Issued and/or Revision
Version 1	July 4, 2025	First filing of the Project File Report
Version 2	October 17, 2025	Second version of the Project File Report. Revisions address comments from Six Nations of the Grand River and MECP including clarifying technical study results related to species at risk, source water protection, climate change, archaeology, and cultural heritage. The final recommendations have not changed.

Summary of Revisions – October 17, 2025

This Project File Report (PFR) has been revised, based on comments from Six Nations of the Grand River and Ministry of Environment, Conservation and Parks. The changes integrated into the report did not change the final recommendation for the preferred alternative. The key revisions to this second version of the PFR are as follows:

1. Sections 1.2 and 1.4 – moved from other sections
2. Section 3 – updated policy text to reflect any legislative changes:
    - Section 3.1.5 – Fisheries Act
    - Section 3.2.1 – Planning Act – consolidated and updated sections:
    - Section 3.2.1.1 – Provincial Planning Statement
    - Section 3.2.1.2 – A Place to Grow: Growth Plan for the Greater Golden Horseshoe
    - Section 3.2.1.3 – Build More Homes Faster Act (Bill 23)
    - Section 3.2.3 – Endangered Species Act
    - Section 3.2.10 – Conservation Authorities Act (re-named from 'Conservation Authority and Regulation')

    And, added new sections:
    - Section 3.1.4 – Canadian Navigable Waters Act
    - Section 3.2.4 – Fish and Wildlife Conservation Act
    - Section 3.2.11 – Environmental Assessment Act
    - Section 3.2.12 – Environmental Protection Act
    - Section 3.3.4 – By-laws
3. Sections 4.3 and 5.3 – Updated with 2025 field investigation information results
4. Added Section 5.7 – Source Water Protection
5. Added Section 5.8 – Climate Change Impact
6. Sections 8 and 9 – Added details to the evaluation of short-list alternatives; incorporated the "Do Nothing" alternative in the short-list evaluation
7. Sections 9.2-9.5 – Revised evaluation of all alternatives based on the additional information from Sections 4.3, 5.3, 5.7, and 5.8
8. Added Section 9.8 – Cumulative Effects
9. Section 10.1 – Updated mitigation measures
10. Section 10.2.4 – Updated permit requirements
11. Section 11.1 – Added reference to Section 16 Order Request
12. Miscellaneous formatting/editorial changes throughout

Acronyms and Abbreviations

AA	Archaeological Assessment
CCME	Canadian Council of Ministers of the Environment
CEPA	Canadian Environmental Protection Act
City	City of Brantford
CN Rail	Canadian National Railway
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk Ontario
DEM	Digital Elevation Model
EA	Environmental Assessment
EA Act	Ontario Environmental Assessment Act
ESR	Environmental Study Report
GGH	Greater Golden Horseshoe
GIS	Geographic Information System
GRCA	Grand River Conservation Authority
HVA	Highly Vulnerable Aquifer
IAA	Impact Assessment Act
IPZ	Intake Protection Zone
MBCA	Migratory Birds Convention Act
MCEA	Municipal Class Environmental Assessment
MCM	Ministry of Citizenship and Multiculturalism
MCR	Municipal Comprehensive Review
MEA	Municipal Engineers Association
MNRF	Ministry of Natural Resources and Forestry
MSP	Master Servicing Plan
MTO	Ontario Ministry of Transportation
OHA	Ontario Heritage Act
Project Team	GEI Consultants, CIMA+ and City of Brantford
ROW	Right-of-Way
SAB	Settlement Area Boundary
SAR	Species at Risk
SARA	Species at Risk Act
SGRA	Significant Groundwater Recharge Area
SPR	Source Protection Regions
SWP	Source Water Protection
TMP	Transportation Master Plan
VSA	Vulnerable Scoring Area
WHPA	Wellhead Protection Area

Executive Summary

Project Context

The long-term growth strategy of the City of Brantford (the City), as outlined in the City's Municipal Comprehensive Review (MCR), targets the majority of the City's greenfield growth to occur along the City's northern and eastern boundaries within the lands the City acquired as part of the 2017 land annexation, also known as the Boundary Expansion Lands. In support of the City's MCR, the City undertook a Master Servicing Plan (MSP), and a Transportation Master Plan (TMP) to identify the critical municipal infrastructure required to service the City's 2051 growth needs including the servicing of the Boundary Expansion Lands.

To support the future servicing of the Boundary Expansion Lands, the City's MSP and TMP identified several major trunk infrastructure projects. Both the MSP and TMP identified the need to extend existing key water, wastewater, and transportation infrastructure from south of Highway 403 northwards, through the lands along Oak Park Road and south of Powerline Road (i.e., the Study Area, or North Expansion Lands) to the Northwest Employment Lands and broader Boundary Expansion Lands. Additionally, the MSP identified the need for adequate stormwater management for the Study Area.

The Northwest Municipal Services Expansion Environmental Assessments are being completed to satisfy the Municipal Class Environmental Assessment (MCEA) required for the seven (7) major infrastructure projects, identified through the City's MSP and TMP. The Study Area is shown in **Figure 1-1**, while **Table 0-1** describes the seven infrastructure projects.

Table 0-1. Project Descriptions

Project Name	Class EA Schedule	Description
Oak Park Road Trunk Sewer (MSP Project WW-SS-001)	B	Focus on determining the preferred Highway 403 crossing location to provide wastewater servicing to northwest Brantford. This project parallels the Oak Park Road Trunk Watermain.
Powerline Road Trunk Sewer (MSP Project WW-SS-001)	B	Continuing from the Oak Park Road Trunk Sewer, this project determines the optimal alignment to provide wastewater servicing to the Paris Road and Powerline Road intersection. This project parallels the Powerline Road Trunk Watermain and is coordinated with the Powerline Road Widening project.
Oak Park Road Trunk Watermain (MSP Project W-M-002)	B	Focus on determining the preferred Highway 403 crossing location to provide water servicing to northwest Brantford. This project parallels the Oak Park Road Trunk Sewer.
Powerline Road Trunk Watermain (MSP Project W-M-003)	B	Continuing from the Oak Park Road Trunk Watermain, this project determines the optimal alignment to provide water servicing to the Paris Road and Powerline Road intersection. This project parallels the Powerline Road Trunk Sewer and is coordinated with the Powerline Road Widening project.

Project Name	Class EA Schedule	Description
Stormwater Management in Grand River Northwest Catchment (MSP Project SW-LI-010)	B	With consideration for the future land use, this project seeks to determine the optimal stormwater management strategy within the study area.
Oak Park Road Widening (TMP Project Number 2)	C	Considers widening of Oak Park Road from Hardy Road to Powerline Road with the inclusion of active transportation and upgrade of the Highway 403 / Oak Park Road interchange.
Powerline Road Widening (TMP Project Number 7A)	C	Considers widening and potential realignment of Powerline Road from Oak Park Road to Paris Road with the inclusion of active transportation.

Due to the inter-related nature of these projects and the potential for the individual project elements to influence the alignment, phasing, and/or recommendation of one or more other infrastructure projects, the seven projects are being cohesively considered in a way that allows the identification of an overall optimal servicing strategy.

The Oak Park Road Trunk Watermain and Oak Park Road Trunk Sewer, both Schedule B MCEAS, were completed ahead of the remaining 5 projects to encourage development efficiencies.

Project Communication & Stakeholder Engagement

As part of this Oak Park Road Trunk Sewer Project File Report, a notice of project commencement was issued in April 2023, and a notice of public information center (PIC) #1 was issued in January 2024; the PIC for this project file was held on January 18th, 2024, with the Notice of Completion issued in on July 4th, and revised on July 25th, 2024. After the Oak Park Road Trunk Watermain project filing, two additional PICs were held on October 2024 (focusing on the Powerline Schedule B servicing projects and the Schedule C road projects for Powerline Road and Oak Park Road) and October 2025 (focusing on Stormwater Management alternatives).

Major stakeholders that were engaged throughout the project include the Ministry of Transportation, the County of Brant, Grand River Conservation Authority, Hydro One, GrandBridge Energy, CN Rail, and local developers and property owners. Key feedback from these groups was incorporated into our evaluation of alternatives.

Throughout the project, the Six Nations of the Grand River and the Mississaugas of the Credit First Nation were consulted. They have had the opportunity to be present during field investigations, review and comment on reports, and we have held several in-person workshops.

Evaluation Process

In accordance with the Class EA process, a long list of alternative solutions to address the needs of the Oak Park Road Trunk Watermain and Oak Park Road Trunk Sewer were identified. These were then screened based on their feasibility, minimization of impacts or disruptions, and their ability to meet servicing needs. Projects that did not meet these basic criteria were not carried forward to the short-list of alternatives. The short-list of alternatives was then evaluated based on technical feasibility, natural

environment considerations, social and cultural considerations, and financial viability. Each alternative was scored out of 25 per category, for a total of 100. The long list included eight (8) alternative solutions, which were categorized by Highway 403 crossing location, described below.

- **Alternative 1 – SC Johnson Trail**: Connects to the existing trunk on Fen Ridge Court and crosses Highway 403 near the pedestrian bridge crossing, utilizes the SC Johnson Trail to the north.
- **Alternative 2 – Existing Easement**: Connects to the City's easement on Fen Ridge Court and crosses Highway 403 immediately west of the Oak Park Road interchange.
- **Alternative 3 – Oak Park Road**: Connects to the trunk sewer on Oak Park Road and utilizes the Oak Park ROW, crossing Highway 403 through the Oak Park Road interchange.
- **Alternative 4 – Tall Grass Court**: Connects to the trunk sewer on Oak Park Road and crosses Highway 403 from Tall Grass Court.
- **Alternative 5 – East of Pond**: Connects to the trunk sewer on Oak Park Road and crosses Highway 403 east of the existing pond from Savannah Oaks Drive.
- **Alternative 6 – East of Ferrero**: Connects to the trunk sewer on Oak Park Road and crosses Highway 403 from the east of the Ferrero Canada business.
- **Alternative 7** – **New Wastewater Treatment Plan (WWTP)**: New WWTP north of Highway 403 to service north Brantford.
- **Alternative 8 – Do Nothing**: Maintain existing conditions, with no changes or improvements to current operations.

Four (4) servicing options were carried forward: Alternatives 1, 2, 5, and 8. The short list of alternatives was then evaluated to reveal Alternative 2 as the preferred solution.

Preferred Solution

Alternative 2 – Existing Easement was identified as the preferred solution based on having the highest overall evaluation score (78 points out of 100)., It also received the highest score in the technical feasibility category (20.5 points) and the environmental category (22.5 points). The preferred solution is located predominantly within previously disturbed areas and does not require the removal of any naturalized areas. A small portion of anthropogenic meadow habitat, at approximately 0.804 ha, will require removal. No aquatic or surface water features are within close proximity to the preferred solution, and it is not located within an area of archaeological potential or near any cultural or built heritage features. Minor and temporary traffic disruptions along Oak Park Road are anticipated during construction. The preferred solution is located largely within existing easements and road ROWs. However, there is a portion of the alignment which requires a new easement to be acquired from the existing landowner. The landowner has been engaged throughout the MCEA process and is in support of the easement. Consultation with the Ministry of Transportation is ongoing and is anticipated to continue through to project completion. Further consultation with them will be required during the detailed design phase of the project to ensure that the proposed design is supported and mitigates any impacts to Highway 403.

October 2025 Project File Update

Under the project file review period, a Section 16 Order Request was received from Six Nations of the Grand River (SNGR). In addition, additional field studies were being completed through 2025 to support

the related Class EA studies which also provided additional information for this Oak Park Watermain study. As such, key updates have been made to address comments from SNGR and MECP. These updates have strengthened the project documentation but have not changed the original recommendations. This updated October 2025 project file report constitutes the final project file report and is not expected to be recirculated for a second public review process. Instead, this revised copy will be submitted to MECP and SNGR for their review along with the required MECP tracking documents which are required to support MECP's review of the Section 16 Order request submitted by Six Nations of the Grand River (SNGR) on October 24, 2024.

1. Introduction

1.1. Study Background

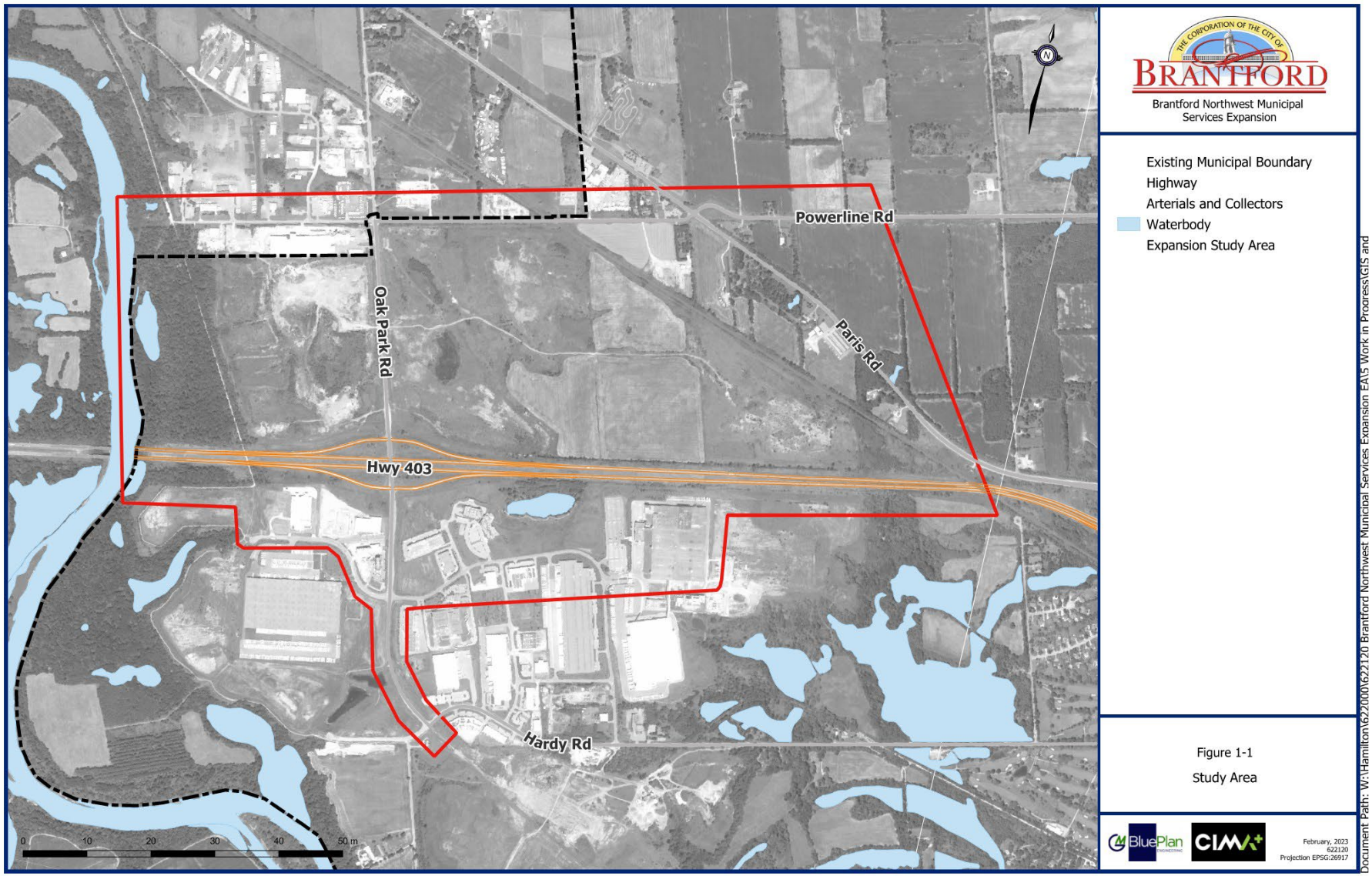
The City of Brantford (the City) has retained GEI Consultants Canada Ltd. (GEI; formerly GM Blue Plan) and CIMA+ to conduct the Northwest Municipal Services Expansion Municipal Class Environmental Assessments, a series of 7 projects within the City.

The long-term growth strategy of the e City, as outlined in their Municipal Comprehensive Review (MCR), targets the majority of greenfield growth to occur along the northern and western boundaries, within those lands acquired as part of the 2017 land annexation. These lands are also known as the Boundary Expansion Lands. In support of the MCR, the City undertook a Master Servicing Plan (MSP), and a Transportation Master Plan (TMP) to identify the critical municipal infrastructure required to service the Boundary Expansion Lands.

To support the future servicing of the Boundary Expansion Lands, the City's MSP and TMP identified several major trunk infrastructure projects. Both the MSP and TMP identified the need to extend existing water, wastewater, and transportation infrastructure from south of Highway 403 northwards, through the lands along Oak Park Road and south of Powerline Road (i.e., the Study Area, or North Expansion Lands) to the Northwest Employment Lands and broader Boundary Expansion Lands. Additionally, the MSP identified the need for adequate stormwater management for the Study Area.

The Northwest Municipal Services Expansion Environmental Assessment (EA) Studies are being completed to satisfy the Municipal Class Environmental Assessment (MCEA) required for the seven (7) major infrastructure projects, identified through the City's MSP and TMP, which all transect the study area. **Table 1-1** describes the seven projects.

Figure 1-1. Study Area Map



1.2. Study Area Overview

The Study Area for all projects within the Northwest Municipal Services Expansion Environmental Assessments is shown in **Figure 1-1**. It is generally bounded by Powerline Road to the north, Highway 403 to the south, the Canadian National Railway (CN Rail) to the east, and the Grand River to the west.

The Northwest Municipal Service Expansion EA study area (**Figure 1-1**) generally includes the area from south of Highway 403 to Powerline Road in the north, and from the Grand River in the west to Paris Road in the east. The overarching Study Area provided area for the exploration of alternative servicing options.

The majority of the study area consists of the future employment lands bound by Powerline Road to the north, Highway 403 to the south, the CN railway to the east, and SC Johnson Trail to the west. The future employment lands are a previously extracted aggregate pit, which has been partially naturalized with vegetation. The existing employment lands have historic draft plan approvals, and at the time of this study, the existing property owner is undertaking extensive site earthworks to re-grade the site in preparation of development. However, the grading plan, lotting, servicing and transportation plans have not been finalized.

North of the study area is the Paris settlement area in the County of Brant, with the lands fronting Powerline Road west of the railway being already developed employment lands. Transportation and stormwater needs will be considered for the interaction between the Paris settlement area and Study area.

1.2.1. Highway 403

Highway 403 traverses the study area, with the Oak Park Road interchange at the center. The water and wastewater infrastructure will require crossing of Highway 403 to provide servicing to northwest Brantford, which represents the primary technical objective of this project. The Project Team consulted with Ministry of Transportation throughout the project to ensure technical requirements were addressed.

1.2.2. Hydro Infrastructure

Powerline Road, at the northern limit of the study area, serves as a major energy transmission corridor. There are extensive Hydro One and GrandBridge Energy Hydro utilities along Powerline Road near the existing roadway including 115kV hydro towers along the north side of the road, east of Oak Park Road and transitioning to the south side just west of the CN Rail. The towers are connected to the transformer station and substation to the east and west of the CN railway. There are also GrandBridge Energy hydro poles and hydro lines along Oak Park Road.

1.2.3. CN Rail

The CN Rail corridor is along the west side of the study area and intersects Powerline Road in the north. As part of the overarching study, the water and wastewater infrastructure will require crossing of the CN Rail corridor. At this time the transportation projects will complete the evaluation based on an at-grade crossing; however, all Class EA project technical evaluations make considerations for a future grade separated crossing.

1.2.4. Municipal Infrastructure

The study area north of Highway 403 does not include existing water, wastewater, stormwater infrastructure.

The City has existing water and wastewater trunk infrastructure south of Highway 403 with sufficient capacity to accommodate the development of the North Expansion lands and the additional Boundary Expansion Lands. North of Powerline Road, the Brant County's Paris water system extends to Powerline Road and west along Powerline Road to Sharpe Road. Brant County's existing Paris wastewater system does not extend to Powerline Road with local properties being serviced via private septic systems.

The City has existing stormwater infrastructure south of Highway 403, which was not designed with consideration of lands north of Highway 403. The current site does not have an existing outlet, with stormwater generally collecting in local depressions before infiltrating into the soil or evaporating. The site area does receive runoff from the Paris Settlement Area with a culvert crossing Powerline Road east of Oak Park Road.

1.3. Study Purpose

The Northwest Municipal Services Expansion Environmental Assessments are being completed to satisfy the Municipal Class Environmental Assessment (MCEA) required for the seven (7) major infrastructure projects, identified through the City's MSP and TMP, which are located within the study area. **Table 1-1** below describes each of the seven projects that comprise the Northwest Municipal Services Expansion Environmental Assessment.

Due to the inter-related nature of these projects and the potential for the individual project elements to influence the alignment, phasing, and/or recommendation of one or more other infrastructure projects, the seven projects are being cohesively considered in a way that allows the identification of an overall optimal servicing strategy.

Table 1-1. Project Descriptions

Project Name	Description
Oak Park Road Trunk Sewer (MSP Project WW-SS-001)*	Focus on determining the preferred Highway 403 crossing location to provide wastewater servicing to northwest Brantford. This project parallels the Oak Park Road Trunk Watermain.
Powerline Road Trunk Sewer (MSP Project WW-SS-001)*	Continuing from the Oak Park Road Trunk Sewer, this project determines the optimal alignment to provide wastewater servicing to the Paris Road and Powerline Road intersection. This project parallels the Powerline Road Trunk Watermain and is coordinated with the Powerline Road Widening project.
Oak Park Road Trunk Watermain (MSP Project W-M-002)	Focus on determining the preferred Highway 403 crossing location to provide water servicing to northwest Brantford. This project parallels the Oak Park Road Trunk Sewer.
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Project Name	Description
Stormwater Management in Grand River Northwest Catchment (MSP Project SW-LI-010)	With consideration for the future land use, this project seeks to determine the optimal stormwater management strategy within the study area.
Oak Park Road Widening (TMP Project Number 2)	Considers widening of Oak Park Road from Hardy Road to Powerline Road with the inclusion of active transportation and upgrade of the Highway 403 / Oak Park Road interchange.
Powerline Road Widening (TMP Project Number 7A)	Considers widening and potential realignment of Powerline Road from Oak Park Road to Paris Road with the inclusion of active transportation.

*MSP Project WW-SS-001 (Powerline Trunk Sewer) identified a trunk sewer along Oak Park Road and Powerline Road. The Powerline Road Trunk Sewer EA project was added to allow for development efficiencies north of Highway 403.

The study area for these projects is generally bounded by Powerline Road to the north, Highway 403 to the south, the Canadian National Railway (CN Rail) to the east, and the Grand River to the west. **Figure 1-1** provides a visualization of the core study area.

1.4. Problem and Opportunity Statement

The problem and opportunity statement defines the starting point in the undertaking of the MCEA and assists in defining the scope of the project. The Northwest Municipal Services Expansion Environmental Assessments encompass seven infrastructure projects, which are being completed concurrently. As such, the Project Team developed a single overarching problem and opportunity statement which represents the overarching study, as well as an individual statement representing the Oak Park Road Trunk Sewer project.

The Northwest Municipal Services Expansion Municipal Class Environmental Assessments will develop an optimized long-term municipal infrastructure strategy. This strategy will support existing users, future residential growth, and employment growth opportunities in Brantford's Boundary Expansion Lands and will minimize potential impacts to the environment, existing utilities, and future land uses. There are opportunities to consider water, wastewater and transportation infrastructure improvements in an integrated manner through these seven MCEAs.

The Oak Park Road Trunk Sewer study will identify and develop the preferred trunk sewer alignment that will provide the core wastewater servicing link connecting the existing wastewater system south of Highway 403 to the northwest lands, with consideration for potential future trunk sewer infrastructure and wastewater system improvements, service area expansions, and the potential impacts of climate change on future wastewater needs.

2. Study Framework

2.1. Environmental Assessment Process

Municipally led infrastructure projects are subject to the *Environmental Assessment Act* (EAA, 1990). The Class Environmental Assessment is an approved self-assessment process under the EAA for a specific group or "class" of projects. Projects are considered approved, subject to compliance with an approved Class EA process. The MCEA process applies to municipal infrastructure projects including roads, water, and wastewater. The Municipal Engineers Association (MEA) has prepared the MCEA guideline, which outlines this process (2023).

The MCEA process follows a prescriptive and phased approach that integrates consultation and engagement with Rights Holders, stakeholders, and the public. The process and underlying regulation and legislation are described in the following sections.

The following subsections provide an overview of each part of the MCEA process.

2.1.1. Environmental Assessment Act

The EAA governs the protection, conservation, and management of the environment in Ontario and applies to public and private undertakings.

a) Where the environment is defined as: air, land, or water,
b) plant and animal life, including human life,
c) the social, economic, and cultural conditions that influence the life of humans or a community,
d) any building, structure, machine, or other device or thing made by humans,
e) any solid, liquid, gas, odour, heat, sound, vibration, or radiation resulting directly or indirectly from human activities, or
f) any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario

The EAA sets the framework for the Environmental Assessment (EA) processes, including the MCEA and the Comprehensive EA processes, among others. Part II.1 (Section 15) of the EAA outlines each of the approved MCEA processes, including the MCEA. Part II.3 (Section 17) of the EAA outlines the comprehensive EA process and when projects are required to use it instead of a MCEA.

2.1.2. 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, government review agencies, Indigenous Communities and other stakeholders 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.
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 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.

2.2. Municipal Class Environmental Assessment Process

Where a project has predictable and mitigatable impacts, they may proceed through a "Class" EA. The Class EA approach streamlines the planning and approvals process for municipal projects that are: recurring, similar in nature, usually limited in scale, predictable in the range of environmental impacts, and responsive to mitigation.

The MCEA is one of these such processes. It focuses on municipal road, water, wastewater, and transit projects.

Per the MEA guidelines, the MCEA 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.

2.2.1. Project Pathways

Public and agency consultation are integral to the MCEA planning process. Projects subject to the Class EA process are classified into following four "schedules" depending on the degree of the anticipated impacts. **Figures 2-1** and **2-2** illustrate the MCEA planning and design process with the phases required for the respective schedule.

Exempt Projects: These projects, most of which were formerly classified as Schedule A and A+ projects, include various municipal maintenance, operational activities, rehabilitation works, minor reconstruction or replacement of existing facilities, and new facilities that are limited in scale and have minimal adverse effects on the environment. These projects are exempt from the requirements of the EAA.

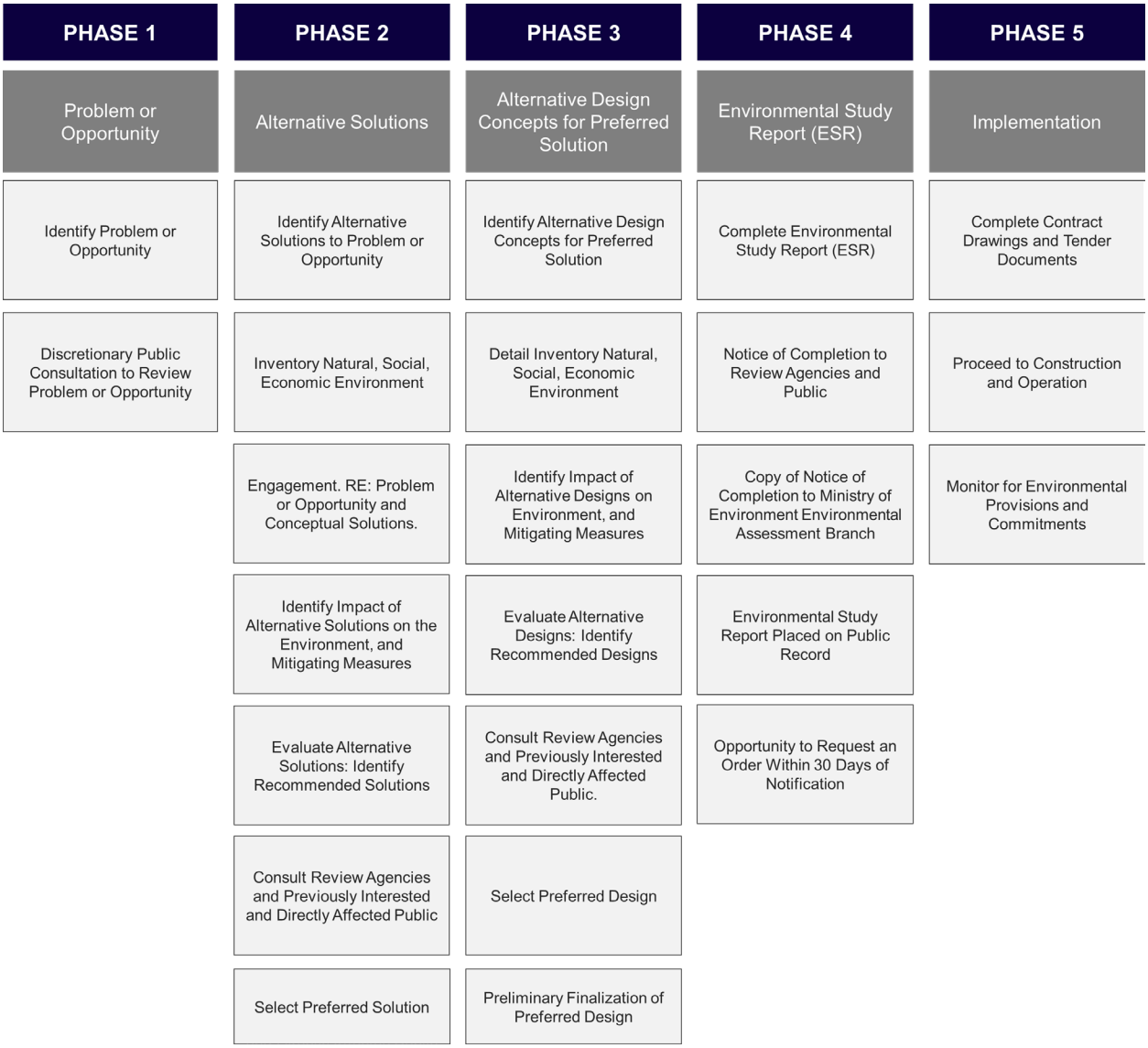
Eligible for Screening to Exempt: Some projects may be eligible for exemption based on the results of a screening process. Proponents may choose to complete the applicable screening process to determine whether the project is eligible for exemption from the Act or proceed with the applicable Schedule B or C process. Projects that are eligible for screening are identified in the MCEA document. Proponents must fully and accurately complete the relevant screening process(es) outlined in the MCEA to proceed pursuant to the exemption.

Schedule B: These projects have the potential for some adverse environmental effects. The proponent is required to undertake the first two phases of the assessment process, involving mandatory contact with directly affected Rights Holders, public, First Nations, and relevant review agencies, to ensure that they are aware of the project and that their concerns are identified and considered. A Project File Report must be prepared and made available for review by any interested person or party. If there are no outstanding concerns, then the proponent may proceed to implementation once the regulatory process has been completed. Schedule B projects generally include improvements and minor expansions to existing facilities or smaller new projects.

Figure 2-1. Schedule B Class EA Process

Schedule C: These projects have the potential for more significant environmental effects than a Schedule B project and as such a proponent is required to complete the full planning and documentation process set out in the MCEA. For Schedule C projects, proponents are required to prepare an ESR for review by the public and review agencies. If there are no outstanding concerns, the proponent may proceed to implementation once the regulatory process has been completed. Schedule C projects generally include the construction of new facilities and major expansions to existing facilities.

Figure 2-2. Class Environmental Assessment Process



2.2.2. Consultation and Engagement

Consultation and participation in the MCEA process by interested and affected parties are an important component to the success of this study and is mandated as part of the MCEA process. It is imperative that the projects include meaningful consultation and extensive two-way communication with all stakeholders to provide information, listen to, and work to address issues and concerns. Effective consultation with the public and stakeholders will be used to obtain valuable comments and feedback on the overall study process, and better understand potential sensitivities and issues related to the project. The overarching strategy for consultation includes several goals and objectives that go beyond simply meeting legislative requirements:

- Presenting clear and concise information at key stages of the study process;
- Soliciting community, regulatory, and other stakeholder input;

- Identifying concerns that might arise from the undertaking;
- Undertaking a comprehensive consultation and engagement program with Indigenous Communities;
- Considering all comments received when developing the preferred solution; and
- Meeting and exceeding MCEA Consultation requirements.

2.2.3. Project Pathway

The Oak Park Road Trunk Sewer study will establish a new wastewater distribution system, where a portion of the facilities are outside of the existing road allowance or utilities corridor. This project is therefore being completed as a Schedule B project, in accordance with 4c. of Table B in the MCEA guide (MEA, 2023).

This Project File Report is intended to satisfy Phases 1 and 2 of the MCEA process, which is the requirement for Schedule B MCEA projects. This report will be prepared and placed on public record for a 30-day review process.

2.2.4. Section 16 Order Requests

In accordance with the EAA, projects that typically proceed through the Class EA process can be appealed under Section 16 of the Act, which requires them to proceed with a comprehensive EA. The Minister of the Environment, Conservation and Parks has the authority and discretion to make an Order. A Section 16 Order may require that the proponent of a project going through a Class EA process:

- Submit an application for approval of the project before they proceed. This is generally referred to as an Individual EA (s. 16(1) order); and
- Meet further conditions in addition to the conditions in the Class EA. This could include conditions for: further study, monitoring and/or consultation (s. 16(3) order).

The minister can also refer a matter in relation to a Section 16(6) Order request to mediation.

Before making an Order, the minister must consider the factors set out in Section 16(5) of the EAA.

If a Section 16 Order request is made, the project proponent cannot proceed with the project until the minister makes a decision on the request. If the minister makes a Section 16 Order, the proponent may only proceed with the project if they follow the conditions in the Order.

Reasons for Requesting an Order

A concerned party may ask the minister to make a Section 16(6) Order if:

- They have outstanding concerns that a project going through a Class EA process may have a potential adverse impact on constitutionally protected Aboriginal and treaty rights; and
- They believe that an Order may prevent, mitigate, or remedy this impact.

A Section 16(6) Order request cannot be made to simply delay or stop the planning and implementation of a project that is going through the MCEA process. Prior to making a Section 16(6) Order request, the concerned party should first try to resolve any concerns directly with the project proponent, in this case, the City of Brantford.

Timing for an Order Request

During the 30-day public comment period, anyone can review the documentation, submit any comments or concerns to the proponent, and request a Section 16(6) Order

To request a Section 16 Order for a project, on the grounds that an Order may prevent, mitigate, or remedy potential adverse impacts on constitutionally protected, Aboriginal and treaty rights, a concerned party must make the request before the public comment period is complete.

3. Policy Overview

This section provides a summary of the legislation, policies, and guidelines at the Federal, Provincial, and municipal levels, which are relevant to the Oak Park Road Trunk Sewer Schedule B MCEA.

3.1. Federal

3.1.1. Canadian Environmental Protection Act

The *Canadian Environmental Protection Act* (CEPA) was enacted in September of 1999 and provides the Canadian government the power to protect the environment and human health while contributing to sustainable development. CEPA does not relate directly to the Class EA projects associated with this study; however, it helps to advise and direct provincial policies.

3.1.2. Canadian Council of Ministers of the Environment Guidelines

In 2009, the Canadian Council of Ministers of the Environment (CCME) provided a framework for future actions and activities related to water through the development of a vision and action plan, such that Canadians have access to clean, safe, and sufficient water to meet their needs in ways that also maintain the integrity of ecosystems. The goals and rationale developed as part of the vision include the following:

Goal 1: Aquatic ecosystems are protected on a sustainable watershed basis:

- Rationale: Enhance understanding and application of Integrated Water Resource Management to improve ecosystem health.

Goal 2: The conservation and wise use of water is promoted:

- Rationale: Improve understanding of the full value of water to achieve behavioral change.

Goal 3: Water quality and water quantity management is improved, benefitting human and ecosystem health:

- Rationale: Promote nationally consistent approaches to water quality and quantity monitoring, guidelines, and multi-jurisdictional public reporting. Encourage research and networks to enhance knowledge and understanding of ground and surface waters.

Goal 4: Climate change impacts are reduced through adaptive strategies:

- Rationale: Enhance water quality and quantity monitoring networks to support water and adaptation needs.

Goal 5: Knowledge about Canada's water is developed and shared:

- Rationale: Help to spearhead value added information on water quality and quantity by supporting jurisdictional reporting efforts to Canadians in a systematic and consistent fashion.

3.1.3. *Impact Assessment Act*

The *Impact Assessment Act* (IAA; 2019) and associated regulations came into effect on August 28, 2019; it was most recently updated June 2,2025. Under the IAA, a federal environmental assessment is required for "designated projects". A designated project is one that includes one or more physical activities that are set out in the regulations under IAA or by order of the federal Minister of the Environment and Climate Change.

Sections 81 to 91 of the IAA also includes provisions for projects on federal lands and outside Canada that are not considered "designated projects" under the Physical Activities Regulations or designated by the Regulations Respecting Excluded Physical Activities (Newfoundland and Labrador Offshore Exploratory Wells).

The scope of the Oak Park Road Trunk Sewer MCEA study was reviewed by the project team against the federal Regulations Designating Physical Activities (2012). The project team determined that the potential range of physical activities contemplated by the study are not "designated" and none of the project activities will be completed wholly or partly on federal lands. Hence, the project will not require consideration of a federal environmental assessment.

3.1.4. Canadian Navigable Waters Act

The SNWA (2019; previously the *Navigation Protection Act* (1985)) protects the public's right to navigate on navigable waters across Canada. The Act requires approval from Transport Canada for works in, on, over, under, through, or across navigable waters if the works could substantially interfere with navigation. The Grand River is considered navigable between the Wilkes Dam in Brantford to its confluence with Lake Erie, per the Schedule to the Act.

3.1.5. *Fisheries Act*

DFO administers the *Fisheries Act* (1985) which prohibits the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat. Where a project has the potential to impact fish or fish habitat, a Request for Review must be submitted to the DFO. This process allows the DFO to review the project to determine whether there is potential to impact an aquatic SAR, cause the death of fish, or result in harmful alteration, disruption, or destruction of fish habitat (HADD). It should be noted that any proposed development activities that may disturb the instream or riparian area should be assessed comprehensively to identify potential impacts to fish communities in impacted watercourses and identify ways to ensure the intent of the *Fisheries Act* is upheld. There are watercourses within or adjacent to the study area with fish and fish habitat, particularly the Grand River, and as such the *Fisheries Act* applies.

3.1.6. *Migratory Bird Convention Act*

The *Migratory Birds Convention Act* (MBCA) was established in 1917 and amended in 1994 and 2005, to protect migratory birds, their eggs, and their nests. The MBCA was created to implement the Migratory Birds Convention between Canada and the United States. The Act lists protected families and subfamilies of migratory birds and lays out legislation surrounding activities that may impact migratory birds or nests, including when and where activities may occur. The study area contains areas of deciduous and mixed forested land that may support migratory or nesting birds. Measures to avoid or mitigate impacts to migratory birds will be included as part of the preferred solution.

There are woodlots within the site area with potential to support migratory and nesting birds.

3.1.7. Species at Risk Act

The *Species at Risk Act* (SARA) focuses on restoring and maintaining populations of species that are at risk of extinction or extirpation due to human activity such as habitat destruction, hunting, introduction of competing species, or other anthropogenic causes. Species are designated at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) by using biological information on a species deemed to be in danger. The COSEWIC reviews research information on population and habitat status, trends and threats, and applies assessment criteria based on international standards. Once a species is added to Schedule 1 – List of Wildlife Species at Risk, it benefits from legal protection afforded and the mandatory recovery planning required under the Act. Through this study potential species at risk will be identified and measures to avoid or mitigate impacts will be developed.

While SARA applies to species on federal land, it also applies to species at risk migratory birds under the MBCA and fish anywhere they occur. Therefore, SARA applies to any fish species that are deemed a federal species at risk in the Study Area.

3.2. Provincial

3.2.1. Planning Act

The *Planning Act* establishes the rules for land use planning in Ontario. It describes how land uses may be controlled in communities. Changes to the planning system were introduced in 2006 by the Planning and Conservation Land Statute Law Amendment Act. Key changes are as follows:

- Municipalities must now update their Official Plan every ten years or every five years after an update done through an amendment to the plan, followed by an update of the accompanying zoning by-law within three years after the new official plan is in effect;
- There are more opportunities for public input before local decisions are made;
- Municipalities have enhanced ability to plan for a range and mix of housing types and densities; and
- Municipalities have additional ability to have the final say on whether designated employment lands can be changed to other uses.

3.2.1.1. Provincial Planning Statement (2024)

The Provincial Planning Statement (2024) is issued under the *Planning Act* and sets the policy foundation for land use planning and development in Ontario. It replaces the Provincial Policy Statement (2020) and the Growth Plan for the Greater Golden Horseshoe (2019), and provides guidance and support for appropriate land use planning and development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment.

The Provincial Planning Statement applies to land use planning decisions made under the *Planning Act* by provincial ministers, municipal councils, local boards, and planning boards, among other approval authorities. All municipal decisions affecting planning matters shall be consistent with the policies outlined in the Provincial Planning Statement.

The Provincial Policy Statement contains policies relevant to water, wastewater, and stormwater infrastructure planning including, but not limited to:

- Requirement that infrastructure be provided in a coordinated, efficient, and cost-effective manner with considerations to for health and safety and the natural environment;
- Planning for infrastructure should be financially viable over their lifecycle and available to meet current and projected needs; and
- Optimization of the use of existing infrastructure and public service facilities before developing new infrastructure.

More specifically, the Provincial Planning Statement recommends that water, wastewater, and stormwater services should:

- Direct and accommodate expected growth in a manner that promotes the efficient use and optimization of existing municipal water and wastewater services;
- Ensure that these systems are provided in a manner that:
    - Can be sustained by the water resources upon which such services rely;
    - Is feasible and viable over their lifecycle;
    - Protects human health and safety, and the natural environment; and
    - Aligns with comprehensive municipal planning for these services.
- Promote water conservation and water-use efficiency;
- Integrate servicing and land use considerations at all stages of the planning process; and
- Consider opportunities to allocate and reallocate the unused system capacity to support efficient use of these services to meet current and projected needs for increased housing supply.

3.2.1.2. A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)

Ontario's A Place to Grow: Growth Plan for the Greater Golden Horseshoe (GGH) (2020) provides a framework for implementing the Province's vision for managing growth and provides context on where and how to grow. The Growth Plan for the GGH was repealed under O. Reg. 328/24 and integrated into the Provincial Planning Statement (2024). [

While this Plan has since been repealed, several of the core principles have been integrated into the PPS (2024), such as the concept of strategic growth areas. In addition, at the time of the identification of Northwest Brantford for future growth and expansion, the Growth Plan provided key directions as per Schedule 3 of the Plan.

Schedule 3 – Distribution of Population and Employment for the GGH to 2051

The Growth Plan provides population and employment forecasts for all upper- and single-tier municipalities in the GGH. The Provincial growth forecasts are a foundational component of the Growth Plan and must be reviewed in consultation with municipalities at least every five years. The City of Brantford is forecasted to have a population of 165,000 and a corresponding local employment base of 80,000 jobs by 2051.

The City's new Official Plan (2023) has been prepared to appropriately plan where and how this growth will be accommodated and the supporting infrastructure that is required.

The City's North Expansion Lands represent a significant area of growth for the City and are therefore a representation of the Act's guiding principles.

3.2.1.3. More Homes Built Faster Act (Bill 23) (2022)

On November 28, 2022, the *More Homes Built Faster Act* received Royal Assent. The aim of the Act is to advance the province's goal to increase housing supply in Ontario; The goal is to have 1.5 million new homes built over the next 10 years. It builds on the province's early More Homes, More Choice Plan and the More Homes for Everyone Plan, and sets framework for growth by:

- Reducing the bureaucratic costs and red tape that are delaying construction and pushing home prices even higher;
- Promoting building up near transit and reforming zoning to create more "gentle density"; and
- Protecting homebuyers and utilizing provincial lands to build more attainable homes.

The Act amends various statutes to achieve the goal of increasing housing supply in Ontario, including the following:

Planning Act

The *Planning Act* and Provincial Planning Statement are described in **Section 3.2.1**. Key amendments to the *Planning Act* include changes to existing zoning by-laws, third part appeal processes to the Ontario Land Tribunal, site plan controls and parkland requirements.

Growth Plan for the Greater Golden Horseshoe and Related Land Use Plans

To accommodate the expected growth and support the building of more homes, The Growth Plan for the Greater Golden Horseshoe was amended in 2020 to reflect changes in population and employment forecasts, the horizon for planning and other policies to increase housing supply, great jobs, attract business investments and better align with infrastructure. This plan was later repealed and amalgamated into the PPS (2024) to form a single land use policy document, under O. Reg. 328/24 and Bill 97, Helping Homebuyers, Protecting Tenants Act (2023).

Conservation Authority Act

Regulatory and policy changes under the *Conservation Authorities Act* were made in 2022 to improve conservation authority governance, oversight, transparency, and accountability. The amendments do not remove the mandate of Conservation Authorities over watershed management but change their roles with respect to approvals and appeal rights. Individual municipalities have regulatory responsibility under the *Planning Act*, and the Minister of Natural Resources now has the authority to determine permit applications in place of the Conservation Authorities.

3.2.2. *Ontario Heritage Act*

The *Ontario Heritage Act* (OHA) gives municipal council the authority to designate heritage properties that have cultural heritage value or interest based on their historical, contextual, and/or architectural significance in the community. Under the Act, designated heritage properties are protected from demolition, and a Heritage Permit is required to make changes to a designated property. There are over 200 designated heritage properties in the City of Brantford.

The province and municipalities are enabled to conserve significant individual properties and areas through the OHA. The OHA, administered by the Ministry of Citizenship and Multiculturalism (MCM) requires that cultural heritage resources, including buildings, sites, and archaeological resources be protected. Impacts to these features must be avoided or mitigated. Through this Class EA project, the Project Team is undertaking Cultural Heritage and Archeological studies to mitigate risk.

3.2.2.1. Funeral, Burial, and Cremations Services Act (2002)

The FBCSA is enforced by the Bereavement Authority of Ontario to regulate funeral homes, cemeteries, crematoriums, and other related services. Should anyone discover an unmarked burial site during archeological assessments, the police or coroner are to be notified immediately, as required under Section 95 of the FBCSA.

3.2.3. Endangered Species Act

The Ministry of the Environment, Conservation and Parks (MECP) administers the provincial *Endangered Species Act*, 2007 (amended 2025), which was developed to:

- Identify species at risk (SAR), based upon best available scientific information, including information obtained from community knowledge and Indigenous traditional knowledge; and
- Provide for the protection and conservation of species at risk while taking into account social and economic considerations including the need for sustainable economic growth in Ontario.

The *Endangered Species Act* protects all Threatened, Endangered, and Extirpated species listed on the Species at Risk in Ontario List (SARO; Ontario Regulation 230/08). These species are legally protected from harm, and their habitats are legally protected from damage or destruction, as defined under the Endangered Species Act.

On June 5, 2025, Bill 5, the Protect Ontario by Unleashing our *Economy Act*, 2025 received Royal Assent, which will eventually replace the Endangered Species Act with the *Species Conservation Act* on a date to be determined. The Species Conservation Act, 2025 provides the same legal protection to SAR and their habitat.

3.2.3.1. Species Conservation Act, 2025 (DRAFT)

The SCA is not yet in-force but will eventually replace the ESA (anticipated in late 2025 or 2026), with the goal of expediting the review process for permits and approvals from the MECP. In addition, species that are protected under the SARA (i.e. aquatic species and migratory birds) will no longer be protected provincially under the SCA. Given the characteristics of the area, there is potential for terrestrial and aquatic provincial SAR species. Impacts on these species must be mitigated in accordance with the ESA and/or *Species Conservation Act*. The Project may be subject to a permit under the ESA and/or its regulatory exemptions under the Act depending on timing or may require registration under the new *Species Conservation Act*.

3.2.4. Fish and Wildlife Conservation Act

The FWCA provides protection for some species of birds, amphibians, reptiles, and mammals that are not covered under other Acts. There may be suitable habitat for several species along the Grand River and within the Study Area, such as raptors or fur-bearing mammals. As such, environmental management considerations, like timing windows for construction vegetation clearing, should be identified and respected.

3.2.5. Water Opportunities and Conservation Act

The Ontario Government passed the *Water Opportunities and Conservation Act* in 2010. The purposes of the Act are as follows:

- To foster innovative water, wastewater, and stormwater technologies, services and practices;
- To create opportunities for economic development and clean-technology jobs in Ontario; and
- To conserve and sustain water resources for present and future generations.

To further the purposes of the Act, the Minister of the Environment, Conservation, and Parks may establish aspirational targets in respect of the conservation of water and other matters.

The Act requires certain municipalities, persons, and entities to prepare, approve, and submit to the Minister of the Environment, Conservation, and Parks municipal water sustainability plans for municipal water services, municipal wastewater services, and municipal storm water services under their jurisdiction. The Minister may establish performance indicators and targets for these services. The Act also authorizes the making of regulations requiring public agencies to prepare water conservation plans, achieve water conservation targets, and consider technologies, services, and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources.

3.2.6. Safe Drinking Water Act

The *Safe Drinking Water Act* was adopted in 2002. The Act provides for the protection of human health and the prevention of drinking water hazards through the control and regulation of drinking water systems and drinking water testing. Key features of the Act include the following:

- Legally binding standards for contaminants in drinking water;
- Requirement to use licensed laboratories for drinking water testing;
- Requirement to report any results that do not meet the standards of the Ministry of the Environment, Conservation, and Parks and the local Medical Officer of Health and to undertake corrective action;
- All operators of municipal drinking water systems must be trained and certified;
- Establishment of a licensing regime for drinking water systems; and
- Inspections and enforcement to determine compliance with the Act.

3.2.7. Clean Water Act

The *Clean Water Act* was adopted in 2006 with the objective of protecting existing and future sources of drinking water including rivers, lakes, and underground aquifers. The Act requires the following:

- That local communities assess existing and potential threats to their water, and that they set out and implement the actions needed to reduce or eliminate these threats;
- Empowers communities to take action to prevent threats from becoming significant;
- Public participation on every local source protection plan – the planning process for source protection is open to anyone in the community; and
- That all plans and actions be based on sound science.

3.2.8. Source Water Protection

Under the *Clean Water Act*, O. Reg. 287/07, on-site sewage systems and sewage works may be considered a threat to drinking water. These activities may be deemed significant under certain conditions. The applicable Source Protection Plan policies have been considered throughout this Class Environmental Assessment.

Source Water Protection (SWP) Plans were prepared for the 19 watershed-based Source Protection Regions (SPR) across Ontario to protect existing and future sources and to identify areas of significant drinking water threats. The City of Brantford falls within the Lake Erie Source Protection Area.

The Source Water Protection Plans identify vulnerable areas that have been delineated under the *Clean Water Act* including Wellhead Protection Areas (WHPA), Intake Protection Zones (IPZ), Highly Vulnerable Aquifers (HVA), Significant Groundwater Recharge Areas (SGRA), and Vulnerable Scoring Areas (VSA) for Groundwater and Surface Water as well as water quantity vulnerable areas. According to the Source Protection Plan:

- WHPAs are areas on the land around a municipal well, the size of which is determined by how quickly water travels underground to the well, measured in years;
- IPZs are the areas on the water and land surrounding a municipal surface water intake;
- SGRAs are areas characterized by porous soils that allow the water to seep easily into the ground and flow to an aquifer; and
- HVAs are aquifers that can be easily changed or affected by contamination from both human activities and natural processes as a result of (a) its intrinsic susceptibility, as a function of the thickness and permeability of overlaying layers, or (b) by preferential pathways to the aquifer.

As the City of Branford's water supply is from the Grand River, it is located within IPZ 2, and the study area itself is located within an HVA. IPZ 2 has a vulnerability score of 9.

3.2.9. Ontario Water Resources Act

The *Ontario Water Resources Act* is the primary legislation governing water quality and quantity. It regulates material discharge into water, sewage works, and other activities like groundwater taking for construction dewatering.

3.2.9.1. O. Reg. 387/04, Water Taking and Transfer

The purpose of the regulation is to provide for the conservation, protection, and wise use and management of water. It also governs dewatering permits for construction and other activities. Dewatering estimates will be completed during detailed design; if the water taking rate for the project is >50,000 L/day and <400,000 L/day, registration on the EASR is required. If the water taking rate is >400,000 L/day, a Category 3 Permit to Take Water is required.

3.2.9.2. O. Reg. 903, Wells

O. Reg. 903 is a regulation on wells to ensure groundwater quality, well water quality, and the environment are protected during well construction activities. Well construction activities must protect aquifers and water resources, aquitards, water quality and quantity, and the health and safety of well owners and users. It also establishes the minimum standards for carrying out the work in order to achieve these objectives.

3.2.10. Conservation Authorities Act

The *Conservation Authorities Act* (1990, Amended 2024) provides for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds across Ontario. Part VI of this Act provides the framework for the jurisdiction of conservation authorities, the areas in which they regulate, and the process for issuing permits.

Section 28(1) of this Act states that: "*No person shall carry on the following activities, or permit another person to carry on the following activities, in the area of jurisdiction of an authority:*

1. *Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.*
2. *Development activities in areas that are within the authority's area of jurisdiction and are,*
    i. *hazardous lands,*
    ii. *wetlands,*
    iii. *river or stream valleys the limits of which shall be determined in accordance with the regulations,*
    iv. *areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or*
    v. *other areas in which development should be prohibited or regulated, as may be determined by the regulations.*"

3.2.10.1. O. Reg. 41/24

The study area falls entirely within the boundaries of the Grand River Conservation Authority (GRCA). The GRCA also administers O. Reg. 41.24, formerly O. Reg. 150/06, under Section 28 of the *Conservation Authorities Act*. In general, these regulations prohibit altering a watercourse, wetland, or shoreline and prohibit development in areas adjacent to river and stream valleys, hazardous lands, and wetlands, without the prior written approval from the Conservation Authority (i.e., issuance of a permit).

3.2.11. Environmental Assessment Act

The *Environmental Assessment Act* (EAA, 1990) was developed to provide for protection, conservation and wise management of the environment within Ontario. It outlines the process for projects to obtain Class Environmental Assessments (Class EAs), comprehensive Environmental Assessments, and Streamlined Environmental Assessments (not yet in-force). Projects that are exempt from the EAA are listed in O. Reg. 51/24: Exemptions from the Act and From Part II.1 of the Act, as well as O. Reg. 50/24: Part II.3 Projects – Designations and Exemptions. The EAA applies to all municipalities and agencies. All archeological work undertaken is as required by the EAA and its regulations.

3.2.12. Environmental Protection Act

The *Environmental Protection Act* (EPA; 1990) provides for the protection and conservation of the natural environment through the prohibition of discharging any contaminant into the natural environment, except where prescribed. It sets the process for obtaining environmental compliance approvals, registrations, spills, and records of site condition.

3.3. Municipal

3.3.1. *Land Swap*

Amendment 2 to the Growth Plan for the Greater Golden Horseshoe came into effect on June 17, 2013. This amendment updated Schedule 3 population and employment forecasts to 2031 and extended forecasts to a 2041 horizon and subsequently a 2051 horizon in later amendments in 2020 (see **Section 3.2.1.2**). As such, to accommodate increased growth needs and population densities forecasted through this plan to the City, additional land acquisition was necessary. Through a Municipal Boundary Expansion Agreement between the City of Brantford and the County of Brant, 2,720 hectares[1] of lands was transferred from the County to the City effective January 1, 2017. These lands are known as the Boundary Expansion Lands.

3.3.2. *Municipal Comprehensive Review*

In 2016, the municipal boundary between the City of Brantford and the County of Brant was adjusted in order to secure additional lands in the City for future growth. The boundary adjustment brought new lands into Brantford's municipal boundary. To determine the extent that the Settlement Area expansion, the City was required to undertake a MCR as input into their new or amended Official Plan. Once completed, the new or amended Official Plan can designate urban land uses within the expanded Settlement Area boundary. The MCR identified both growth and intensification targets as well as Settlement Area boundary expansion needs. The Settlement Area Boundary Expansion Lands are further subdivided into the following sub-areas:

- North Expansion Lands;
- East Expansion Lands; and
- Tutela Heights

[1] https://www.brantford.ca/en/business-and-development/developing-in-the-expansion-lands.aspx

The City's North Expansion Lands are 1,883 ha and make up 70% of the total Expansion Lands. The study area for this project is within the North Expansion Lands.

3.3.3. City of Brantford Official Plan

The City of Brantford Official Plan (OP) was approved in August 2021, and most recently consolidated in August 2025. As per the recent land swap and MCR, the Study Area is now located entirely within the City of Brantford; and the project is subject to the policies for infrastructure within the OP.

Section 8.1, Policies g-i of the OP outlines the following policies for Wastewater Servicing Infrastructure:

1) Development shall provide appropriate wastewater servicing infrastructure as approved by the City and, where necessary, the Conservation Authority and the Province;
2) Wastewater servicing infrastructure shall be designed, constructed, and maintained to:
    a) Provide adequate service to proposed developments;
    b) Accommodate full development of the catchment area;
    c) Utilize gravity flow wherever possible, to avoid the need for pumping stations;
    d) Protect the natural characteristics of the landscape in which they are located; and
    e) Satisfy the servicing standards of the City.

Section 8.1, Policy e of the OP outlines the following policies for Municipal Servicing Infrastructure:

- In planning for the expansion of existing and planned transportation and/or infrastructure corridors, the City will encourage the co-location of linear water, wastewater and storm water service infrastructure, wherever possible. Development of municipal infrastructure projects will be:
    - Coordinated and phased in a manner which is efficient, cost effective, and minimizes disruption; and
    - Encouraged to locate underground, where feasible.

4. Background Review

Upon initiation of the project, the Project Team reviewed a number of historical reports and data for the Study Area. These findings are described in the subsections below.

4.1. Previous Reports

The following section provides a high-level summary of the reports reviewed for this project, and how they were incorporated into the study.

4.1.1. Water, Wastewater, and Stormwater Master Servicing Plan Update – 2051 Amendment (2021)

The City's MSP completed in 2020 provides a review, evaluation, and development of servicing strategies for the City's water, wastewater, and stormwater systems. The strategies support existing needs as well as projected growth needs to 2051.

4.1.2. Transportation Master Plan Update – 2051 Addendum (2021)

The City's Transportation Master Plan – 2051 Addendum evaluates the impacts of the incorporation of the most recent 2051 growth forecasts from the Province into the City's Official Plan – Envisioning Our City 2051. It re-assessed and confirmed the assumption and recommendations of the 2020 Transportation Master Plan based on a 2041 horizon land use forecasts for a 2051 horizon year.

In terms of the impacts of growth, the following is noted with respect to the 2051 forecasts:

- Areas of population most impacted by the change:
    - North Expansion area - Powerline East block is expected to have an increase in population and redistribution between development blocks.
- Areas of Employment most impacted by the change:
    - North Expansion area – Paris Road Employment and the Powerline Road Employment blocks are expected to have an increase in employment.

A review of the transportation system identified potential capacity issues at Highway 403 / Oak Park Road interchange. The Transportation Master Plan proposed a recommended multi-modal transportation network for the 2051 Horizon year. Details specific to the study area of Oak Park Road and Powerline Road are as follows:

- In terms of active transportation, bike lanes / paved shoulder proposed along Oak Park Road and a multi-use path / trail is proposed along Powerline Road. In addition, the Plan identified that special treatment is required across the Oak Park Road Bridge; and
- In terms of infrastructure widening, Oak Park Road from Hardy Road to Powerline Road and Powerline Road from Oak Park Road to the City east limits are recommended for widening. The Plan also recommends upgrading the Highway 403 / Oak Park Road Interchange to ultimate configuration.

4.1.3. Municipal Comprehensive Review Addendum Report (2020)

The City conducted an MCR as input to the Official Plan. The MCR identified both growth and intensification targets as well as Settlement Area Boundary Expansion Lands, which include:

- North Expansion Lands (i.e., the Study Area);
- East Expansion Lands; and
- Tutela Heights.

The North Expansion Lands include the study area for this project and comprises an additional 21,789 people and 12,383 jobs (total 34,172 population and employment), in an area of 1,833 ha.

4.1.4. Paris Master Servicing Plan Update (2020)

The County of Brant's Paris Master Servicing Plan Update (Paris MSP) was completed in 2020. The Paris MSP outlines the water, wastewater, and stormwater servicing strategy needed to support the Paris system growth. Growth projections were based on the Paris Settlement Area Boundary (SAB) buildout scenario, which includes full buildout of all residential and employment blocks within the SAB.

The Paris settlement area consists of 13 km^2 of land within the County of Brant, north of and adjacent to this project's study area. Under the SAB buildout scenario, an additional 153.8 L/s of capacity is required to service Paris. One option for servicing Zone 4 of the Paris SAB is to connect to the Brantford system via a connection to the future Oak Park Road trunk sewer.

4.1.5. Ministry of Transportation Interchange EA (2006)

MTO completed an EA in 2006 which proposed that the Highway 403 interchange at Oak Park Road be upgraded to Parclo A4 with initial and ultimate stages. The initial stage includes the existing structure with accommodation for four 3.5 m lanes and 1.0 m side clearances, and the ultimate stage includes a widened structure to accommodate speed change lanes on Oak Park Road for a total of six lanes. The ultimate stage is required when development reaches 95% and 75%, south and north of the interchange respectively. The proposed design in this EA does not account for active transportation.

4.2. Technical Tools

The following section provides an overview of the technical tools used by the Project Team to hypothesize and assess the alternatives.

4.2.1. Geographic Information System (GIS) Mapping

The City provided geographic information system (GIS) mapping at the outset of the project, including all available water, wastewater, stormwater, and transportation infrastructure data, mapping of culverts and easements, digital elevation model (DEM), parcels, and municipal boundaries.

4.2.2. Technical Drawings

The City provided the following:

- Development plans within the study area;
- As-built drawings of infrastructure within and surrounding Highway 403, Oak Park Road, Powerline Road, and Fen Ridge Court;
- Available information from the Ministry of Transportation (MTO), such as traffic and OSIM data; and
- Available species and wildlife habitat data.

The primary landowner within the study area for the properties 473-474 Oak Park Road also provided the following data: draft plans, preliminary grading plan and sediment control plan, preliminary geotechnical investigation reporting, and archeological reporting.

4.2.3. Wastewater System Model

The City's hydraulic wastewater model in InfoWorks ICM was updated as part of the MSP, and again in 2023 including a linear and facility update and calibration to new flow monitoring data. The model includes dry weather flow and two wet weather flow scenarios including dynamic RTK unit hydrograph approach and static rainfall derived inflow and infiltration flow rated scenario based on the City's 0.3 L/s/ha design standard. The model will be used to analyze the existing and future system performance under different conditions. Any changes that are made to wastewater infrastructure within the study area will be included in the model that is used for this project.

4.3. Field Visits

The Project Team conducted a field visit on May 31, 2023. The purpose of the site visit was to gain context on the site, including visual observation of topography, traffic conditions, and proximity to utilities. These observations feed into the development of alternative solutions by helping to identify system opportunities and constraints.

Additional site visits were conducted by technical specialists spanning from early 2023 to late 2025. The specifics of each site visit, including the findings and conclusions, are found in the respective technical discipline reports.

5. Existing Conditions

This section will provide a high-level overview of the existing conditions within the Study Area. More detailed information can be found in each of the technical disciplines reports, which are attached in **Appendix A, B, C, D, E, F and G**. The following subsections will provide an overview of the existing municipal infrastructure, the growth and planning context, the natural environment, archaeological features, cultural heritage, geotechnical and hydrogeological conditions, source water protection and climate change implications.

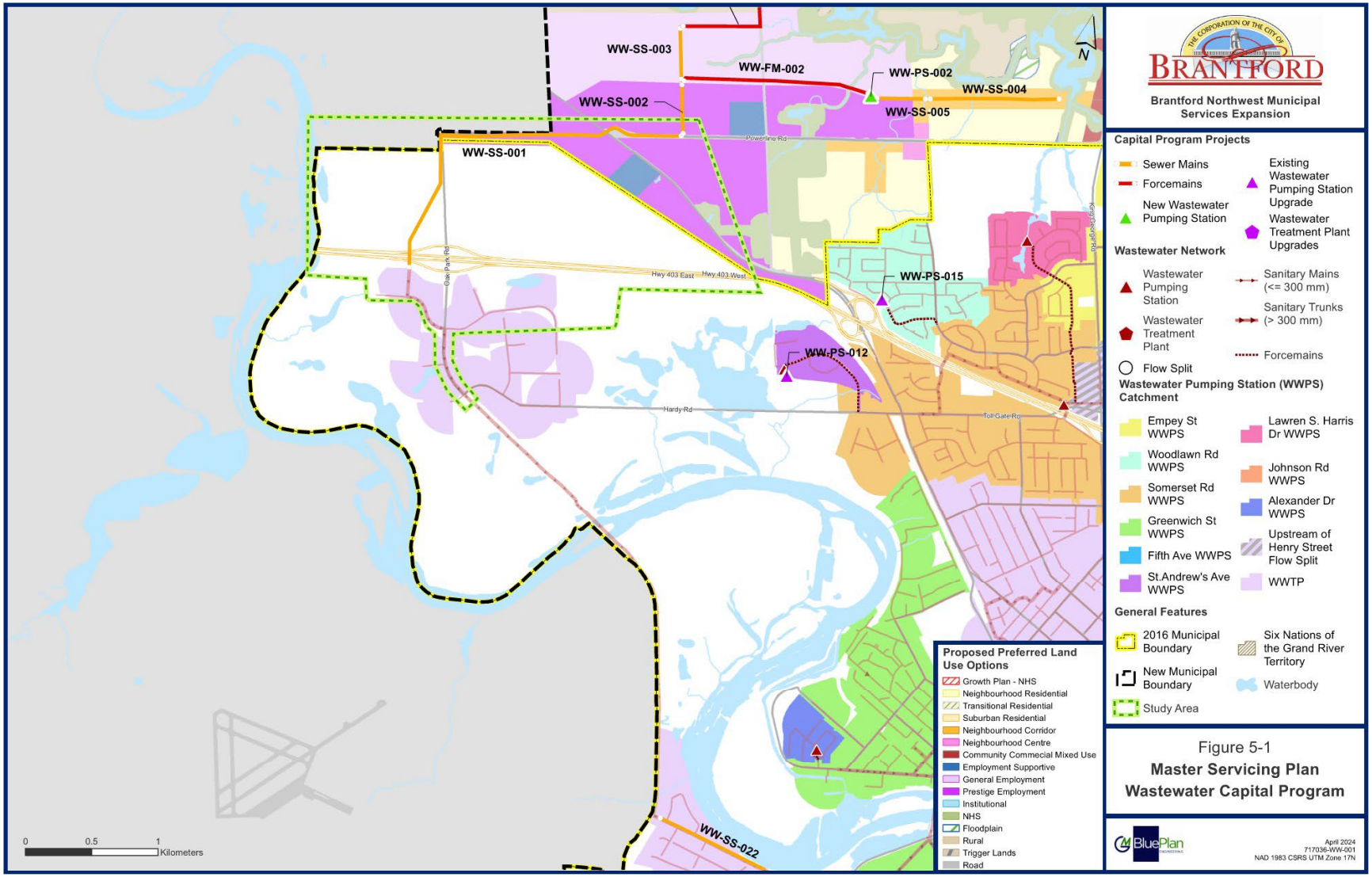
5.1. Existing Wastewater System

The Brantford wastewater system consists of one (1) wastewater treatment plant (WWTP), nine (9) pumping stations, and 10 wastewater catchments. The wastewater treatment plant is owned and operated by the City. Wastewater is treated and discharged into the Grand River. A wastewater system schematic is provided in Appendix A.

Wastewater servicing for the North Expansion Lands is characterized by challenging topography which generally slopes away from the existing wastewater network. The existing trunk sewer on Oak Park Road is at a depth which is able to support expansion of the wastewater network to North of Highway 403. The preferred servicing concept identified in the MSP includes a flow split at King George Road with flows west of King George Road flowing to the Oak Park Road trunk sewer. This concept provides servicing flexibility and the ability to simultaneously develop the east and west employment lands.

Ultimately, the full wastewater capital program in the MSP identified the upgrades shown in **Figure 5-1**, including the Oak Park Road Trunk Sewer (WW-SS-001) which will service the Northwest Employment Lands.

Figure 5-1. Master Servicing Plan Wastewater Capital Program



5.2. Growth and Planning Context

Significant growth is planned for the City by 2051, as detailed in the Water, Wastewater and Stormwater Master Servicing Plan (MSP) Update – 2051 Amendment (2021). As of the 2021 MSP, an additional population and employment of 67,626 and 46,207, respectively, are anticipated by 2051. The MSP is currently undergoing a further addendum, and these projections may increase further. **Figure 5-2** shows the breakdown of population growth throughout the City to 2051 by traffic area zone, based on the 2021 MSP.

The City's North Expansion Lands were identified as part of the Municipal Comprehensive Review as one of the primary designated areas of growth. Through the City's MSP, the growth projections for the Oak Park trunk sewer are anticipated to be a total of 19,174 people and jobs by 2051. This forecast used a Traffic Zone based distribution and includes the North Expansion Lands. **Table 5-1** summarizes the existing and 2051 populations.

Table 5-1. Population and Employment Growth in PD4

	Residential	Employment	Total
2016	10,215	3,845	14,060
2031			
2041			
2051	14,306	22,460	36,766
Growth	4,091	18,615	22,706

Due to the access to and proximity of study area and North Expansion Lands to the Highway 403 corridor, the City of Brantford Official Plan identifies these lands as Prestige Employment Designation and General Employment Designation, as indicated in **Figure 5-3**.

The study area is adjacent to the City's North Expansion Lands. As these lands will have significant growth over the next 30 years, the study area has been identified as a critical infrastructure corridor which will connect existing trunk infrastructure to the Boundary Expansion Lands.

5.2.1. County of Brant

The County of Brant's Paris Master Servicing Plan Update (2020) was prepared to balance the needs of growth within the County with the protection and preservation of natural heritage resources. The report provided a framework and vision for the management and expansion of wastewater servicing needs for the County. The update confirmed the long-term wastewater treatment and pumping needs and detailed a preferred wastewater servicing strategy based on background review and technical analysis. The Paris Master Servicing Plan Update did not identify any significant servicing connect to the Branford system. However, the County has subsequently identified the potential to convert a portion of the existing septic services south of Paris to a sewer-based system with connection to the Brantford sewer system.

The Oak Park Road Trunk Sewer project analysis will need to consider the potential impact on the preferred alignment resulting from the potential service connection to Paris.

Figure 5-22. Master Servicing Plan Growth

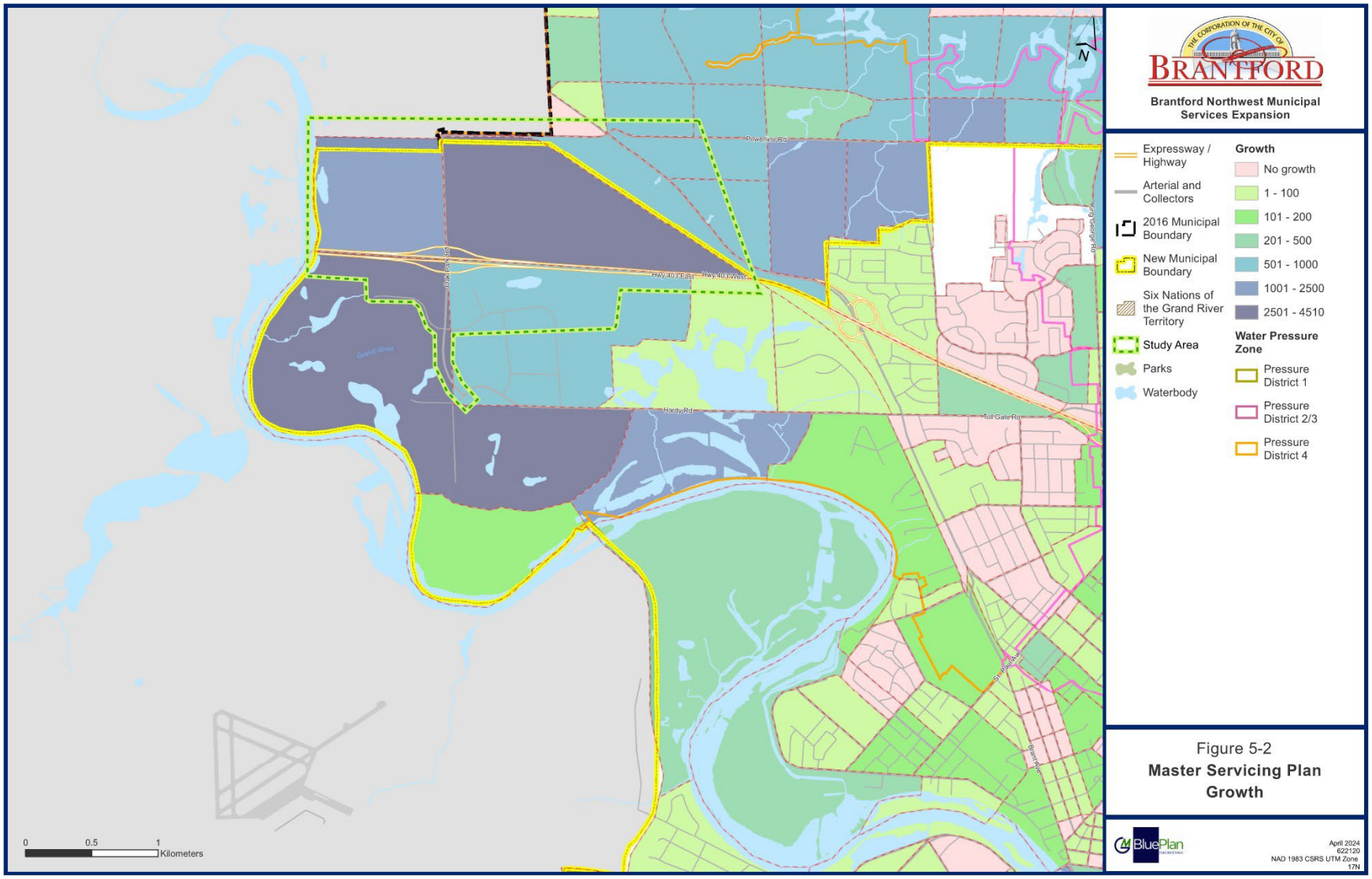
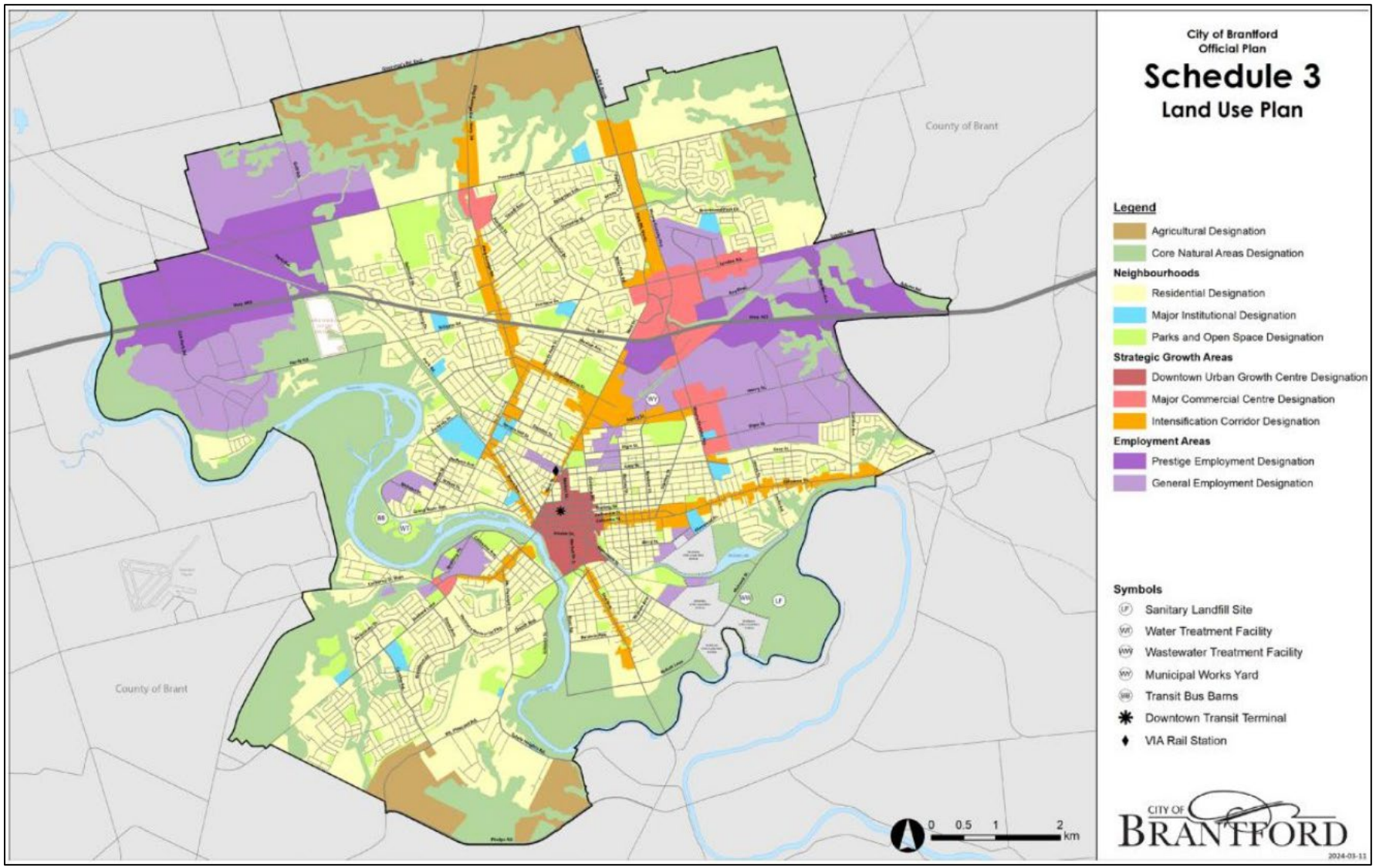


Figure 5-33. City of Brantford Official Plan – Schedule 3: Land Use Plan



5.3. Natural Environment Resources

Montrose Environmental Group (Montrose; previously Matrix Solutions Inc.) has completed a comprehensive review of the natural environment features and areas within the Study Area. As part of their investigations, they have prepared a 'Natural Heritage Existing Conditions Report' (March, 2025) and a Species at Risk Assessment Memo (September, 2025). An overview of their findings is included in the subsections below, with their reports attached in Appendix B.

5.3.1. Desktop Natural Heritage Study

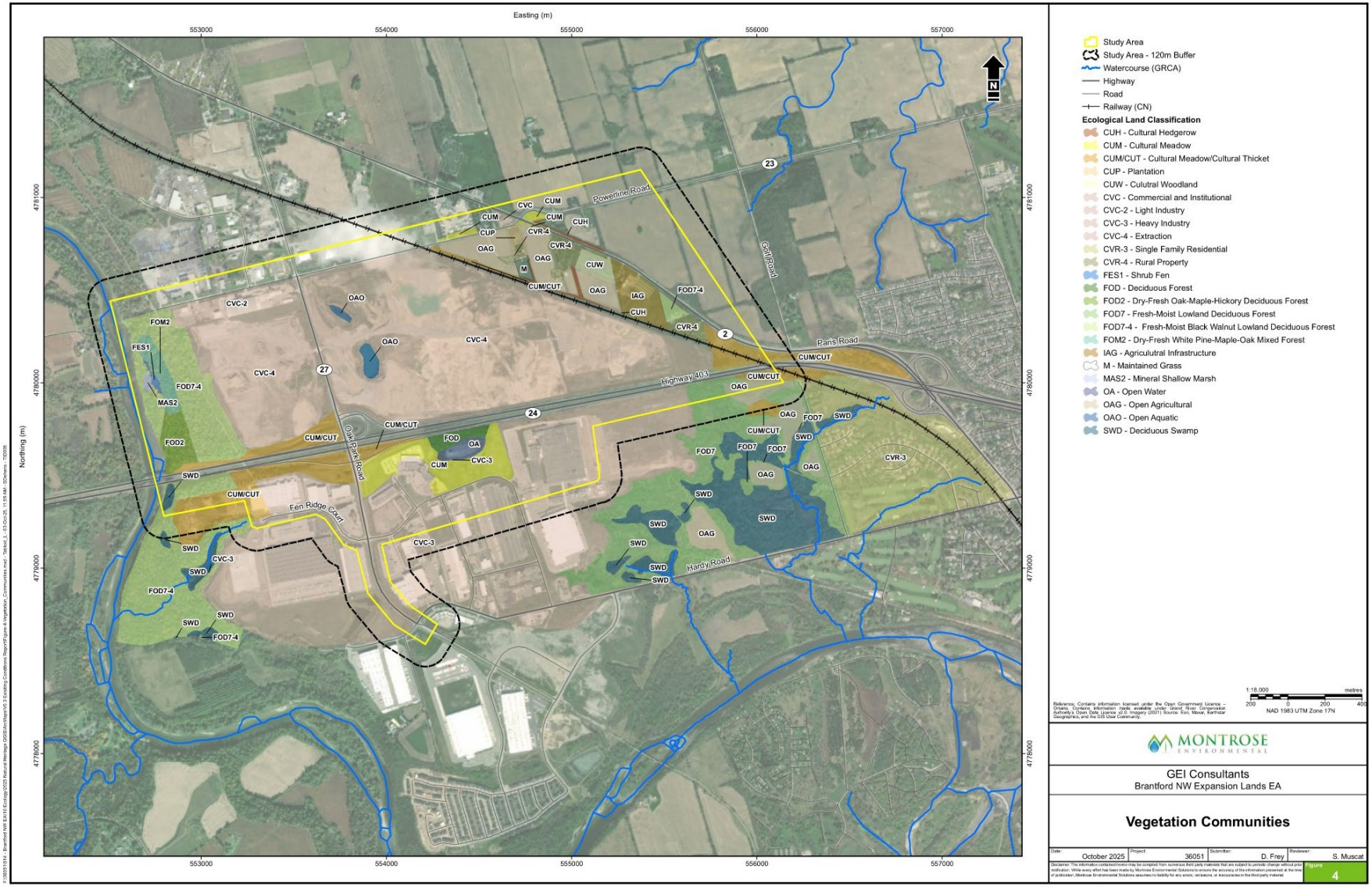
A desktop Natural Heritage study was completed to identify natural heritage features for the entire Brantford Northwest Service Expansion study area. This includes but was not limited to Species at Risk and potential for rare vegetation. The Natural Heritage Existing Conditions Report is included in **Appendix B**. This report summarizes background information and the findings of site reconnaissance-level field investigations, as well as a preliminary assessment of impacts and mitigation measures. A map of vegetation within the study area is shown in **Figure 5-4**.

The following candidate constraints were identified for the entire Northwest Expansion Study Area:

- Brantford Perched Fens Provincially Significant Wetland Complex;
- Brantford Northwest Provincially Significant Wetland Complex;
- Brantford Tufa Mounds, a Provincially Significant Earth Science Area of Natural and Scientific Interest (ANSI);
- Grand River, and its associated tributaries;
- Valley lands associated with the Grand River; and
- Potential for 20 SAR listed as either Endangered or Threatened under the ESA.

The majority of these candidate features were located outside of the Oak Park Road Trunk Sewer Study Area.

Figure 5-44. Vegetation within the Study Area



5.3.2. Technical Memorandum

Once the short-list of alternatives was chosen, Montrose then completed additional field investigations in the Spring and Summer of 2025. These visits were intended to review the candidate constraints in more detail and were to support all seven (7) MCEAs within the Study Area.

One potential constraint for the Oak Park Road Trunk Sewer alignment was identified to be associated with the cultural meadow and cultural thicket (CUM/CUT) communities located adjacent to Oak Park Road and Highway 403. While small and highly degraded, these communities could provide habitat for grassland birds including the threatened Eastern Meadowlark (*Sturnella magna*).

Breeding bird surveys were completed within this area as a due diligence measure to assess for the presence of species at risk birds. Surveys were completed between May and June 2025 and determined that no SAR birds or other rare bird species are within the Study Area. These results are included in the "Brantford Northwest Services Expansion Lands Environmental Assessment Oak Park Road Watermain and Trunk Sewer Projects - Species at Risk Assessment" in Appendix B.

Other bird species were observed during surveys exhibiting evidence of possible or probable breeding; regard for the Migratory Birds Convention Act will be necessary at the construction stage. Any vegetation clearing within the CUM/CUT should avoid the core bird nesting season between April 1 and August 31.

In conclusion, as supported by the results of 2025 breeding bird surveys, there have been no SAR identified associated with the Oak Park Road watermain/trunk sewer alignment. No suitable habitat for any other SAR previously noted as candidate was present within the Study Area, and therefore no additional surveys were required.

The results of the study were used to guide the evaluation process, to identify potential mitigation requirements, and to confirm if additional investigations are required.

5.3.3. Final Report

Montrose is completing an additional report that will provide a fulsome analysis of the natural environment findings for each of the seven projects; however the reports above provide a comprehensive review of key impacts to natural heritage and mitigation measures are explored further in Section 10.1. The final Montrose report will include an evaluation of the natural heritage impacts associated with terrestrial and aquatic ecosystems, species at risk, and Indigenous interests. This report, once completed, will support the future project file reports.

5.4. Archeological Resources

Archaeological Services Inc. (ASI) has completed a comprehensive review of the potential archaeological resources and areas within the Study Area. As part of their investigations, they have prepared a Stage 1 Archaeological Assessment (July, 2023). An overview of their findings is included in the subsections below, with their reports attached in **Appendix C**.

5.4.1. Stage 1 Archaeological Assessment

A Stage 1 Archeological Assessment (AA), included in **Appendix C**, was carried out to evaluate the potential for archeological resources within the entire Northwest Expansion Study Area. This was completed by reviewing physiographic, land use, historical information and mapping, conducting a property inspection for the area to inspect its current condition, and by contacting the Ministry of Citizenship and Multiculturalism (MCM) to determine if there were any known archaeological sites within a 1 km radius.

The Stage 1 AA determined that there are 77 previously registered archaeological sites located within 1 km of the study area. However, none of these that exist within 50 m of the study area have been noted to have further cultural heritage value or interest. The property inspection undertaken revealed that parts of the study area exhibit archaeological potential which will require further assessment. The Oak Park Road Trunk Sewer Study Area was not identified as an area of archaeological potential, and therefore no additional studies were required. A stage 2 archaeological assessment was completed to support some of the other projects as part of the overall Northwest Expansion Environmental Assessments.

This Stage 1 Archaeological Assessment was submitted to the Ministry of Citizenship and Multiculturalism (MCM) and entered into the public registry, as per the communications received on March 20, 2024. This letter has been added to **Appendix C.**

Figure 5-5a5. Areas of Archaeological Potential

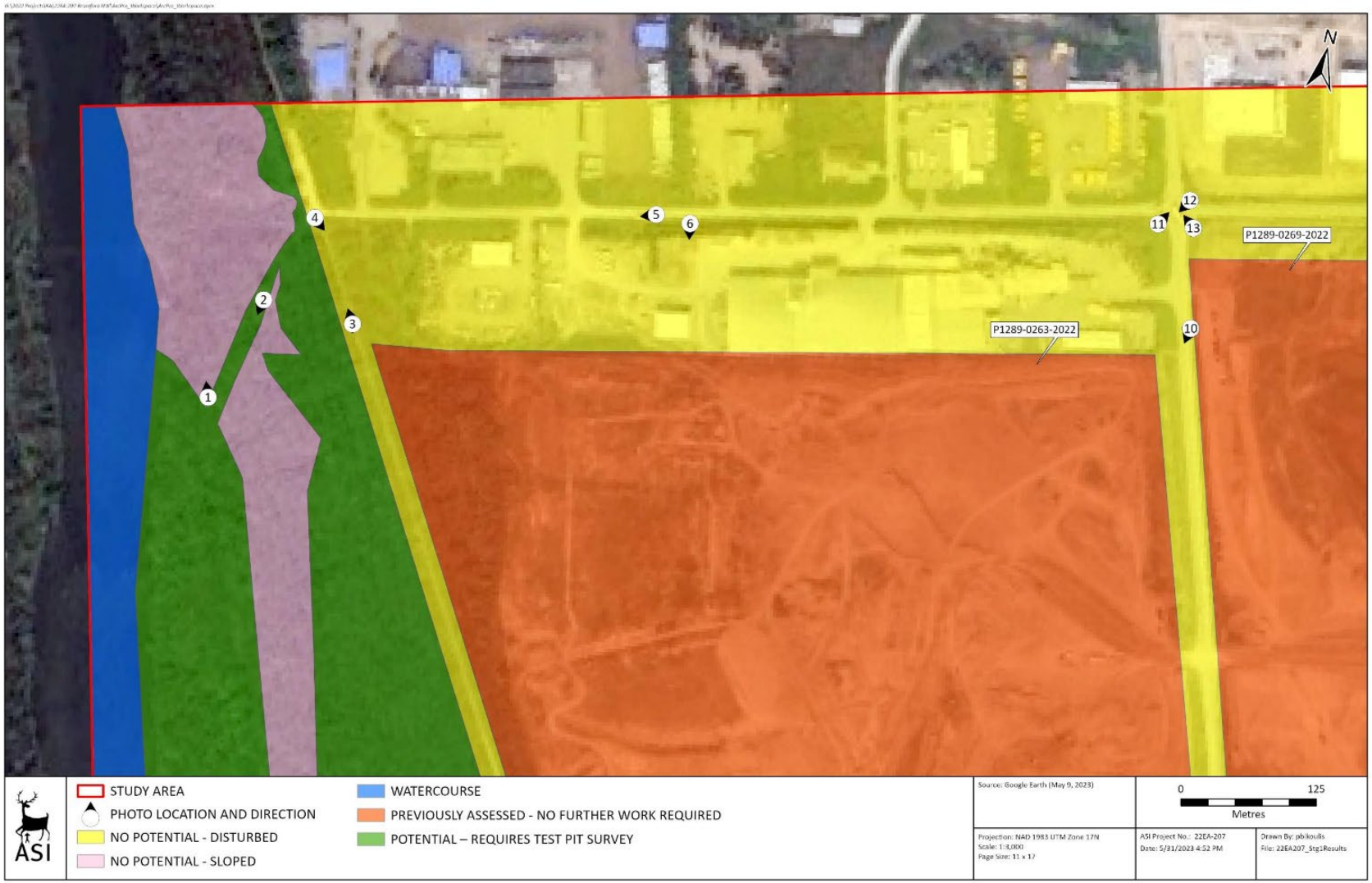
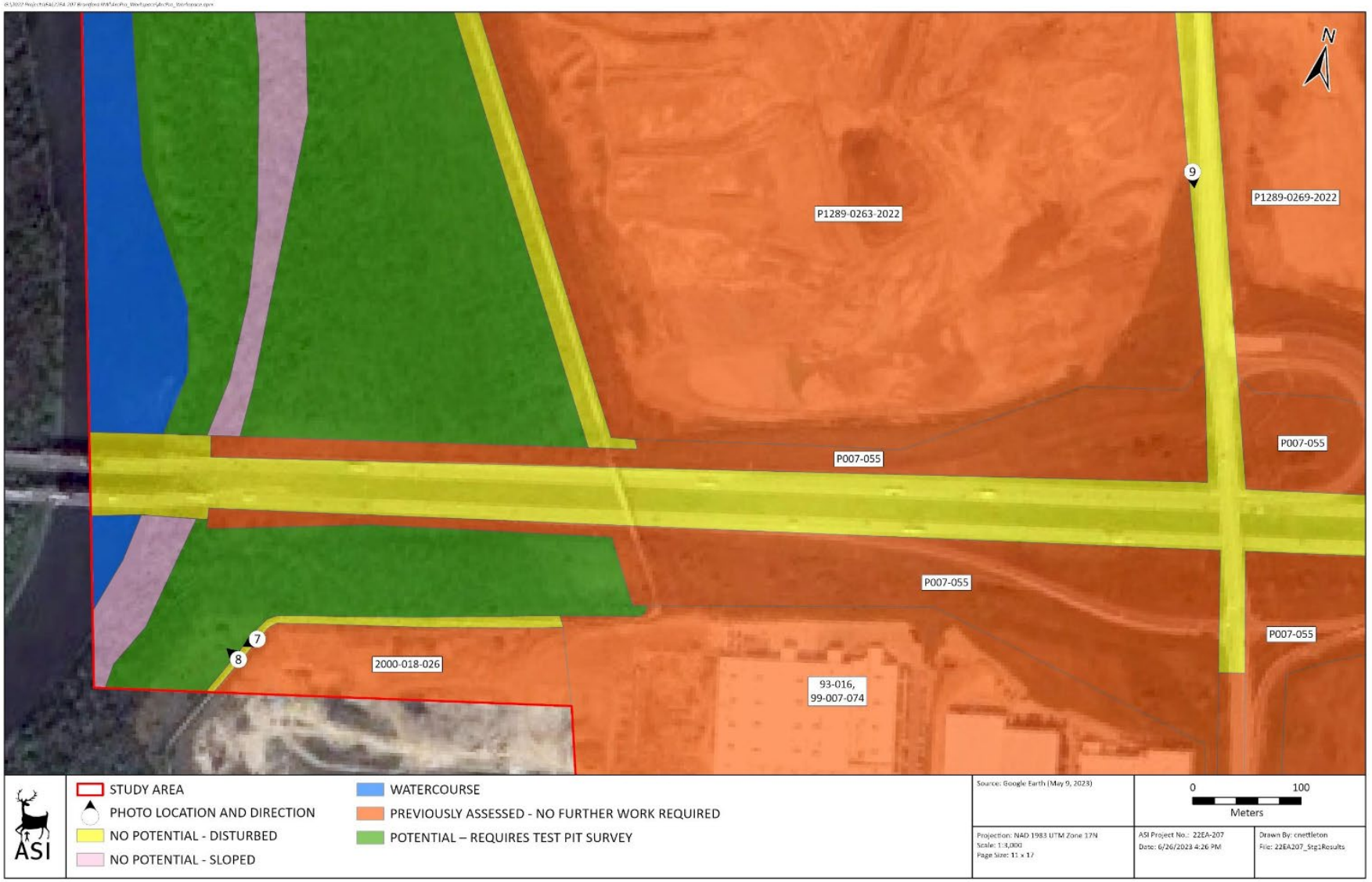


Figure 5-5b6. Areas of Archaeological Potential



5.5. Cultural and Built Heritage Assessment

ASI has also completed a comprehensive review of the potential cultural heritage resources and areas within the Study Area. As part of their investigations, they have prepared a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment. An overview of their findings is included in the subsections below, with their reports attached in Appendix D.

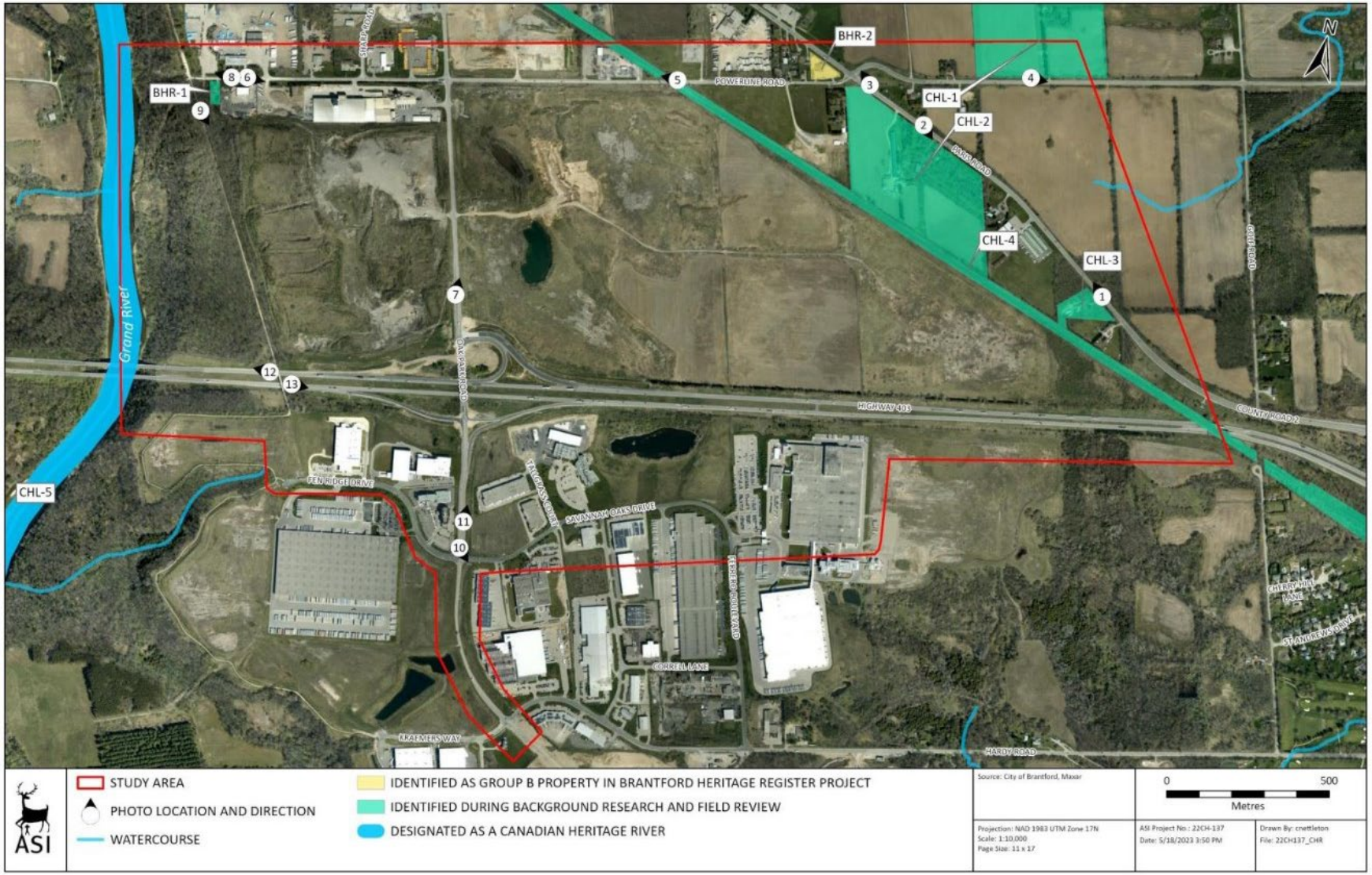
5.5.1. Desktop Cultural Heritage Report

A Cultural Heritage Report was conducted as part of the Cultural Environment Assessment. The Cultural Heritage Report focused on analyzing background research and field survey results to identify known and potential cultural heritage resources located in the study area which could be impacted by the study. This Report is included in Appendix D.

The Cultural Heritage Report focused on the existing conditions of entire Northwest Municipal Services Expansion Study Area. The report identified two (2) Built Historical Resources (BHR) and four (4) potential Cultural Heritage Landscapes (CHL). **Figure 5-6** identifies these features.

Section 5.2 of the Cultural Heritage Report notes that none of the BHRs or CHLs within the Study Area will be directly impacted by the Oak Park Road Trunk Sewer preferred alternative. There may be a need to tunnel under CHL 4 (CN Railway) which should not have any direct impacts; there may be some indirect impacts associated with construction related vibrations to BHR2 (**Figure 5-6**).

Figure 5-67. Cultural Heritage Features



5.6. Geotechnical and Hydrogeological Conditions

The initial project input consisted of a desktop geotechnical and hydrogeological report included in Appendix E. The review describes the local geology, anticipated subsurface conditions along the potential new water transmission main and sanitary trunk sewer, an evaluation of alternative alignments from a geotechnical and hydrogeological perspective and input regarding any potential construction related constraints.

Based on background borehole information at the existing servicing easement off Fen Ridge Court, it is anticipated that the Highway 403 crossing will encounter very dense sand and gravel with possible boulders. As the groundwater table's elevation ranges between 233 and 232 MASL, horizontal directional drilling (HDD) or jack and bore are likely suitable installation methods. Additionally, as long as the vertical alignment remains above the water table, dewatering at launching and receiving locations are unlikely to be required.

5.7. Source Water Protection

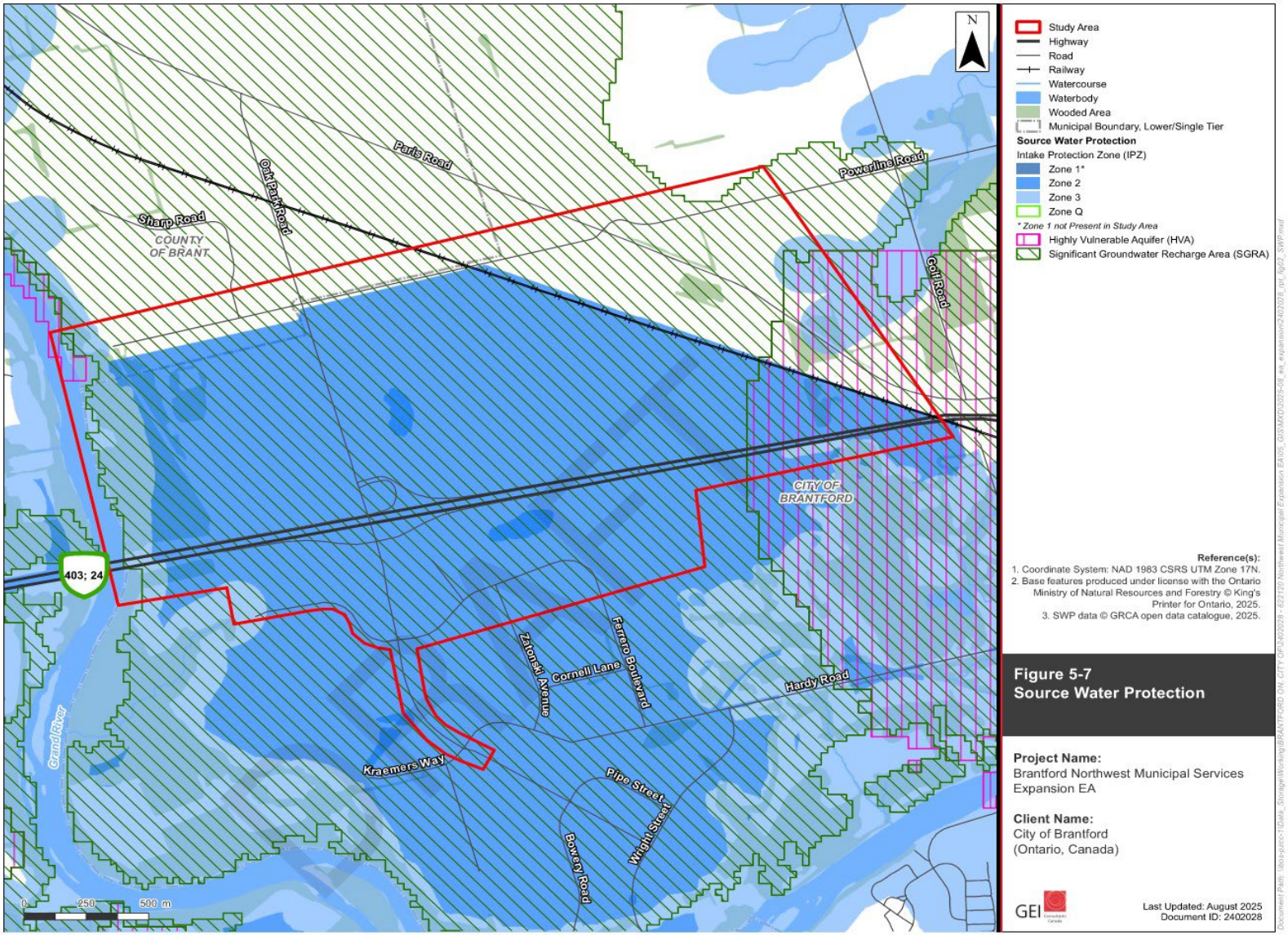
A Source Water Protection Assessment is included in **Appendix F** which provides context on the SWP framework for the entire Brantford Northwest Service Expansion study area Study Area. The Study Area is within the jurisdictional boundary of the Grand River Conservation Area (GRCA) which is within the Lake Erie Source Protection Region; correspondence confirming this with the GRCA is included in **Appendix F**.

The study area is not located within or intersecting a Wellhead Protection Area (WHPA), but it is located within IPZ-2 with a vulnerability of 9; The easterly portion of the Study Area is classified as high intrinsic vulnerability, with the westerly portion of the Study Area listed as medium intrinsic vulnerability. The southeasterly portion of the Study Area is located within a Highly Vulnerable Aquifer (HVA), and the majority of the Study Area is located within a Significant Groundwater Recharge Area. These areas are shown in **Figure 5-7**.

Threat assessments related to SWP generally do not incorporate watermains or sewers; as the 2021 Technical Rules under the Clean Water Act indicates that there are no "significant drinking water threats" related to the installation or operation of watermains or sanitary sewers. As such, there were no threats or mitigation measures identified as required for consideration as part of the trunk sewer EA.

However, all construction should consider mitigation measures related to road salt application, snow storage, and proper handling and storage of fuel.

Figure 5-7 Source Water Protection



5.8. Climate Change Impact

A Climate Considerations Technical Memo (**Appendix G**) was prepared to help assess opportunities to both reduce greenhouse gas emissions through the design and construction of infrastructure and ensure that sewer infrastructure design and alternatives proposed and selected are resilient to projected future climate conditions.

The memo characterized climate change within the City of Brantford using Climate Atlas of Canada for data on temperature and precipitation trends; and Intensity-Duration-Frequency analyses were completed using data from the Western Computerized IDF Climate Change Tool using the nearby Brantford Airport station (ID:6140942). Two climate scenarios were addressed: a low-carbon scenario (RCP 4.5) and a high-carbon scenario (RCP 8.5), assessing future conditions for the 2050s (2041–2070) and 2080s (2071–2100) relative to the historical baseline period of 1976–2005.

The City is expected to experience annual temperature rises and both rainfall and snowfall are expected to increase and storms to be more frequent and intense. The IDF analysis shows that Brantford is likely to see more frequent and intense rainfall across all storm durations.

The Climate Considerations Technical Memo provides an overview of how these climate variables and parameters could impact wastewater infrastructure and provides recommendations for adaptation measures for consideration on a short-term operational basis for water infrastructure and long-term capital strategies. The results and recommendations from this report have helped guide the evaluation process and identify potential mitigation requirements.

6. Technical Servicing Requirements

6.1. City's Design Standards

6.1.1. Design and Construction Linear Municipal Infrastructure Manuals

The Design and Construction Linear Municipal Infrastructure manuals provide City staff, consulting engineers, contractors, developers and the general public with a common reference to ensure the consistent application of design and construction practices of linear municipal infrastructure within the City. The manuals are intended to aid in the planning, design and construction, maintenance and operational activities of the municipal infrastructure for both new and the retrofit of existing infrastructure.

The City's Design and Construction Standards Manual for Sanitary Sewers will be used as a key reference in the development of the preferred alternative in order to ensure the design and construction is consistent with other infrastructure in the City.

6.1.2. Urban Design Manual

The Urban Design Manual provides a consolidated set of citywide urban design guidelines. It reflects the City's commitment to good urban design and provides a consistent baseline for assessing development proposals on both public and private lands.

6.1.3. Master Servicing Plan – System Performance Objectives

Design criteria and level of service (LOS) targets for this study as they relate to water use and system performance will be adopted from the MSP and modified as required to adhere to the City's Design and Construction Manual Linear Municipal Infrastructure Standards. Design criteria are detailed in **Table 6-1**.

Table 6-1. Wastewater Design Criteria

Criteria	Target
Per capita rate Resident	245 L/cap/day
Per capita rate Employment	270 L/cap/day
Max day peaking factor	4.0
Inflow / Infiltration Allowance	0.3 L/s/ha

The maximum day peaking factor is used to estimate the growth-related peak dry weather flows. It is based on Harmon's peaking factor, following the City's design criteria, which incorporates an additional safety factor in the evaluation of the local system.

6.2. Brantford's Wastewater System Capacity Needs

6.2.1. Growth Projections

Through the City's MSP, growth projections for the Oak Park trunk sewer are anticipated to be a total of 36,766 people and jobs by 2051. This forecast used a Traffic Zone based distribution and includes the North Expansion Lands. **Table 6-2** summarizes the existing and 2051 populations.

Table 6-2. Population and Employment Growth in New Oak Park Trunk Sewershed (2051 MSP).-

	Residential	Employment	Total	Area (ha)
2016	0	0	0	0
2051	7,286	11,913	19,199	904
Growth	7,286	11,913	19,199	904

6.2.2. Wastewater Servicing Needs

Table 6-3 summarizes the several growth scenarios estimated the projected population under, area, and design peak wet weather flow (PWWF) for the municipal boundary full buildout. **Table 6-3** also summarizes the potential impacts if the proposed residential lands and industrial lands density was to increase to 90 people and 25 jobs per hectare.

Table 6-3. Municipal Boundary Full Buildout Populations and Flows

Trunk Sewer	Area (ha)	Population	Employment	PWWF (L/s)
2051 MSP Growth Scenario	904	7,286	11,913	426
2051 MSP Growth Scenario + Trigger Lands	1,213	25,808	11,913	627
2051 MSP Growth Scenario + Trigger Lands + Brant Allowance	1,283	25,808	13,663	707
90 people and 25 jobs per hectare	1,283	39,960	0,970	776

A future connection to Paris in the County of Brant described in **Section 6.2.2.1** will be considered in the sizing of all infrastructure.

As discussed previously, the North Expansion Lands are a significant area of the City's total growth. The Oak Park Road Trunk Sewer will serve as a significant link from the City's existing system to the North Expansion Lands.

6.2.2.1. Potential Paris Connection

The County of Brant's Paris Master Servicing Plan Update (2020) was prepared to balance the needs of growth within the County with the protection and preservation of natural heritage resources. The report provided a framework and vision for the management and expansion of wastewater servicing needs for

the County. The update confirmed the long-term wastewater treatment and pumping needs and detailed a preferred wastewater servicing strategy based on background review and technical analysis. The Paris Master Servicing Plan Update did not identify any significant servicing connect to the Branford system. However, the County has subsequently identified the potential to convert a portion of the existing septic serviced south Paris to a sewer-based system with connection to the Brantford sewer system.

The Oak Park Road Trunk Sewer project analysis will need to consider the potential impacts on the preferred alignment resulting from the potential service connection to Paris. For the purposes of this study the allowance for 70 ha of employment lands at 25 job/ha was made to accommodate the potential Paris lands.

6.2.3. Wastewater Sewer Sizing

The MSP identified a wastewater sewer size of 825 mm. Through this study, the sizing was validated. **Table 6-4** presents a summary of wastewater sewer capacity values under future (2051) growth scenarios and under the potential trigger lands scenario. Under anticipated MSP scenario a 750 mm sewer would be sufficient to meet the City's design standard capacity criteria of 0.8 d/D; however, would be undersized to support flows under the higher growth scenarios. The 825 mm provides sufficient capacity support a broader range of growth scenarios, while remaining at 50% full under the MSP 2051 growth scenario.

Table 6-4. Summary of Wastewater Flows and d/D

	Desing Flow Rate (L/s)	750 mm Wastewater Sewer Capacity (d/D)	825 mm Wastewater Sewer Capacity (d/D)
2051 MSP Growth Scenario	426	0.61	0.53
2051 MSP Growth Scenario + Trigger Lands	627	0.85	0.68
2051 MSP Growth Scenario + Trigger Lands + Brant Allowance	658	>1	0.70
90 people and 25 jobs per hectare	776	>1	0.81

6.3. Agency Requirements

Technical considerations for this project include factors which will influence the construction strategy, including potential road closures, staging areas, and requirements of utility and government stakeholders.

6.3.1. Ministry of Transportation

The Ministry of Transportation (MTO) has outlined requirements with respect to the Highway 403 right-of-way, including the following:

- 14 m setback for any construction staging;
- Highway crossing location should be outside the functional footprint of the interchange;
- Depth of cover shall start at 5 m beneath the lowest point of ditch, and maintain consistent elevation through the crossing, and be fully encased; and
- 20 m separation held for the SC Johnson Trail culvert box structures and pedestrian bridge crossing.

6.3.2. Hydro One

Hydro One has identified the following requirements with respect to construction in proximity to the hydro infrastructure:

- 3 m radius around each tower footing from the edge of trench must be left unpaved for access to the footing;
- 6 m access route along the corridor to access each transmission structure during construction;
- 10 m radial exclusion zone during construction around each affected hydro tower (measured from the face of the tower legs), including excavation. This means that no grading / excavation work shall be carried out using heavy machinery within 10 m of tower footings;
- 15 m radial exclusion zone around each affected structure (measured from the nearest structure member: base of pole, tower leg footing, or structure anchor) for maintenance operations. This clearance must be maintained at all times, and storage or staging activities are not permitted within this area at any time;
- Underground infrastructure must be designed to withstand the loading conditions created by heavy maintenance vehicles; and
- Pipelines on ROWs must adhere to the provisions of CSA Standard 22.3 No. 6.

A Secondary Land Use Technical Review is required for a full list of Hydro One requirements for work within the right of way. The requirements and checklist document for this review is provided in Appendix F.

6.4. General Construction Considerations

General construction considerations for tunneled and open cut infrastructure were made to help inform the evaluation process in terms of determining which sections are tunneled or open cut, how many tunnel shafts are required, and the size of easement that is required. The following encompasses a summary of construction best practices which were used to inform the alternatives evaluation:

- For tunneled infrastructure:
    - Tunnel shafts are assumed to be 10 m in diameter;
    - 1.8 m tunnel height assumed for person entry;
    - 1 km maximum tunnel length between tunnel shafts; and
    - Minimum 2,000 m2 staging area (including the tunnel shaft), with 10 m on at least one side of shaft to allow for truck access.
- For open cut infrastructure:
    - Assume maximum depth is 10 m for cost effectiveness; and
    - Minimum 1:1 trench slope during construction.

For all linear infrastructure construction, it is anticipated that road closures will be required along the alignment where tunnel staging and open cut construction are undertaken. Easements are required for the area needed for construction and maintenance of the water and wastewater infrastructure. Staging areas may fall outside of the easements, in which case a temporary construction easement or permit may be required.

Water and wastewater infrastructure shall be separated by a minimum of 2.5 m horizontally per the MECP Procedure F-6-1: Procedures to Govern Separation of Sewers and Watermains. The procedure also states that for tunneled infrastructure, if a tunnel is of sufficient size to permit person entry (i.e. 1.8 m described above), the watermain and sewer may be in the same tunnel provided that the watermain is suspended above the sewer. Therefore, where tunnelling is required under Highway 403 and the CN Rail, the watermain and sewer will share the same tunnel.

7. Screening and Evaluation Methodology

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

As mentioned in **Section 1.3** above, the alternative solutions were identified and evaluated for all 7 projects within the overarching Study Area simultaneously. For both this Oak Park Road Trunk Sewer PFR, and the closely associated Oak Park Road Watermain PRF, these two projects were evaluated together. As they will be constructed together, the Project Team considered the joint impacts and construction requirements for both (i.e. phasing, etc.).

In order to identify and evaluate alternatives for the Oak Park Water & Wastewater Projects, the Project Team did consider, at a high level, potential alignment alternatives for the Powerline Water & Wastewater Projects (for which the project files are currently being finalized). This is due to the fact that the Oak Park mains must flow into the Powerline mains, before reaching the existing infrastructure.

The Highway 403 crossing location, which is part of the Oak Park Water & Wastewater Project, was considered first as it is the most limiting factor in all evaluations. The potential alignments for the Powerline projects were considered less limiting and were therefore evaluated second.

This section describes the process undertaken to identify, develop and evaluate alternative solutions to address the problem and opportunity statement. Generally, the process includes:

1. Generate long list of alternatives (focused on Highway 403 crossings)
2. Identify whether the alternative passes the screening criteria
    a. If yes: proceed to Step 3
    b. If no: alternative is no longer considered for further evaluation
3. Using the alternatives that pass the screening criteria, generate a short list of alternatives with detailed alignments, with input from the Transportation team
4. Identify whether the alternative passes the evaluation criteria
    a. If yes: preferred alternative is selected
    b. If no: alternative is no longer considered for further evaluation.

Screening Approach

In accordance with the MCEA process, the Project Team developed a long list of alternative solutions to address the needs of the Oak Park Trunk Sewer. The long list was then screened according to the criteria detailed in **Table 7-1** to prepare the short-list of alternatives.

Table 7-1. Screening Criteria

Screening Criteria	Definition
Feasibility of Highway 403 crossing	• Aligns with Ministry of Transportation requirements with respect to crossing being outside the functional footprint of the interchange at Oak Park Rd
Adequately supports servicing external to the Study Area	• Supports servicing needs north of the Study Area • Supports efficient connection to County of Brant
Minimizes property and easement requirements	• Limits the additional property acquisition and easements required for construction and servicing
Feasibility of connection to existing trunk infrastructure	• Ability to connect and ease of connection to the existing trunk infrastructure south of Highway 403
Minimizes construction impacts	• Limits additional disruption to residents, businesses, and existing infrastructure caused by construction works (road closures, access to businesses)
Minimizes environmental impacts	• Limits the disruption to environmental features and additional permits required for construction
Supports internal servicing	• Limits the amount of additional infrastructure required for connection through the developer's lands
Limits disruption to external infrastructure	• Limits additional disruption to infrastructure, particularly relating to hydro and rail corridors

The alternatives were screened using the following scoring:

- Meets criteria (Y);
- Additional mitigation / investigation needed (A); and
- Does not meet criteria (N).

7.1. Evaluation Approach

GEI then evaluated the short list of alternatives based on the following four categories:

- Technical Feasibility;
- Natural Environment Considerations;
- Social / Cultural Considerations; and
- Financial Viability.

Table 7-2 summarizes the evaluation criteria. GEI reviewed and scored each short-list alternative according to the evaluation criteria.

Table 7-2. Evaluation Criteria Definitions

Criteria	Definition
Technical Feasibility	
Meets existing and future servicing needs	Ability to satisfy the project problem and opportunity statements and to achieve the desired system technical level of service objectives. This includes the ability to provide sufficient capacity to meet existing levels of service and support future growth targets.
Provides opportunity for connection to County of Brant	Feasibility of providing a future connection to the County of Brant to support existing and future servicing needs.
Aligns with planned system strategy and configuration	Aligns with current planned configuration and operation, while minimizing length and maximizing use of existing facilities.
Provides reliable servicing	System configuration's ability to support flexibility in system operations, redundancy in system supply capacity, and minimizes the risk related to single element failure. Includes the feasibility and maintenance of implementation and adaptation to increases in system requirements or reduction in supply capacity.
Minimizes conflict with existing infrastructure and utilities	Adheres to Ministry of Transportation, Canadian National Rail, Hydro One, requirements for construction and operation within proximity to existing infrastructure.
Ease of property / land acquisition for construction	Impacts that any required property may have on the implementation process (expropriation of land / land purchase or temporary / permanent easements) and compatibility with surrounding land use.
Minimizes and manages construction risk	Constructability including scope, time required to complete construction, and feasibility of design, as well as timing and technical suitability of project implementation with the aim of improving the overall flexibility in project phasing and reducing the number of critically dependent components.
Natural Environmental Considerations	
Protects environmental and natural heritage features	Assess, monitor, and ensure the preservation and protection of aquatic resources and natural features within the site location, alignment, and surrounding environment. This includes potential impacts to wetlands, terrestrial habitat/features, vegetation, wood lots, and steep slopes identified by Conservation Authorities, Municipalities, or the Province of Ontario
Protects wildlife and Species at Risk	Potential impacts to wildlife (including Species at Risk) within the site location and construction zone. The implementation must not affect the function of habitat for locally significant wildlife, including endangered or threatened species. The habitat includes nesting sites, hibernation areas, foraging areas, and areas of wildlife travel.
Minimizes climate change impacts	Use of technology and best practices, where applicable, to minimize climate change impacts and reduce greenhouse gas contributions. This includes consideration during the construction process, day-to-day operations, and future maintenance requirements.

Criteria	Definition
Social / Cultural Considerations	
Minimizes impacts to residents	Minimize short and long-term impacts to existing and / or future residents including noise / dust / vibration, traffic, and sightlines.
Minimizes impact to businesses	Minimize short and long-term impacts to existing and / or future businesses including noise / dust / vibration, traffic, and sightlines. This includes potential future disruptions due to required maintenance.
Manages and minimizes construction impacts	Potential impacts to existing built-up areas (residents, businesses) due to construction activities, including creating noise / dust / vibrations, traffic, and traffic flow, temporarily limiting access to properties, or other. This also includes identifying needs to alter timing and scope of the construction practices to minimize impacts.
Protects cultural heritage features	Potential impacts to a structure, property, district, feature, or landscape that has been previously identified to be of cultural heritage value or interest. Impacts may be deemed as temporary (i.e. site access) or permanent (i.e. altering the existing conditions).
Protects archaeological features and Indigenous interests	Potential impacts to areas previously determined to have high archeological potential, moderate / unknown archeological potential, or low / no archeological potential. Preserve Indigenous use of land and natural resources, protect cultural environment and archaeological resources, and minimize impact to Indigenous economy and way of life.
Financial Viability	
Low lifecycle cost, including capital and operating & maintenance	Minimize the lifecycle cost of new infrastructure. This includes capital, operating, and maintenance costs over a 50-year period.

Scores on a scale of 0 to 4 were provided for each alternative under all criteria according to scoring definition below.

0) Solution presents permanent negative impacts and / or presents significant technical challenges;
1) Solution presents temporary negative impact and / or presents major technical challenges;
2) Solution presents low or neutral impacts after mitigation and / or some technical challenges;
3) Solution presents no adverse impacts and has no substantial technical challenges; and
4) Solution presents ideal conditions and / or generates beneficial impacts.

Following the independent evaluation of each individual criteria, a consolidated score was calculated for each of the four primary categories (Technical Feasibility, Natural Environmental Considerations, Social / Cultural Considerations, and Financial Viability). A total score out of 100 was calculated for each alternative using equal category weighting (25 points per category).

8. Development of Alternatives

The Project Team identified seven (7) alternative solutions, which were categorized by Highway 403 crossing location. **Table 8-1** and **Figure 8-1** present the long list of alternatives, which are also summarized in **Section 8.1**.

8.1. Long List of Alternatives

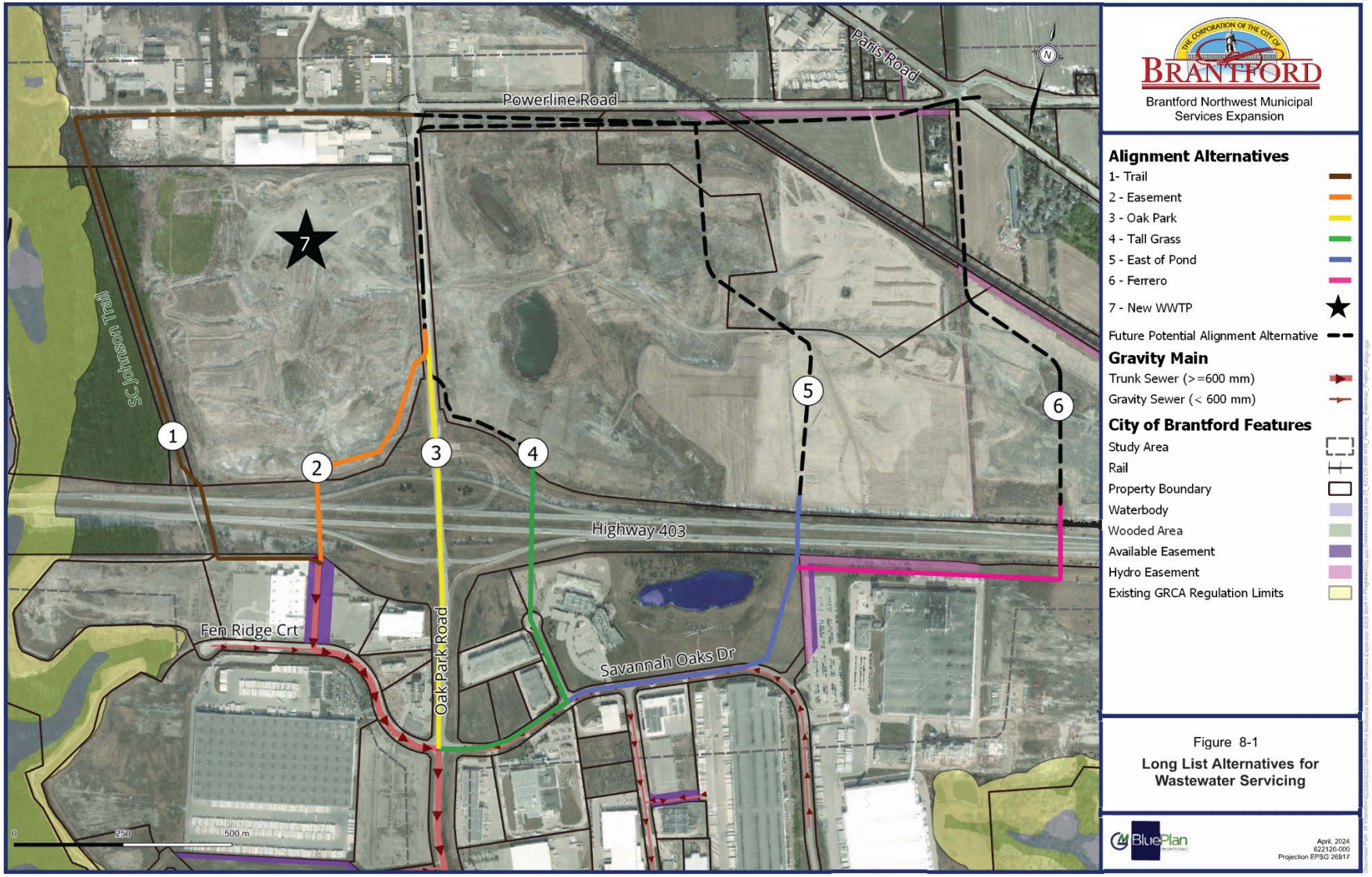
- **Alternative 1 – SC Johnson Trail**: Connects to the existing trunk on Fen Ridge Court and crosses Highway 403 near the pedestrian bridge crossing, utilizes the SC Johnson Trail to the north, then travels east until the Powerline and Oak Park Road intersection.
- **Alternative 2 – Existing Easement**: Connects to the existing trunk on Fen Ridge Court and crosses Highway 403 immediately west of the Oak Park Road interchange, travels northwards along the southeastern edge of 473 Oak Park Road, terminates approximately 650 m south of Powerline Road. Alternative 3 – Oak Park Road: Connects to the existing trunk sewer on Oak Park Road, and travels immediately north (within and utilizes the Oak Park Road ROW), crossing Highway 403 through the Oak Park Road interchange, terminating approximately 650 m south of Powerline Road.
- **Alternative 3 – Oak Park Road**: Connects to the trunk sewer on Oak Park Road and utilizes the Oak Park ROW, crossing Highway 403 through the Oak Park Road interchange.
- **Alternative 4 – Tall Grass Court**: Connects to the existing trunk sewer on Oak Park Road, and travels easterly along Savannah Oaks Drive, then heads north on Tallgrass Court, before crossing Highway 403 to the immediate east of the Oak Park Road interchange, before terminating immediately on the north side of the interchange.
- **Alternative 5 – East of Pond**: Connects to the existing trunk sewer on Oak Park Road, and travels easterly along Savannah Oaks Drive, then heads north and crosses Highway 403 immediately east of the existing stormwater management pond on Savannah Oaks Drive, before terminating immediately on the north side of the highway.
- **Alternative 6 – East of Ferrero**: Connects to the existing trunk sewer on Oak Park Road, and travels easterly along Savannah Oaks Drive, before heading north along the un-opened road allowance on the western edge of the Ferrero Canada property. It then travels another ~600 m east before crossing Highway 403 and terminating immediately north of the highway.
- **Alternative 7 – New Wastewater Treatment Plant (WWTP)**: New WWTP north of Highway 403 to service north Brantford.
- **Alternative 8 – Do Nothing**: Maintain existing conditions, with no changes or improvements to current operations.

Table 8-1. Evaluation Criteria Opportunities/Challenges

	Opportunities	Challenges
Alternative 1 – SC Johnson Trail	• Alignment outside limits of Highway 403 Interchange • Potential conflict with existing pedestrian bridge • Utilizes historical rail corridor – help to minimize transportation and business impact but increases disruption to public (loss of trail during construction) • Opportunity to provide connection to County of Brant Paris system • Moderately aligns with current site plan north of Highway 403; increase length of internal infrastructure to support connection at the southwest	• Requires additional trunk sewer and watermain construction on Fen Ridge Court – Ability to minimize disruption to existing road right-of-way • Causes minimal disruption to existing road right-of-way on Oak Park Rd and moderate disruption to Powerline Rd • Proximity to environmental features may require additional mitigation • Portion of the alignment within Brant County along Powerline Road
Alternative 2 – Existing Easement	• Aligns with existing easement and trunk infrastructure that was anticipated to be used for Highway 403 crossing • Generally, avoids environmental features • Opportunity to provide connection to County of Brant Paris water/wastewater systems • Aligns with current site plan north of Highway 403; ability to provide internal servicing	• Alignment within limits of Highway 403 Interchange; however, avoids major structural elements. Additional crossing depth may help to mitigate MTO concerns. Will require additional discussions with MTO • Causes moderate disruption to existing road right-of-way on Oak Park Rd and Powerline Rd
Alternative 3 – Oak Park Road	• Shortest potential alignment • Generally, avoids environmental features • Opportunity to provide connection to County of Brant Paris water/wastewater systems • Aligns with current site plan north of Highway 403; ability to provide internal servicing	• Alignment fully within limits of Highway 403 Interchange • Fully within City ROWs • Abandoning of trunk infrastructure on Fen Ridge Court • Causes significant disruption to existing road right-of-way on Oak Park Rd and Powerline Rd
Alternative 4 – Tall Grass Court	• Opportunity to provide connection to County of Brant Paris water/wastewater systems • Generally, avoids environmental features • Aligns with current site plan north of Highway 403; ability to provide internal servicing	• Alignment within limits of Highway 403 Interchange • Causes moderate disruption to existing road right-of-way on Oak Park Rd and Powerline Rd • Abandoning of trunk infrastructure on Fen Ridge Court • Requires additional trunk sewer and watermain construction on Savannah Oaks Dr

	Opportunities	**Challenges**
Alternative 5 – East of Pond	• Alignment outside limits of Highway 403 Interchange • Avoids disruption to existing road right-of-way on Oak Park Rd and Powerline Rd • Generally, avoids environmental features • Moderately aligns with current site plan north of Highway 403; ability to provide internal servicing at an increased depth	• Abandoning of trunk infrastructure on Fen Ridge Court • Requires additional trunk sewer and watermain construction on Savannah Oaks Dr • Limits Opportunity to provide connection to County of Brant Paris water/wastewater systems
Alternative 6 – East of Ferrero	• Alignment outside limits of Highway 403 Interchange • Avoids disruption to existing road right-of-way on Oak Park Rd and Powerline Rd • Generally, avoids environmental features	• Abandoning of trunk infrastructure on Fen Ridge Court • Requires additional trunk sewer and watermain construction on Savannah Oaks Dr • Additional servicing within site may be required due to distance from properties and extreme depth of infrastructure • Limits Opportunity to provide connection to County of Brant Paris water/wastewater systems • Requires additional coordination with several property owners north of Highway 403
Alternative 7 – New Wastewater Treatment Plant (WWTP)	• Does not require a crossing of Highway 403 • Avoids disruption to existing road right-of-way on Oak Park Rd and Powerline Rd • Opportunity to provide connection to County of Brant Paris water/ wastewater systems	• Requires a new outfall immediately upstream of the City's WTP and within the Source Water Protection Area; requires enhanced level of treatment • Requires additional coordination with several property owners north of Highway 403 • Substantial land acquisition required, taking away from Developer opportunities • Highway 403 crossing is still required for watermain
Alternative 8 – Do Nothing	• Avoids disruption to environmental features • Does not interfere with Highway 403 Interchange • Avoids disruption to existing road right-of-way on Oak Park Rd and Powerline Rd	• Does not provide servicing to property owners north of Highway 403 • No opportunity to provide connection to County of Brant Paris water/wastewater systems

Figure 8-1. Long List of Alternatives



8.2. Long List Screening

GEI screened the long list of alternatives according to the screening methodology outlined in **Section 7** and the opportunities and challenges identified in **Section 8.1**. **Table 8.2** summarizes the screening results for each alternative and criterion, defined using the following symbols:

- Meets Criteria: (Y);
- Additional investigation or mitigation required: (A); and
- Does not meet criteria: (N).

Table 8-2. Long List of Alternatives Screening Results

Screening Criteria	1 – Trail	2 – Easement	3 – Oak Park	4 – Tall Grass	5 – East of Pond	6 – East of Ferrero	7 – New WWTP	8 – Do Nothing
Feasibility of Highway 403 crossing	(Y)	(A)	(N)	(N)	(Y)	(Y)	(A)	(Y)
Adequately supports external servicing	(Y)	(Y)	(Y)	(Y)	(A)	(A)	(Y)	(N)
Minimizes property and easement requirements	(A)	(Y)	(Y)	(Y)	(A)	(N)	(N)	(Y)
Feasibility of connection to existing trunk infrastructure	(Y)	(Y)	(Y)	(A)	(A)	(N)	(Y)	(Y)
Minimizes construction impacts	(Y)	(Y)	(N)	(A)	(A)	(A)	(N)	(Y)
Minimizes environmental impacts	(A)	(Y)	(Y)	(Y)	(A)	(A)	(N)	(Y)
Supports internal servicing	(A)	(Y)	(Y)	(Y)	(Y)	(N)	(A)	(N)
Limits disruption to external infrastructure	(A)	(A)	(A)	(A)	(Y)	(Y)	(N)	(Y)
Carried forward to short list?	**Yes**	**Yes**	**No**	**No**	**Yes**	**No**	**No**	**Yes**

Alternatives 1, 2, 5, and 8 ('do nothing') were carried forward following the long list screening. These are further described and evaluated in **Section 9**.

Alternative 3 was not carried forward due to it being located entirely within the Oak Park Road Highway 403 interchange. Due to its location, the feasibility of crossing Highway 403 in this position is limited, and there would be significant traffic impacts along Oak Park Road during construction.

Alternative 4 was also not carried forward, due to its location within the Oak Park Road Highway 403 interchange. Similarly to Alternative 3, it poses significant constraints due to construction and feasibility of the crossing.

Alternative 6 was also not carried forward, due to the extensive easements required and additional distance to be covered. For this alternative, easements would be required along both the west and north sides of the Ferrero Canada property. This alternative is also approximately 4934.4 m long, as compared to the others which are from 593.7 to 3968.3 m in length.

Alternative 7 was screened out as a new outfall would be required immediately upstream of the City's WTP and within the Source Water Protection Area, requiring a substantially enhanced level of treatment at the new WWTP. A new WWTP would require substantially more land acquisition, taking away from Developer lands. A Highway 403 crossing would also still be required for the trunk watermain.

9. Evaluation of Alternatives

From the long list of alternatives, the Project Team carried forward four (4) servicing options: Alternatives 1, 2, 5, and 8 (do-nothing) (**Figure 9-1**). These alternatives were considered part of the short-list, and GEI subsequently completed a detailed evaluation of each according to the evaluation methodology outlined in **Section 7**.

9.1. Short List of Alternatives Overview

The following sections provide an overview of the four shortlisted alternatives (**Figure 9-1**), including alternative maps and profiles that highlight the constructability features of each alignment, including tunnelling locations, depth of sewer, and general alignment. The evaluation of these dashed lines is not included as part of this Project File Report.

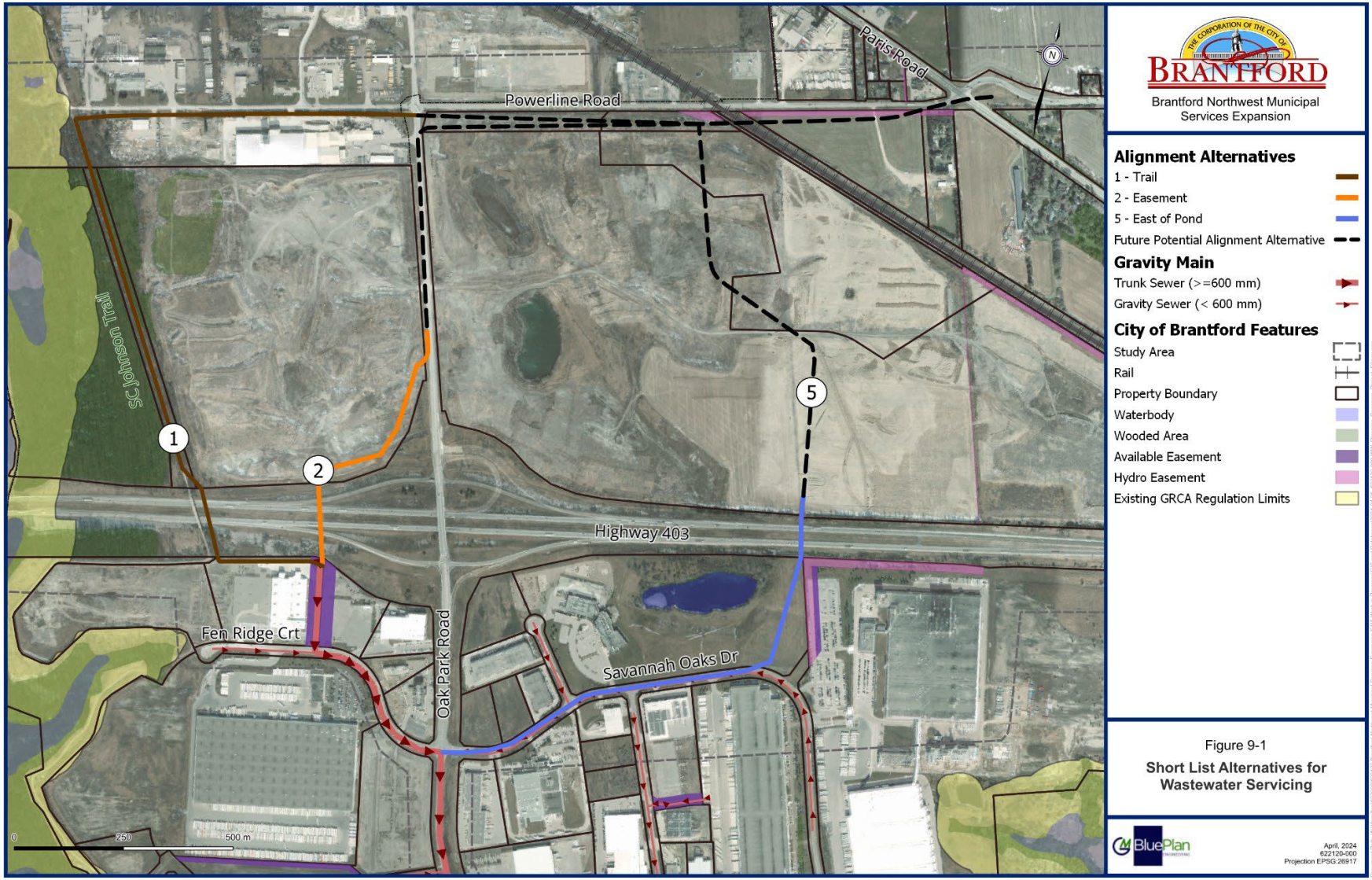
Table 9-1 provides an overview of the key physical and technical differentiators between each of the short-list alternatives. Note, the values provided in **Table 9-1** (i.e. for total length, shaft locations, etc.) also include the future Powerline Road segment.

Table 9-1. Overview of Key Alternatives Differentiators

	Alternative 1 – SC Johnson Trail	**Alternative 2 – Existing Easement**	**Alternative 5 – East of Pond**	**Alternative 8 – Do Nothing**
Total Length (m)[1]	3,400	2,450	2,830	0
Tunneled Length (m)[1,2]	3,400	2,450	2,830	0
Total Number of Shafts	7	6	5	0
Easement / Land acquisition Requirements (m)	3,215	1,760	2,035	0
Impacted Archaeological / Cultural Heritage Sites	1 Built Heritage Resource 1 Canadian Heritage River (Grand River) 1 Cultural Heritage Landscape (CN Rail)	1 Cultural Heritage Landscape (CN Rail)	1 Cultural Heritage Landscape (CN Rail)	None
Approximate Impacted Natural Heritage Area (m^2)	57,000	8,000	20,000	0
Construction Cost	$42.4 M	$30.5 M	$35.3 M	$0

1: Total length is measured from the trunk connection south of Highway 403 to Powerline Road & Paris Road intersection
2: Actual total length and tunneled length will be confirmed during detailed design

Figure 9-1. Short List of Alternatives



9.1.1. Alternative 1 – SC Johnson Trail

Alternative 1 follows the general pathway of the existing SC Johnson Trail. The proposed profile and map of the route are shown in **Figure 9-2** and **Figure 9-3** respectively. This proposed alignment makes use of the City's existing easement on Fen Ridge Court, then traverses west along the MTO property boundary to the opposite of the SC Johnson Trail, maintaining a 20 m distance from the SC Johnson Trail box culvert structures and pedestrian bridge crossing. The alignment then follows the SC Johnson Trail to Powerline Road and then east to Oak Park Road. The sewer will terminate at the intersection of Powerline and Oak Park Road, where it will connect into the proposed Powerline Road watermain. The proposed Powerline Road sewer trunk will be further discussed in the upcoming Powerline Sewer Trunk Project File. This alignment requires a crossing a tunnel crossing under Highway 403. Based on geotechnical and hydrogeological studies to date, for the 403 crossing, there are no apparent concerns with the feasibility of horizontal directional drilling (HDD) or jack and bore installation methods and as long as the vertical alignment remains above the water table, dewatering at launching and receiving locations are unlikely to be required.

Alternative 1 is the longest alignment at 3,400 m. Due to the route length, construction time is increased. In addition, due to the extents of tunneling required for the sanitary sewer, phasing is likely very difficult to achieve.

Due to the 5 m depth below Highway 403 required by MTO and the depth of sanitary sewer at this location, a siphon will be required for the Oak Park Road Trunk Sewer. South of Highway 403, the minimum 14 m setback from the MTO boundary is difficult to achieve as the crossing location is in close proximity to adjacent buildings and the crossing must also maintain a minimum of 20 m from the pedestrian bridge. This creates a very constrained work area south of Highway 403.

North of Highway 403, the route follows the SC Johnson Trail, which is within GRCA-owned lands. The lands adjacent to the trail are naturalized and includes consist of an lowland forest community, with some areas of poor-quality meadow. The tunnel shaft and staging area north of Highway 403, as well as the open cut construction of the trunk sewer will require tree clearing along the alignment to accommodate construction and work areas. The alignment is adjacent to the Grand River, which is designated as a Canadian Heritage River; however, given the distance from the river, disturbance can be prevented. This alternative is also within an area of cultural significance and archaeological potential.

This alternative significantly impacts residents using the SC Johnson Trail, which would require temporary closure during construction as well as tree clearing for open cut construction. There is also impact on businesses along Fen Ridge Court during construction.

While this alternative provides an opportunity to connect to County of Brant infrastructure, it does not align with the Developer's servicing strategy north of Highway 403. The northwesternmost portion of the alignment, located along Powerline Road is also within the County of Brant, and would require easement and/or permit from the County to construct and maintain the infrastructure. The alignment along Powerline Road is also in proximity to a designated Built Heritage Resource. Alternative 1 also has the longest segment in proximity to the significant hydro corridor on Powerline Road compared to the other shortlisted alternatives.

Generally, the alignment on private properties or within limited access areas increases complexity for future operating and maintenance activities. It also increases the total easements required.

Using a unit cost of $12,460/m for the length of tunneled sewer, a high-level estimate was calculated at a total cost estimate of $47.4 M. Unit costs are based on typical component costs using historical tender and construction information.

Figure 9-2. Profile of Alternative 1 - SC Johnson Trail

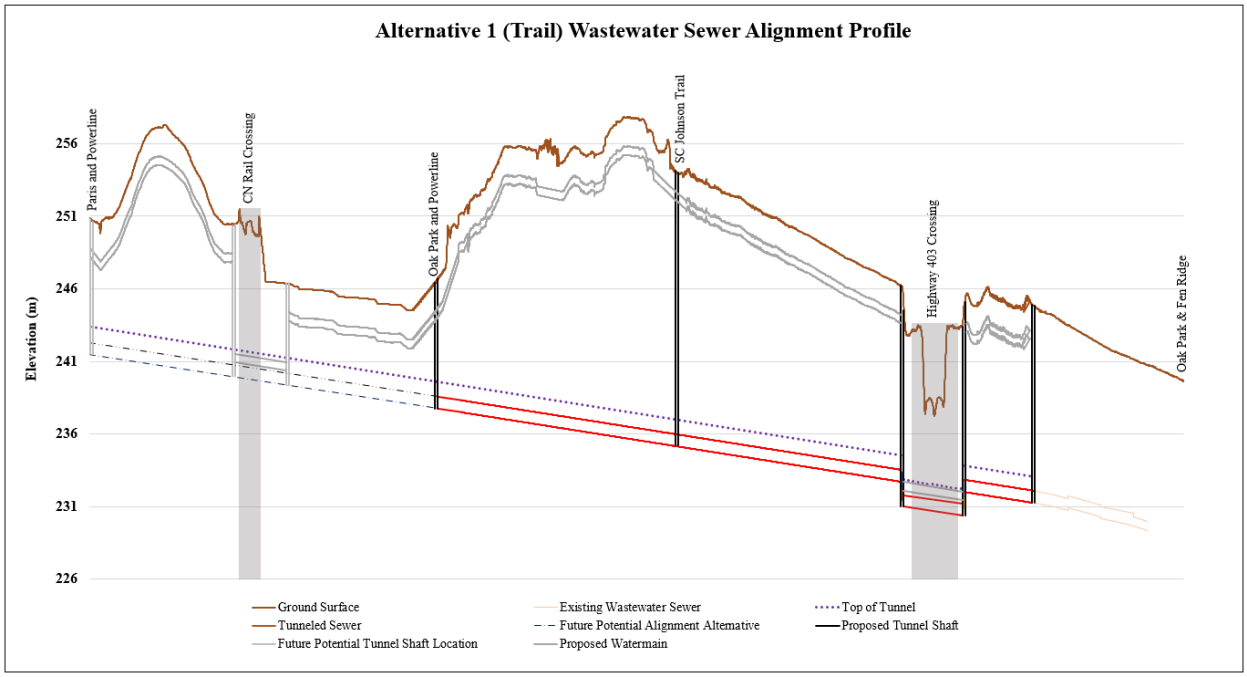
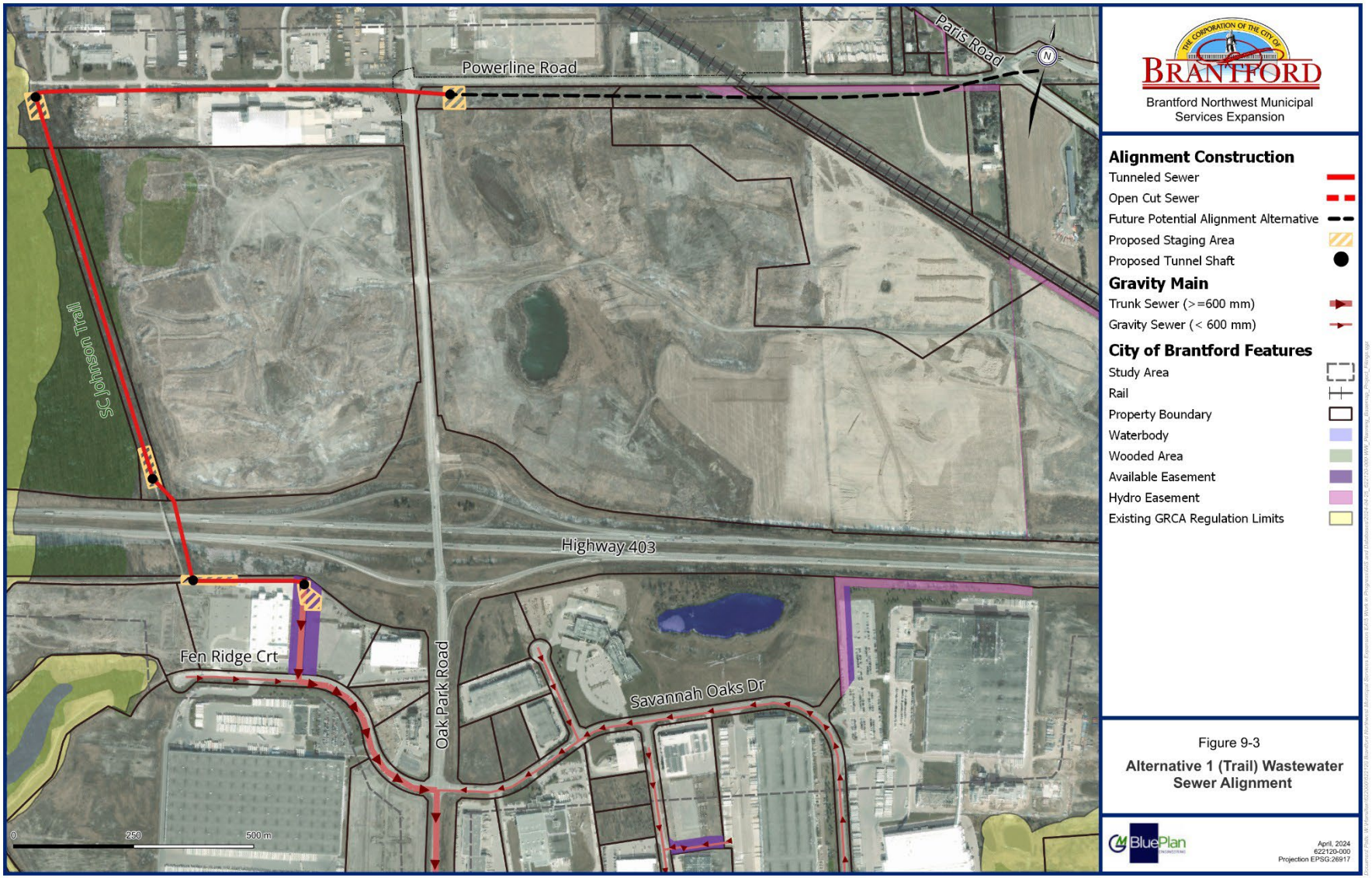


Figure 9-3 Alternative 1 (Trail) Alignment Map



9.1.2. Alternative 2 – Existing Easement

The proposed Alternative 2 alignment makes use of the City's existing easement on Fen Ridge Court and crosses Highway 403 from the end of that easement. The alignment then follows the property boundary to Oak Park Road. Alternative 2 terminates approximately 650 m south of Powerline Road, where it will connect into the proposed Powerline Road trunk sewer (the alignment of which will be discussed further in the upcoming Powerline Road Trunk Sewer Project File Report) This alignment requires a tunnel crossing under Highway 403. It is the shortest alignment at 2,450 m. Construction phasing is likely achievable for this alignment.

This alternative provides an opportunity for future connections to County of Brant infrastructure and also aligns with the developer's servicing strategy north of Highway 403.

The sewer will be installed via tunneling under Highway 403 in accordance with MTO requirements and approval. MTO is currently reviewing the preferred alternative and gravity sewer under Highway 403. The gravity sewer will require less than 5 metres of cover under the highway ditches to align with the existing downstream sewer invert. Additional work within MTO lands may be required to protect the ditches from impact of the tunnelling at cover of less than 5 metres of depth – or MTO may request consideration for alternative works to ensure the existing corridor as well as any planned upgrades to Highway 403 are adequately protected. MTO has approved the plan alignment of the wastewater crossing and it is anticipated that works to protect against shallow cover can be refined with MTO as part of the conceptual design and detailed design assignments.

The alignment is predominantly located within the Oak Park Road interchange footprint but is able to achieve the required 14 m setback from the MTO ROW for shaft locations and staging areas.

This alternative generally follows road ROWs, except for the portion within Developer's lands between north of Highway 403 and Oak Park Road. Therefore, the total easement and property acquisition requirements are minimal compared to the other shortlisted alternatives.

The alignment is located primarily within the built-up areas. Therefore, it has the lowest impact to environmental features. and ecological surveys have confirmed there is no SAR habitat present along this alignment. Lastly, this alternative is not located within an area of cultural significance or archaeological potential.

During construction, this Alternative will require traffic plans and construction staging which will moderately impact businesses along Fen Ridge Court.

Using a unit cost of $12,460/m for the length of tunneled sewer, a high level estimate was calculated at a total cost estimate of $30.5 M. Unit costs are based on typical component costs using historical tender and construction information.

Figure 9-4. Profile of Alternative 2 – Existing Easement

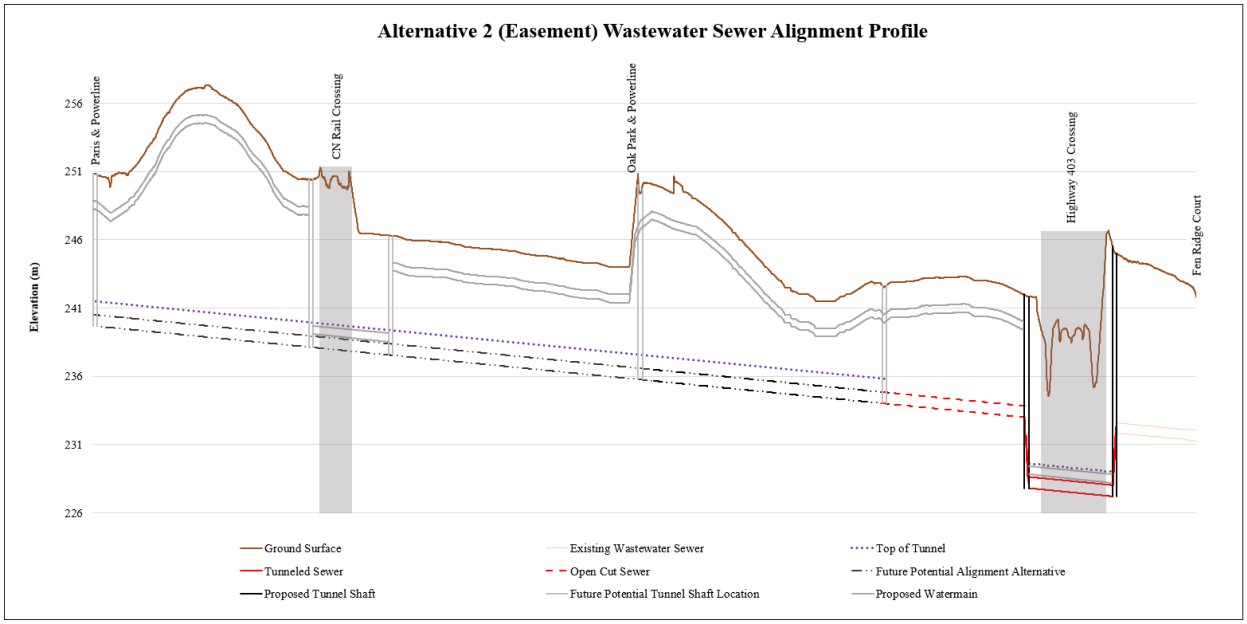
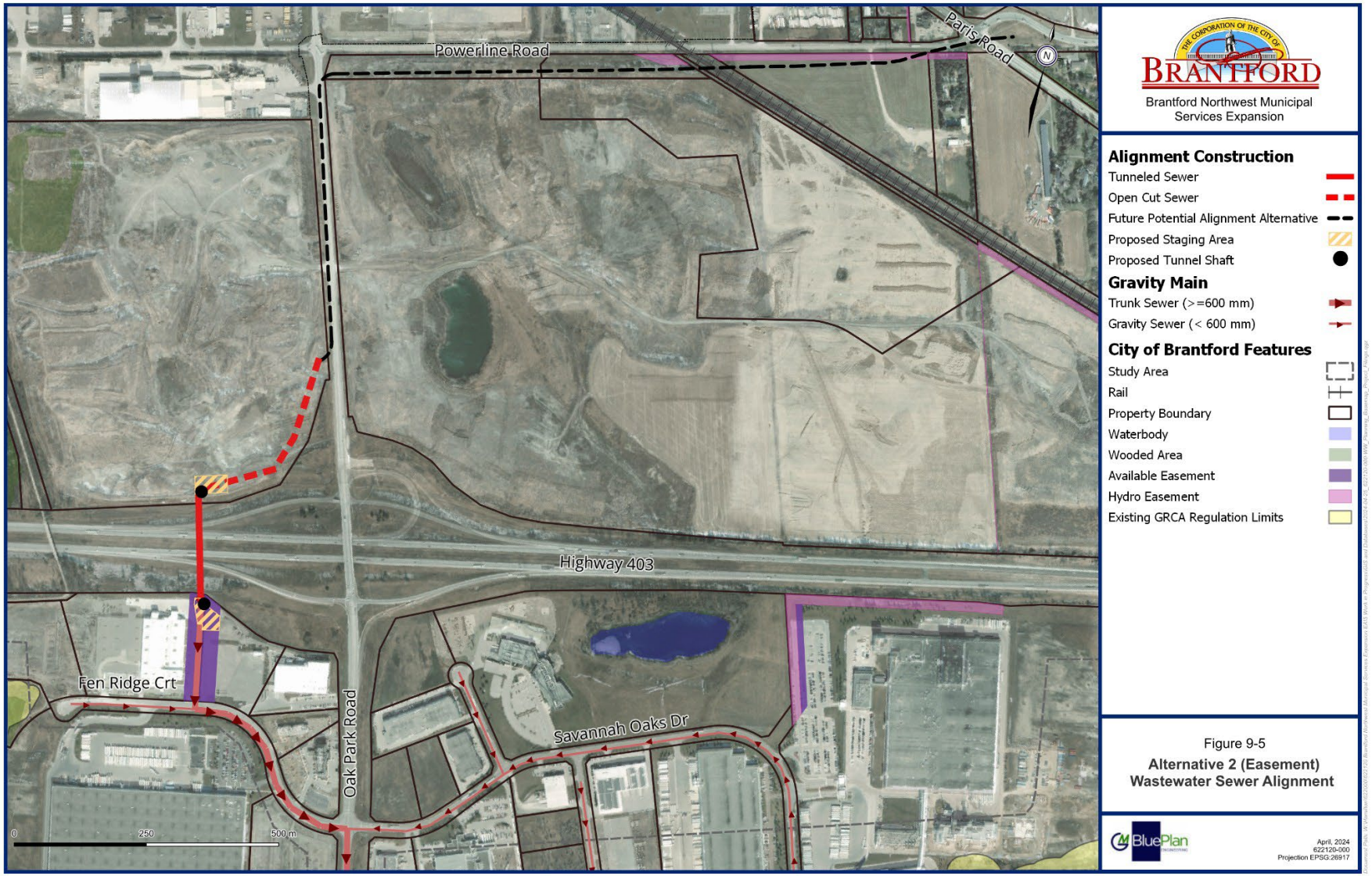


Figure 9-5. Alternative 2 (Easement) Alignment Map



9.1.3. Alternative 5 - East of Pond

Unlike the other short-listed alternatives, the Alternative 5 alignment does not make use of the City's existing easement on Fen Ridge Court; rather, it connects with the existing trunk infrastructure at the intersection of Oak Park Road and Fen Ridge Court. The alignment then traverses east along Savannah Oaks Drive before turning north toward the Highway 403 crossing. It crosses Highway 403 east of the pond and west of the parking lot off Ferrero Boulevard. The alignment beyond the Highway 403 crossing will be confirmed in the Powerline Road Trunk Sewer Project File, but the potential alignment shown in the map and profile generally follows a proposed site plan for the properties (see **Figures 9-6** and **9-7**). This alignment requires tunneling under Highway 403.

Based on geotechnical and hydrogeological studies to-date, for the 403 crossing, there are no apparent concerns with the feasibility of horizontal directional drilling (HDD) or jack and bore installation methods and as long as the vertical alignment remains above the water table, dewatering at launching and receiving locations are unlikely to be required.

The full alignment is 2,830 m. Construction phasing is likely not possible for this alignment due to the significant length of tunneling required.

This alternative is able to achieve the required 14 m MTO ROW setback and avoids the need for a siphon under Highway 403 due to the increased sewer depth. However, it presents significant impacts during construction with a closure of Oak Park Road and significant construction along Savannah Oaks Drive. These closures cause disruption to residents and businesses using these roads.

This alternative does not align with the existing trunk infrastructure as it must connect to the Oak Park Road trunk sewer and run parallel to the existing local infrastructure on Savannah Oaks Drive.

The alignment is adjacent to an existing stormwater management pond and cultural meadow community. These areas are anthropogenic in nature and there is limited potential impacts to natural features or SAR. This alternative may require additional pumping due to increased depth which is more energy intensive. This alignment is not located within an area of cultural heritage significance or archeological potential.

The proposed alignment is consistent with the developer's servicing strategy north of Highway 403; however, easements would be required for through the developer's lands. This alternative provides an opportunity to connect to County of Brant infrastructure; however, unlike Alternative 1 and Alternative 2 which would allow for a direct connection, the Alternative 5 alignment requires additional trunk infrastructure through the developer's land and along Oak Park Road, adding additional capital cost.

Using a unit cost of $12,460/m for the length of tunneled sewer, a high level estimate was calculated at a total cost estimate of $35.3 M. Unit costs are based on typical component costs using historical tender and construction information.

Figure 9-6. Profile of Alternative 5 - East of Pond

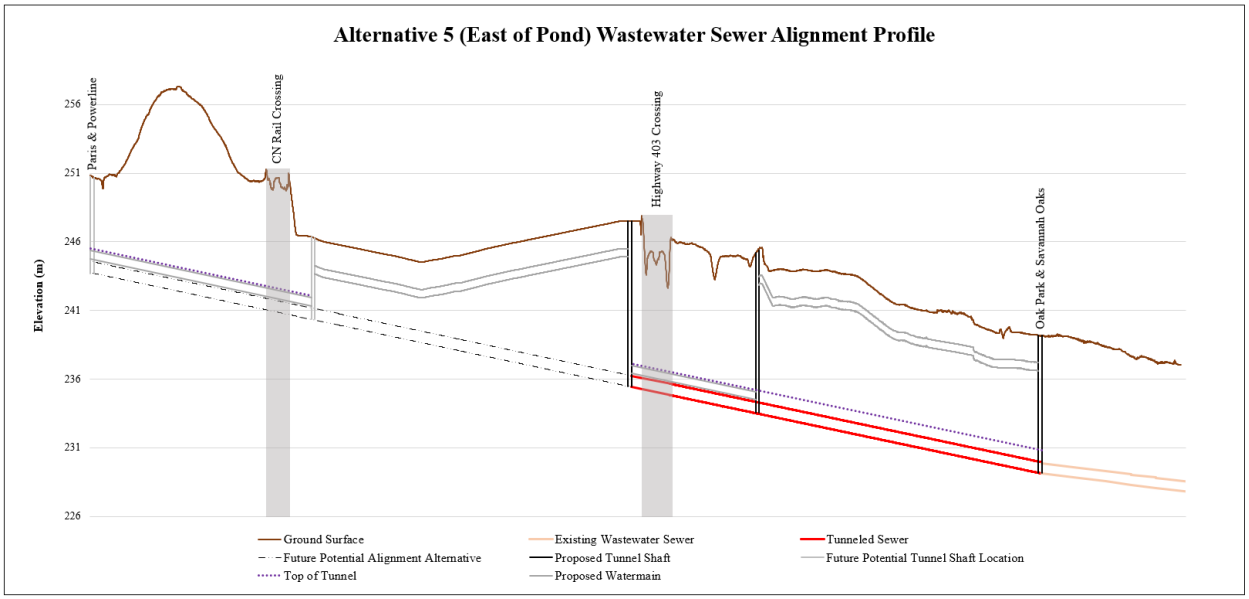
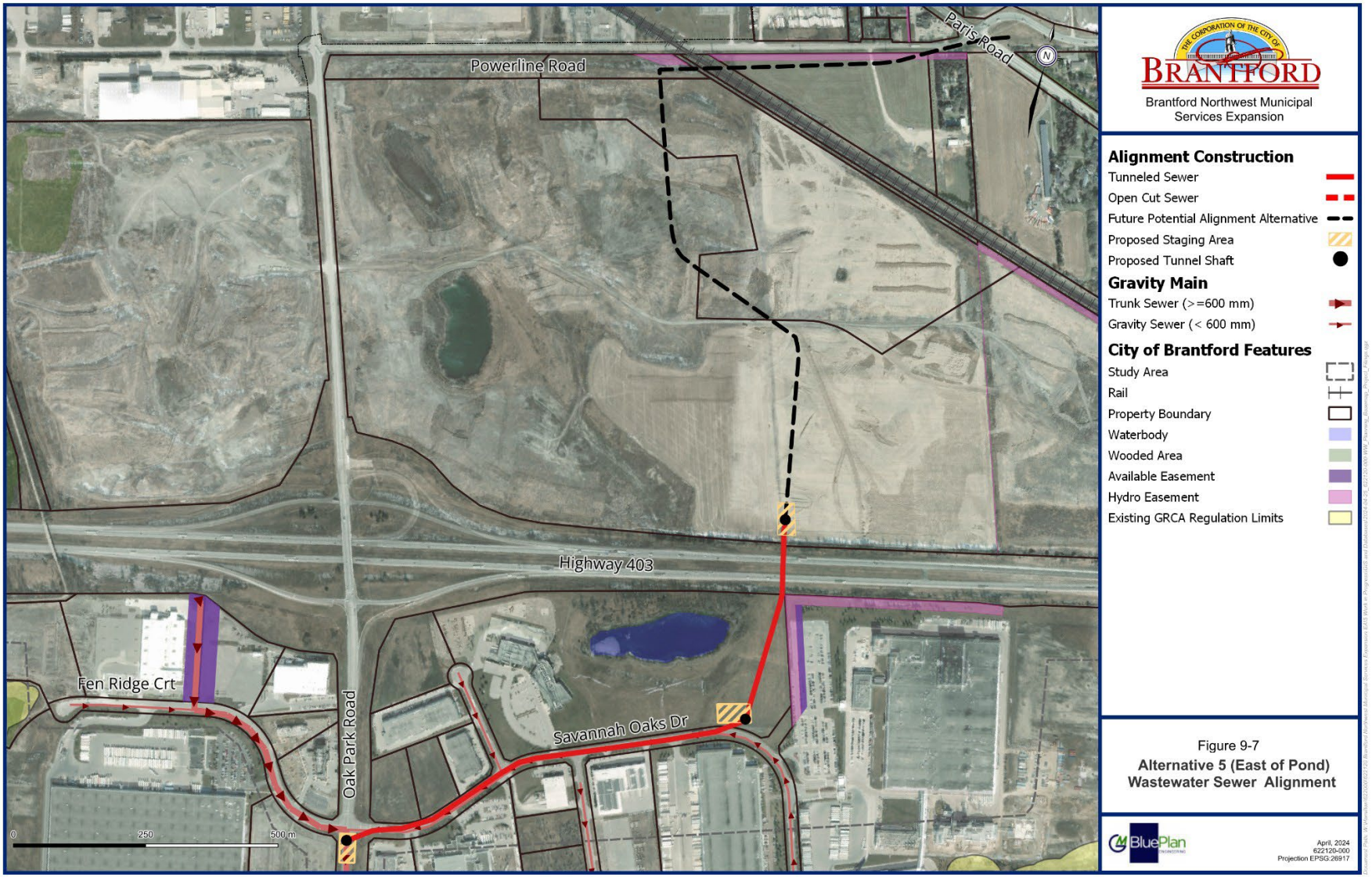


Figure 9-7. Alternative 5 (East of Pond) Alignment Map



9.1.4. Alternative 8 – Do Nothing

Alternative 8 proposes the 'do nothing' approach. This alternative would maintain the existing conditions and propose no changes or improvements to the current infrastructure. This alternative would pose no direct impacts to natural heritage, cultural heritage, or archaeological resources. Indirect impacts to source water protection and climate change could result due to undersized infrastructure, should no infrastructure improvements occur.

9.2. Technical Feasibility

The short list of alternatives was evaluated by the Project Team for technical feasibility as per the criteria described in **Section 7.2**. Key factors influencing the technical evaluation were the proposed alignment locations, ability to meet existing and future servicing needs, property acquisition or easement requirements, and the interaction and potential conflict with existing infrastructure and utilities. **Table 9-2** below summarizes the technical feasibility scoring results.

Of the four alternatives evaluated, Alternative 2 has the highest score for technical feasibility. It meets the technical requirements, utilizes existing infrastructure, aligns with planned system configuration, and includes a future opportunity for connection to County of Brant infrastructure.

Alternative 1 and Alternative 5 have a tie for the lowest score. Alternative 1 is technically challenging due to the significant interaction with the SC Johnson Trail and GRCA and County of Brant lands, including easements required, as well as difficulty in achieving appropriate 14 m setbacks for MTO south of Highway 403. Alternative 5 abandons existing infrastructure within the easement, does not align with the Developer servicing strategy, and requires construction of parallel sewers within the built-up area.

Table 9-2. Technical Feasibility Scoring Summary

Criteria	Comments	1 – SC Johnson Trail	2 – Existing Easement	5 - East of Pond	8 – Do Nothing
Meets existing and future servicing needs	Alternatives 1, 2, and 5 meet the existing and future servicing needs. Alternative 7 only meets the existing servicing needs.	4	4	4	0
Provides opportunity for connection to County of Brant infrastructure	Alternatives 1 and 2 can provide a connection to Paris via a connection at Oak Park Rd and Powerline Rd. Alternative 5 can accommodate a connection to Paris, but would require 650 m of additional sewer along Powerline Road.	4	4	2	0
Aligns with planned system strategy and configuration	Alternative 1 utilizes existing infrastructure within the easement north of Fen Ridge Court but does not align with the Developer servicing strategy and is the longest proposed route alignment. Alternative 2 utilizes the existing infrastructure within Fen Ridge Court easement, aligns with the Developer servicing strategy, and is the shortest possible route alignment. Alternative 5 does not utilize existing infrastructure within the Fen Ridge Court easement, does not align with the Developer servicing strategy, and requires construction parallel to existing sewers along Savannah Oaks Drive. Alternative 8 does not require any new infrastructure, and does not align with the planned system strategy.	2	4	1	0
Provides reliable servicing	Alternative 1 and Alternative 2 require deep tunneling below Highway 403. Alternative 1 and Alternative 5 have potential for more difficult maintenance due to the additional easements required.	2	3	3	0
Minimizes conflict with existing infrastructure and utilities	Alternative 1 is adjacent to the existing pedestrian bridge and SC Johnson Trail. Alternative 2 interacts with hydro infrastructure along Oak Park and Powerline Road. Alternative 5 minimizes the interaction with hydro corridor but significantly conflicts with existing infrastructure on	2	2	2	3

Criteria	Comments	1 – SC Johnson Trail	2 – Existing Easement	5 - East of Pond	8 – Do Nothing
	Savannah Oaks Drive. Alternative 8 has no conflicts with existing infrastructure or utilities.				
Ease of property / land acquisition	Alternative 1 requires easements from the GRCA, County of Brant, and along Fen Ridge Court, and has difficulty achieving the minimum 14 m setback south of Highway 403. Alternative 2 has minimal easement within Developer-owned lands. Alternative 5 requires easements south of Highway 403. Alternative 8 requires no easements.	2	3	3	3
Minimizes and manages construction risk	Alternative 1 is the longest route alignment and requires 7 tunnel shafts, increasing construction time and risk. Phasing is likely not possible due to extents of tunneling. Alternative 2 is the shortest route alignment, which may decrease the time for construction. It requires 6 tunnel shafts Staging may be possible with opportunities for open-cut construction. Alternative 8 has no associated construction risks. Staging is likely not possible for Alternative 1, may not be possible for Alternative 5, and may be possible for Alternative 2.	1	3	2	3
Total Score		17	23	17	9
Weighted Score		**15.2**	**20.5**	**15.2**	**8**

9.3. Natural Environmental Considerations

The short-list of alternatives was evaluated by the Project Team for natural environmental impacts, as per the criteria described in **Section 7.2**. Key factors influencing the natural environment evaluation were the protection of environmental and natural heritage features, the protection of wildlife and species at risk, and the minimization of climate change impacts.

A desktop Natural Heritage Study and a technical memorandum was completed with the results described in **Section 5.3**. Additionally, a Climate Change Impact Report was also completed, with those results found in **Section 5.8**. **Table 9-3** below summarizes the environmental considerations scoring results.

Of the four alternatives evaluated, Alternative 2 has the highest score for environmental considerations, as it has minimal to no interaction with natural heritage features or SAR, as construction is located primarily within the built-up areas. Alternative 1 is the lowest scoring due to the necessary removal of a portion of the forest community and associated trees along the SC Johnson Trail. Natural heritage feature removals were calculated based on a conservative assumption that there would be disturbance within 25 m either side of the preferred alignment.

Table 9-3. Natural Environmental Considerations Scoring Summary

Criteria	Comments	1 – SC Johnson Trail	2 - Existing Easement	5 - East of Pond	8 – Do Nothing
Protects environmental and natural heritage features (terrestrial ecosystems)	Alternative 1 results in temporary removal of 47,730 square meters of a lowland forest community and 9,430 square metres of poor-quality meadow. Alternative 2 is primarily within the existing right-of-way for Fen Ridge Court and Oak Park Road, and impacts will be limited to anthropogenic areas and low-quality disturbed meadow/thicket. Alternative 5 results in the removal of 19,790 square metres of meadow surrounding the Ferrero property, with the remainder located within agricultural fields. Alternative 8 has no anticipated impacts.	0	4	3	4
Protects environmental and natural heritage features (surface water and aquatic ecosystems)	Alternative 1 is located approximately 150 m from a Provincially Significant Wetland and approximately 160 m from the Grand River. Alternative 2 has no nearby surface water features. Alternative 5 is located approximately 95 m from a stormwater management pond. Alternatives 1 and 2 are located within an area where the groundwater has a medium intrinsic vulnerability, meanwhile Alternative 5 is located within an area where the groundwater has a high intrinsic vulnerability. Alternative 5 is also located within a Highly Vulnerable Aquifer.	3	4	3	4
Protects wildlife and Species at Risk	As no species at risk or their habitat was noted during field investigations, all alternatives have a low risk of potential affects. However, due to the removal of naturalized features (i.e. a portion of the woodland community), Alternative 1 has a slightly higher risk of impacts. Similarly, Alternative 5 has a slightly higher risk of impacts as work will be conducted in proximity to the existing stormwater management pond	3	4	3	4

Criteria	Comments	1 – SC Johnson Trail	2 - Existing Easement	5 - East of Pond	8 – Do Nothing
Minimizes climate change impacts	The potential for climate change impacts on Alternatives 1, 2, and 5 are low. Alternative 8 has a high potential for impacts due to climate change as it is not proposing any infrastructure improvements. Other best practices for resilience can be integrated in subsequent stages of design or considered through construction and maintenance of the infrastructure.	3	3	3	0
Minimizes impact to features of Indigenous interest	Alternative 1 results in temporary disturbance to lowland forest and meadow that could provide habitat for wildlife; and is located within an area of archaeological potential. (no resources were found during the Stage 2 Archaeological Survey completed as part of the Stormwater Management EA, and will be appended to that PFR.) Alternative 2 is aligned with existing anthropogenic areas, and less naturalized areas that will be disturbed; Alternative 5 is also generally associated with already disturbed area including disturbed meadow and agricultural areas, and no archaeological impact was observed. Alternative 8 has no anticipated impacts.	2	3	3	4
Total Score		11	18	15	16
Weighted Score		**13.5**	**22.5**	**18.75**	**20**

9.4. Social / Cultural Considerations

The short-list of alternatives was evaluated by The Project Team for social and cultural impacts, as per the criteria described in **Section 7.2**. Key factors influencing the social and cultural evaluation were the impacts to residents and business, impacts due to construction (i.e. noise, dust, vibration, etc.), the protection of cultural heritage features and the protection of archaeological features and Indigenous interests.

To support this, a Stage 1 Archeological Assessment and desktop Cultural Heritage Report were completed, with the results described in **Sections 5.4** and **5.4** respectively. **Table 9-4** below summarizes the social and cultural considerations scoring results.

Of the four alternatives evaluated, Alternative 2 has the highest score for social and cultural considerations. Alternative 2 proposes construction within the existing built-up areas and is not located in proximity to areas of cultural heritage significance or areas of archaeological potential. Construction poses a moderate impact to residents and businesses who use Oak Park Road. Alternative 1 has the lowest score as it is located nearby cultural heritage features and is within an area of archaeological potential. It also poses significant impacts to the public who utilize the SC Johnson Trail, which requires closure during construction.

Table 9-4. Social / Cultural Considerations Scoring Summary

Criteria	Comments	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do Nothing
Minimizes impacts to residents	Alternative 1 has significant impact to the public as it requires the closure of the SC Johnson Trail during construction. Alternative 2 has a moderate impact to residents who use Oak Park Road. Alternative 5 has moderate impact to residents who use Savannah Oaks Drive and requires closure of Oak Park Road during construction.	1	2	2	3
Minimizes impacts to businesses	Alternative 1 has a high impact to businesses on Fen Ridge Court during construction. Alternative 2 has a moderate impact to businesses on Fed Ridge Court and those who use Oak Park Road. Alternative 5 has high impact to businesses on Savannah Oaks Drive and requires closure of Oak Park Road during construction.	1	2	2	3
Manages and minimizes construction impacts	Alternative 1 requires the longest distance of open cut construction through naturalized areas. Requires 7 tunnel shafts and staging areas. Alternative 2 requires the shortest distance of open-cut construction, primarily through previously disturbed areas. Requires 6 tunnel shafts and staging areas. Alternative 5 has high impact along Savannah Oaks Drive, limiting access to businesses. Requires 5 tunnel shafts and staging areas.	1	3	2	3
Protects cultural heritage features	Alternative 1 contains naturalized areas along the SC Johnson Trail, which have cultural significance. There is one Built Heritage Resource located within the alignment at Powerline Rd near the SC Johnson Trail, and it is adjacent to the Grand River, a designated Canadian Heritage River. Alternatives 2, 5, and 8 avoid all impacts to cultural heritage features or areas of significance.	1	3	3	3

Criteria	Comments	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do Nothing
Protects archeological features and Indigenous Interests	Alternative 1 is located within an area of archaeological potential; however no resources were found during the Stage 2 Archaeological Survey (this survey was completed as part of the Stormwater Management EA and will be appended to that PFR. Alternatives 2, 5, and 8 are not located within an area of archaeological potential, and no Stage 2 Archaeological Surveys were required.	2	2	3	3
Total Score		6	13	12	15
Weighted Score		**7.5**	**16.25**	**15**	**18.75**

9.5. Financial Viability

The short-list of alternatives was evaluated by the Project Team for financial viability, as per the criteria described in **Section 7.2**. Key factors influencing the financial viability evaluation were capital, operation, and maintenance costs over a period of 50 years. This evaluation was primarily based on the length of new sewer that is required. **Table 9-5** summarizes the financial viability scoring results.

Furthermore, due to constraints from other nearby infrastructure, utilities, and existing buildings or features, Alternative 1 has significant site constraints, which may lead to increased costs for future operation and maintenance. Both Alternatives 2 and 5 have minimal site constraints.

Of the four alternatives evaluated, Alternative 2 has the highest score due to having the shortest alignment length, providing the lowest cost option. Alternative 1 and Alternative 5 tie for lowest score, having longer alignments and presenting higher total potential lifecycle cost.

9.5.1. Construction Cost Considerations

A high-level estimate of the anticipated costs for construction were calculated for each of the alternatives. These costs were based on the total length of tunneled sewer and the total length of open cut sewer anticipated for each of the alternatives. A unit cost of $12,460/m was used for the portion of tunneled sewer, and a unit cost of $3,140/, was used for the portion of open cut sewer. The results of these calculations are shown in the table below.

	Length in meters	**Cost ($)**	**Total**				
	Total		**Tunneled**	**Open Cut**	**Tunneled**	**Open Cut**	
Alternative 1 – SC Johnson Trail	3,400		3,400	n/a	$42,364,000	n/a	$42,364,000
Alternative 2 – Existing Easement	2,450		2,450	n/a	$30,527,000	n/a	$30,527,000
Alternative 5 – East of Pond	2,830		2830	n/a	$35,261,800	n/a	$35,261,800
Alternative 8 – Do Nothing	-		-	-	-	-	-

Table 9-5. Financial Viability Scoring Summary

Criteria	Comments	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do nothing
Minimizes capital costs	Alternative 1 is the longest length and has the most tunnel shafts (7). Alternative 2 has the shortest alignment length and utilizes more open-cut methods but still has 6 tunnel shafts. Alternative 5 has a longer alignment than Alignment 2 but has the fewest tunnel shafts (5) and an opportunity for open-cut construction through the Developer lands.	3	3	2	3
Minimizes operation and maintenance costs over a 50-year period	Alternative 1 has significant site constraints due to nearby infrastructure, utilities, buildings, and features, increasing long-term maintenance costs. Alternative 2 and 5 have lesser site constraints.	1	3	3	3
Total Score		4	6	5	6
Weighted Score		**12.5**	**18.75**	**15.25**	**18.75**

9.6. Evaluation Scoring Summary

Following the evaluation of each of the criteria, in **Section 9.2** through **9.5**, these scores were then added together to form the final evaluation score for each of the four alternatives. Each of the criteria categories: technical feasibility, natural environment, social and cultural, and financial were assigned equal weighting, with a score out of 25 for each. The total possible score for an alternative was 100.

The consolidated scoring results are shown below in Table 9-6, with a summary of the key factors influencing the evaluation in Table 9-7.

Table 9-6. Summary of Evaluation Scoring Results

Category	Criteria	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do nothing
Technical Feasibility	Meets existing and future servicing needs	4	4	4	0
	Provides opportunity for connection to County of Brant	4	4	2	0
	Aligns with planned system strategy and configuration	2	4	1	0
	Provides reliable servicing	2	3	3	0
	Minimizes conflict with existing infrastructure and utilities	2	2	2	3
	Ease of property / land acquisition	2	3	3	3
	Minimizes and manages construction risk	1	3	2	3
Total Score		**17**	**23**	**17**	**9**
Weighted Score		**15.2**	**20.5**	**15.2**	**8**
Environmental Considerations	Protects environmental and natural heritage features (terrestrial ecosystems)	0	4	3	4
	Protects environmental and natural heritage features (surface water and aquatic ecosystems)	3	4	3	4
	Protects wildlife and Species at Risk	3	4	3	4
	Minimizes climate change impacts	3	3	3	0
	Minimizes impacts to features of Indigenous interest	2	3 4	3	4
Total Score		**11**	**18**	**15**	**16**
Weighted Score		**13.75**	**22.5**	**18.75**	**20**
Social / Cultural Considerations	Minimizes impacts to residents	1	2	2	3
	Minimizes impacts to businesses	1	2	2	3
	Manages and minimizes construction impacts	1	3	2	3
	Protects cultural heritage features	1	3	3	3
	Protects archeological features	2	3	3	3

Category	Criteria	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do nothing
Total Score		**6**	**13**	**12**	**15**
Weighted Score		**7.5**	**16.25**	**15**	**18.75**
Financial Feasibility	Minimizes capital cost	3	3	22	3
	Minimizes operation and maintenance costs over a 50-year period	1	3	3	3
Total Score		**44**	**6**	**5**	**6**
Weighted Score		**12.5**	**18.75**	**15.25**	**18.75**
Score Out of 100		**48.9**	**78**	**64.6**	**65.5**
Rank		**4**	**1**	**3**	**2**

Figure 9-8. Evaluation Scoring Results

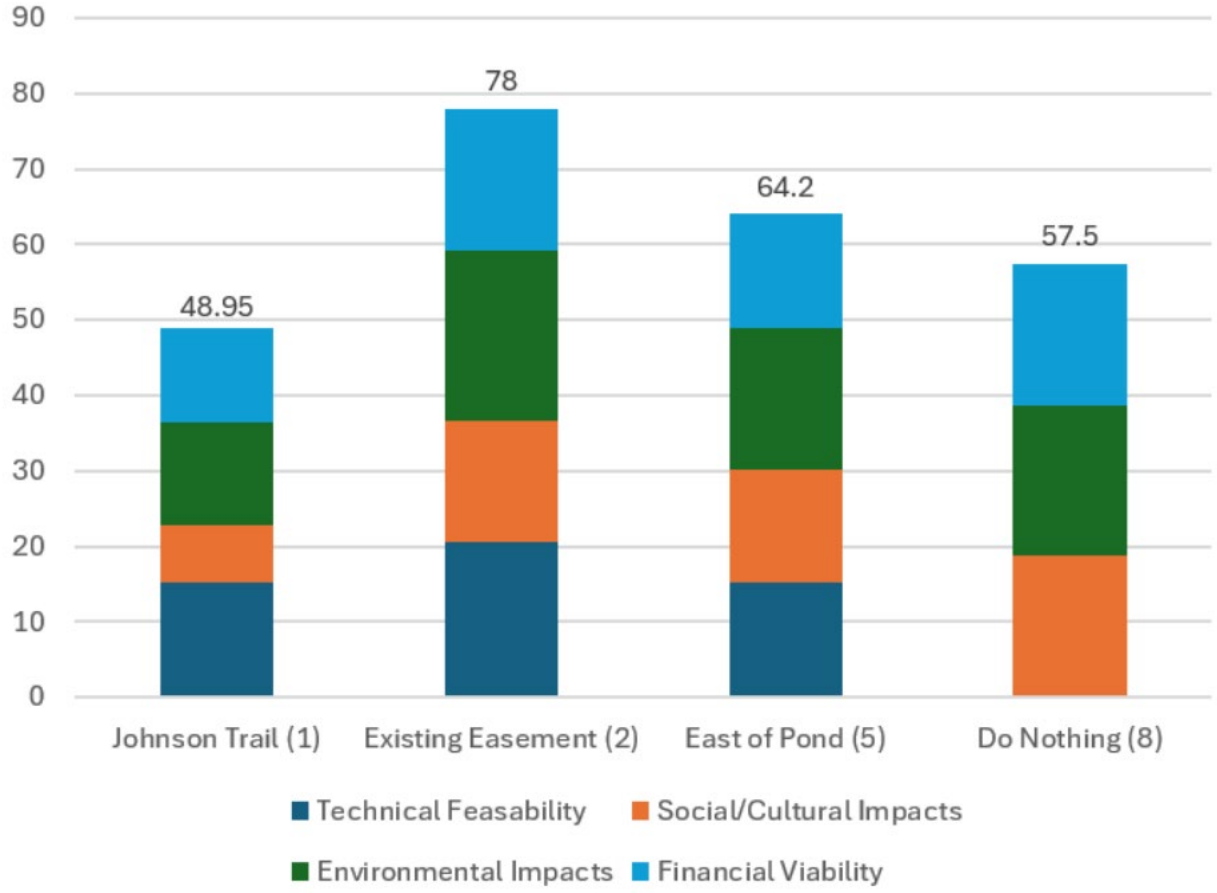


Table 9-7. Summary of Evaluation Results and Key Factors Influencing Evaluation

Evaluation Category	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do nothing
Technical Feasibility	• Meets existing and future servicing needs • Provides opportunity for future connection to County of Brant infrastructure • Does not align with the developer's servicing strategy	• Shortest possible route alignment • Utilizes existing infrastructure • Aligns with the developer's servicing strategy • Provides opportunity for future connection to County of Brant infrastructure	• Does not make use of existing infrastructure on Savannah Oaks Drive • Fewest number of tunnel shafts • Requires construction parallel to existing watermains • Does not align with the developer's servicing strategy	• Does not require any new infrastructure • Does not align with the developer's servicing strategy • Does not provide an opportunity for future connection to County of Brant infrastructure
Environmental Impacts	• Tree clearing required along SC Johnson Trail • Loss of forest habitat and meadow habitat • Located near the Grand River (160 m) and a Provincially Significant Wetland (150 m)	• Not located near any surface water or terrestrial features • No loss of naturalized habitats	• Proximity to an existing stormwater pond on Savannah Oaks Drive • No loss of naturalized habitats	• Does not meet future climate change targets
Social / Cultural Impacts	• Requires the temporary closure of the SC Johnson Trail • Construction within an area of cultural significance (Grand River Area)	• Minimizes impact to businesses along Savannah Oaks Drive • Avoids areas of cultural significance and archaeological potential	• Moderate impacts to businesses along Savannah Oaks Drive • Temporary closure of Oak Park Road • Avoids areas of cultural significance and archaeological potential	• No social or cultural impacts

Evaluation Category	1 – SC Johnson Trail	2 – Existing Easement	5 – East of Pond	8 – Do nothing
Financial Viability	• Moderate cost for construction due to sewer length • Significant costs for maintenance due to inaccessibility and nearby constraints	• Lowest cost for construction due to shortest sewer length • Lower cost for maintenance due to lack of nearby constraints	• Moderate cost for construction due to sewer length • Moderate cost for maintenance due to lesser site constraints	• No associated costs
Evaluation Result	**Not Recommended**	**Preferred Alternative**	**Not Recommended**	**Not Recommended**

9.7. Coordination with Other Projects

The Oak Park Road Trunk Sewer will be constructed simultaneously with the Oak Park Road Trunk Watermain Project and the Oak Park Road Widening Project. These projects will then lead into the Powerline Road Trunk Sewer, Watermain, and Road projects.

As described in **Section 9.5.1** above, some portions of the trunk sewer will require tunneling and some will be open cut. Tunneling is required where the depth of the trunk sewer is great and where it will cross key infrastructure such as Highway 403 and the CN Rail crossing.

Where tunning is required for both the watermain and wastewater sewer, it is anticipated that a shared tunnel will be used with the watermain hung above the wastewater sewer. Where open cut construction is possible for the sewer, the watermain and sewer may share the same trench box during construction and the minimum horizontal spacing will be maintained. These details will be confirmed during the detailed design phase for each project.

9.8. Cumulative Effects

As noted in **Section 1**, the City of Brantford is undertaking seven (7) municipal service EAs in tandem, in part, to ensure there is a comprehensive, integrated approach to the assessment of impacts associated with expanding road, water, wastewater and stormwater services across this growth area. The process has considered both present and future cumulative impacts. In general, **Section 5** includes robust technical studies that have provided comprehensive assessments of the municipal service expansion area as a whole, rather than focusing on proposed alternatives in isolation.

The Oak Park Road Watermain Trunk Project File has been submitted concurrently with the Oak Park Road Sewer Trunk Project File; and there has been an integrated effort to ensure the remaining five (5) MCEAs align with the preferred alternative to mitigate cumulative effects. It is anticipated that the construction of these projects will occur concurrently with a multi service infrastructure approach (i.e., the Oak Park Road trunk watermain and sewer will be built together). As a result, it is anticipated at any specific location within the Study Area, the disturbance magnitude and longevity will be limited.

9.9. Recommended Alternative

Based on the evaluation completed in **Section 9.6**, the recommended alternative is Alternative 2 – Existing Easement. Alternative 2 scored highest within the technical feasibility category (22.5 points). It tied for first place in the financial feasibility category (18.75 points) and received second place in the social and cultural considerations category (16.25). Overall, it received a total score of 78 points, out of 100.

Figure 9-9. Preferred Alternative – Overall Plan View

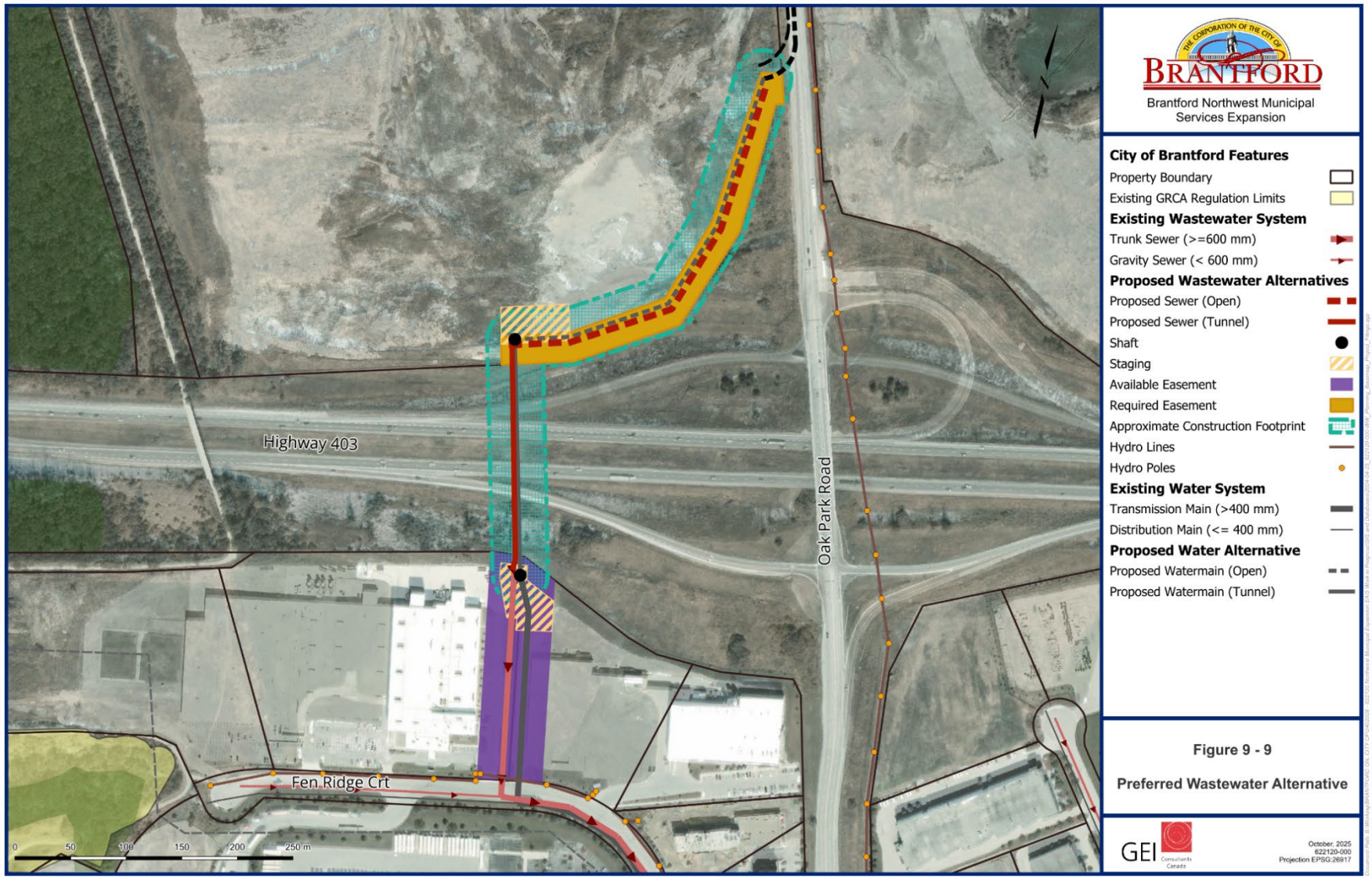
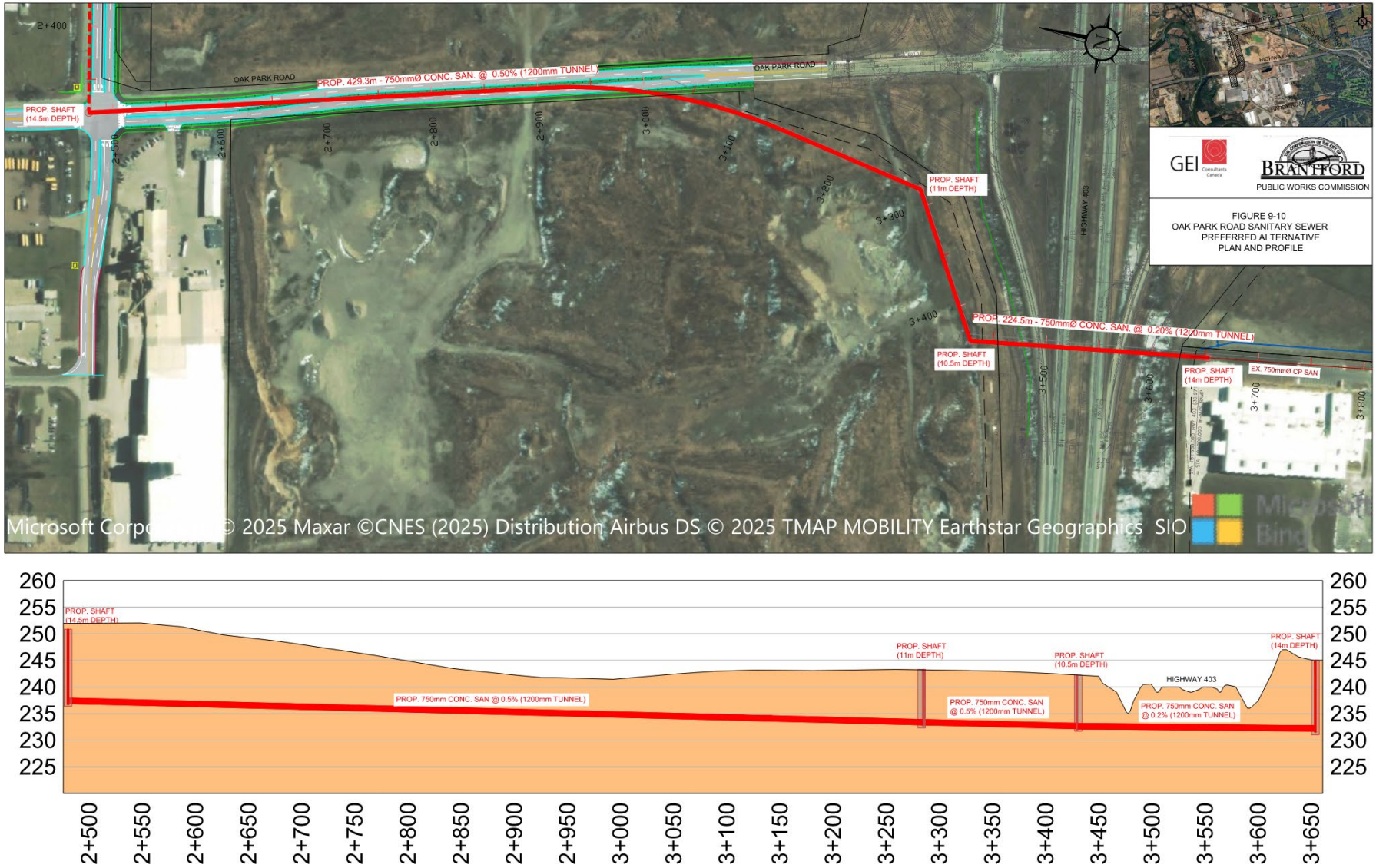


Figure 9-1011. Preferred Alternative – Plan and Profile



10. Mitigation Measures, and Implementation Plan

The following subsections provides an overview of the anticipated impacts of the preferred solution, the recommended mitigation measures, and the implementation plan.

Alternative 2 – Existing Easement () has been chosen as the preferred solution, as it has the highest overall evaluations score. This alternative includes the construction of a new 825 mm trunk sewer from the City's existing easement, crossing Highway 403, following the property boundary to the north and ending on Oak Park Road. The proposed work will be primarily within anthropogenic and previously disturbed areas. The proposed construction footprint for the preferred solution is shown in **Figures 9-9** and **9-10** above.

10.1. Mitigation Measures

There is potential for environmental impacts to occur when constructing all types of infrastructure. As a result, there are mitigation techniques that can be used to offset the impacts construction activities have on the environment. The MCEA process requires that mitigation measures be developed after an understanding of the potential negative impacts are identified.

It is an objective of this project to reduce, prevent and avoid potential adverse impacts and environmental impacts. Additional provisions will be made during the detailed design and construction of the sewer to protect the study area from negative environmental impacts. The following mitigation measures are recommended to be carried forward for implementation during detailed design.

10.1.1. Natural Heritage Features (Terrestrial)

The proposed construction footprint, as shown in **Figures 9-9** and **9-10**, is located predominantly within previously disturbed areas. The Preferred Solution will result in the loss of 0.804 ha of meadow habitat. The following general mitigation measures should be implemented to protect terrestrial natural heritage features:

- Preparation of a tree protection plan to avoid impacts to nearby trees which will be retained;
- Restoration and planting plan, to ensure that areas are reclaimed upon project completion;
- Planting of native species;
- Removal of any vegetation (including tree removal and grubbing) outside of the migratory birds active period (April 1 to August 31);
- Removal of trees and other vegetation during the migratory bats active period (April 1 to September 30); and
- Should any nests be observed, a wildlife biologist will be consulted.

After construction, restore the disturbed areas to existing or better conditions and ensure they are adequately maintained in the long term.

10.1.2. Natural Heritage Features (Aquatic) and Surface Water

The proposed construction footprint, as shown in **Figures 9-9** and **9-10**, is not located near any aquatic or surface water features. Therefore, there are no anticipated direct impacts to these features. Indirect impacts could occur, and therefore construction best management practices are recommended.

10.1.3. Species at Risk

The proposed construction footprint, as shown in **Figures 9-9** and **9-10**, is not located with any habitat for SAR, and no SAR were identified during ecological field investigations. As such, no mitigation measures are required. This is further confirmed in the attached memo dated September 2025 that confirms there was no suitable SAR habitat or observations of SAR within the preferred alternative (**Appendix B)**.

10.1.4. Archaeological Resources

The proposed construction footprint, as shown in **Figures 9-9** and **9-10**, is not located with an area of archaeological potential. As such, no Stage 2 archaeological assessment was completed. Should archaeological resources be identified during ground disturbance activity, ground disturbance activities should be immediately halted and the Archaeology Program Unit of the MCM and identified Indigenous Peoples shall be notified.

10.1.5. Cultural and Built Heritage Features

The proposed construction footprint for the Oak Park Road Trunk Sewer, as shown in **Figures 9-9** and **9-10**, is not located within close proximity to any cultural or built heritage features. The Powerline Road portion of the Trunk Sewer crosses under CHL 4 (the CN Railway), this will be further discussed in the Powerline Trunk Sewer Project File Report.

General mitigation measures that should be considered for the Oak Park Road Trunk Sewer to protect cultural heritage include:

- Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to the identified BHRs and CHLs; and
- Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential BHRs and CHLs.

10.1.6. Climate Change

Climate change is expected to result in warmer temperatures and more frequent and intense storms. Infrastructure projects have the potential to accelerate climate change by increasing greenhouse gas (GHG) emissions as a result of construction and operation. Potential climate mitigation techniques to limit the impacts of new infrastructure on climate change include:

- Decrease in GHG emissions during construction through the selection and delivery of materials (e.g., recycled, or natural building materials that produce less carbon dioxide when manufactured);

- Use heat-resistant building materials where possible and use reflective surfaces to minimize evaporation, protect potable water supply, and reduce the risk of water scarcity;
- Minimize overall footprint and restore natural / grassed areas back to original or enhanced natural conditions, incorporate natural vegetation buffers, prepare tree replacement plans where necessary and/or incorporate nature-based solutions such as green infrastructure where feasible; and
- Carry out construction activities outside of key ecological periods to minimize damage to the natural environment and wildlife habitat (e.g., construction outside breeding bird season and high runoff periods in spring).

The Climate Change Memo (Appendix G) includes other mitigative and adaptive measures for consideration as part of design and/or future capital planning efforts related to infrastructure to help manage the impacts of climate change.

10.1.7. Source Water Protection

The proposed construction footprint for the Oak Park Road Trunk Sewer, as shown in **Figures 9-9** and **9-10**, is located within the Grand River Source Protection Area, a part of the Lake Erie Source Protection Region. It is also located within a vulnerable area, Intake Protection Zone 2, per the Grand River Source Protection Plan - Volume 2, Chapter 15 (GRCA, July 29, 2025).

The alignment is not located within a Wellhead Protection Area (WHPA), Highly Vulnerable Aquifer (HVA), Event Based Area (EBA), or Issue Contributing Area (ICA).

Based on the vulnerable areas applicable to the Study Area and the proposed activities related to the preferred solution there are no significant drinking water threats anticipated. Therefore, it is interpreted that the Source Protection Plan provides no specific requirement to develop mitigation measures or risk management plans in coordination with the local Risk Management Office.

However, it is recommended that certain best practices be followed during construction, including but not necessarily limited to:

- Preparation of a spill management plan, including training for workers that will be or may be involved in spill management;
- Maintenance of spill containment kits on-site;
- Preparation and implementation of a chemical and fuel management plan, including provisions for secondary containment for the storage of any chemicals or fuels on-site; and
- Control mixing of groundwater during construction to limit contamination.

10.1.8. Property/Easement Acquisition

The preferred alternative is located primarily within existing easements and road ROWs. However, there is a portion of the alignment which requires a new easement to be acquired from the existing landowner This easement is located along the northwest corner of Highway 403 and Oak Park Road and shown in **Figures 9-9** and **9-10**. The easement ensures that the watermain and sewer will maintain a 14 m setback from the MTO boundary, and includes the additional space required for open cut construction. It is

anticipated that an approximate area of 9,800 m^2 will be required. As part of the Northwest Municipal Services Expansion Environmental Assessments, consultation with this affected landowner has been conducted. The landowner is in support of the identified easement; however, further consultation and coordination with the property owner will be required as part of the detailed design process.

10.1.9. Best Management Construction Practices

To minimize potential impacts, project risk, and disruptions during construction, the following best practices are recommended:

- Clean, inspect and maintain construction equipment (including trucks);
- Implement surface protection measures to minimize soil compaction;
- Store construction material, excess material, construction debris, and empty containers away from businesses;
- Maintain a distance of 14 m from MTO ROW for all construction and staging activities;
- Use low noise equipment during construction, where possible;
- Restrict working hours for construction, in accordance with local Noise Control By-laws; and
- The site will be returned to pre-construction conditions upon construction completion.

Contractors should be made aware of all proposed mitigation measures and environmental considerations. Mitigation measures should be monitored throughout construction.

10.1.10. Traffic

Construction of the preferred solution will cause minimal and temporary impacts to local traffic along Oak Park Road. A Construction Traffic Management Plan should be provided. The portion of the watermain south of Highway 403 will connect to the trunk sewer within the City's existing easement, with the tunnel shaft location and staging area utilizing the existing easement with a small portion of parking lot as well. The portion of the alignment north of Highway 403 will be within Developer's land, and therefore construction will need to be coordinated with the property owners. If tunneling is required north of the known portion of the alignment on Oak Park Road, the tunnel shaft and staging area will be accommodated within the Developer's lands, generally avoiding disturbance to Oak Park Road.

10.1.11. Ministry of Transportation

The preferred solution is required to cross Highway 403. The sewer will be installed via tunneling under Highway 403 in accordance with MTO requirements and approval. MTO is currently reviewing the preferred alternative and gravity sewer under Highway 403. The gravity sewer will require less than 5 metres of cover under the highway ditches to align with the existing downstream sewer invert. Additional work within MTO lands may be required to protect the ditches from impact of the tunnelling at cover of less than 5 metres of depth – or MTO may request consideration for alternative works to ensure the existing corridor as well as any planned upgrades to Highway 403 are adequately protected. MTO has approved the plan alignment of the wastewater crossing and it is anticipated that works to protect against shallow cover can be refined with MTO as part of the conceptual design and detailed design assignments. A Highway Corridor Management Permit will be required as the work will occur adjacent to a provincial highway (Highway 403). The preferred alternative alignment and design specific to the Highway 403

crossing and construction near the MTO land boundary will require approval from MTO. MTO will also monitor the construction activities.

10.1.12. Utilities

The preferred solution generally avoids existing utilities and infrastructure. There are hydro poles along Oak Park Road; therefore, any proximity to existing hydro infrastructure will be coordinated with the necessary utility (Hydro One or GrandBridge Energy).

10.2. Implementation Plan

10.2.1. Proposed Schedule

The submission of this Oak Park Road Trunk Sewer Project File Report marks the second of seven MCEA submissions. The Notice of Study Completion for the Oak Park Road Trunk Sewer project was first published on July 4, 2024, and revised on July 25, 2024, and was filed after the statutory 30-day review period. Due to feedback received from the SNGR and the MECP, the project team has updated this report in October 2025 and submitted to MECP and SNGR. The Oak Park Road Trunk Watermain Project File Report has also been revised and resubmitted to SNGR and MECP in October 2025. It is also anticipated that the remaining 5 reports will also be filed in December 2025.

Since our initial submission, the City has proceeded with commencing the design process for the Oak Park Trunk Watermain and Trunk Sewer. The City commenced conceptual design process in line with recommendations from the MCEA. Conceptual design will inform detailed design assignment which is anticipate to commence first half of 2026. The detailed design process for the remaining projects has not yet begun, however are anticipated to begin in 2026. At this time, it is anticipated that construction of the Oak Park Trunk Watermain and Trunk Sewer will begin in mid-2026 with the remaining projects falling within late 2026 to 2027. Due to their natural succession, the Oak Park projects must be completed before the Powerline Road projects.

Project next steps include:

- Submission of the Powerline Road Trunk Watermain and Trunk Sewer Project Files Reports;
- Submission of the Oak Park Road Widening and Powerline Road Widening Project Files Reports;
- Submission of the Stormwater Management in Grand River Northwest Catchment Project Files Report;
- Continued engagement with Indigenous Peoples;
- Confirmation of approval for the preferred alternative from MTO, specifically for the Highway 403 crossing and infrastructure adjacent to the MTO ROW;
- Coordination with property owners for required easement;
- Detailed design of the Oak Park Road Trunk Sewer and Oak Park Road Trunk Watermain projects;
- Tunneled construction, followed by open cut construction;
- Environmental monitoring during construction by qualified natural features specialist; and
- Environmental monitoring after construction to ensure all areas are clear of debris and have been suitably reclaimed or restored.

10.2.2. Coordination with Trunk Watermain Construction

It is anticipated that the Oak Park Road Trunk Sewer will be constructed simultaneously with the Oak Park Road Trunk Watermain Project and the Oak Park Road Widening Project. These projects will then lead into the Powerline Trunk Watermain, Sewer, and Road projects.

As described in **Section 9.5.1** above, some portions of the trunk watermain will require tunneling and some will be open cut. Trenchless tunneling is required where the trunk watermain will cross key infrastructure such as Highway 403 and the CN Rail crossing. For the remaining segments, the trunk watermain can be installed by open cut at standard cover following existing surface grades.

Where tunneling is required for both the watermain and wastewater sewer, either a shared tunnel may be used with the watermain supported above the sewer or two separate tunnels may be constructed. The vertical profile and required clearances will determine the selection. Where open cut construction is possible for the sewer, the watermain and sewer may use the same trench box during construction while maintaining the minimum horizontal separation. These details will be confirmed during the detailed design phase for each project.

10.2.3. Continued Communication and Engagement

As of October 2025, the mandatory public and indigenous consultation through the MCEA process is now complete. The Project Team and the City are committed to continued engagement with both Indigenous communities throughout the remainder of these projects and into the detailed design and construction phases. Further information on this process can be found in **Section 11**.

10.2.4. Permitting and Approval

During the detailed design phase for each of the seven projects, the City will continue discussions with relevant agencies and stakeholders to ensure that all applicable approvals are received prior to construction. Key permits and approvals that may be required in advance of the construction activities are to be confirmed following land acquisition. An overview of each is provided in **Table 10-1**.

Additional permits or approvals may become applicable or be specified by affected agencies at any time.

Table 10-1. Permits and Approvals

Agency	Description of Permit / Approval
Transportation Canada (TC)	• No permits or approvals anticipated
Department of Fisheries and Oceans Canada (DFO)	• No permits or approvals anticipated
Environment and Climate Change Canada (ECCC)	• No permits or approvals anticipated
Ministry of Transportation	• Highway Corridor Management Permit
Ministry of Citizenship and Multiculturalism (MCM)	• The Stage 1 Archaeological Assessment was submitted to MCM on March 20, 2024 • A Stage 2 Archaeological Assessment is not required for this project

Agency	Description of Permit / Approval
Ministry of the Environment, Conservation and Parks	• No SAR permits or approvals are anticipated • No source water protection permits or approvals are anticipated Environmentally Sensitive Area/Species at Risk Permits (if found) • Permit To Take Water • ESR under the EAA • Environmental Compliance Approvals are required for new sewer tunnels
Grand River Conservation Authority	• No permits or approvals are anticipated • May need to review ESC, geotechnical and hydrogeological information, and protection plans/compensation strategies
City of Brantford	• Right-of-Way Activity Permit is required for activities within city road ROW • No cultural heritage permits or approvals are anticipated • No tree removal permits are anticipated
GrandBridge Energy	• Approval for construction occurring adjacent to hydro infrastructure
Private Landowners	• Permanent easements for the preferred route • Temporary or permanent permission to enter during construction and operation/maintenance

11. Communications Summary

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

At the outset of the public consultation process, the City developed a consultation and communication program with the goal to effectively obtain feedback. The primary objective of the program was to encourage meaningful consultation and two-way communication with the community, regulatory agencies, stakeholders, and City staff. More specifically, the program was intended to:

- Provide a coordinated approach for all methods of communication and stakeholder and agency engagement, through common templates for notifications and Public Information Centres (PICs), as well as consistent project contacts, messaging, and language;
- Provide estimated timelines for meetings, workshops, presentations, and PICs;
- Provide an outline of project documentation required, including comments management tracking, project website, and public documents;
- Provide details on how and when external agencies will be able to be involved in the project; and
- Provide details for Indigenous Peoples consultation.

Throughout the seven MCEAs, the Project Team utilized a variety of communication methods including public notices, direct mailings, meetings and workshops, informative website content, and meaningful and clear information available at PICs.

The MCEA process (MEA, 2023) specifies two (2) mandatory points of contact for Schedule B projects:

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

Documentation of the MCEA consultation and communication process is summarized in the following sections.

11.1. Study Stakeholder List

A list of key project stakeholders was prepared during Phase 1 of the project. This list has been continuously updated throughout the process to include any relevant agencies, stakeholders, Indigenous Peoples, utilities, and other special interest groups. A copy of the stakeholder list is provided in Appendix G.

All stakeholders were contacted throughout the duration of the study using notices and PICs.

Additional supplementary meetings were also held with the following agencies:

- Ministry of Transportation;
- County of Brant;
- Grand River Conservation Authority;
- Hydro One; and
- GrandBridge Energy.

Indigenous consultation followed the City's Indigenous communication and engagement policies, and engaged the following Indigenous Peoples throughout this project:

- Six Nations of the Grand River (SNGR); and
- Mississaugas of the Credit First Nation (MCFN).

Other interested nations were invited to review and provide comment on the MCEA through the public participation and consultation process.

11.2. Project Website

A project website was established in Phase 1, which included publishing the study commencement, study area and key background information, as well as the project team's contact information. A link to the project website (Northwest Brantford Municipal Services Expansion - City of Brantford) was also provided in the notices that were distributed. The website was continually updated throughout the study with important notices, relevant information, PIC materials, and a copy of this Project File Report.

11.3. Project Notices

11.3.1. Notice of Project Commencement

A Notice of Commencement was issued via mail and email to the stakeholder list on April 13, 2023. The notice was also posted on the project website and published in the following local newspapers:

- Civic News via Expositor Brantford (April 13, 2024);
- Two Row Times (April 19, 2023); and
- Turtle Island News (April 19, 2023).

Contact information for the project team was provided on the notices to allow for interested parties to obtain additional information or request they be added to the stakeholder contact list.

The MECP was notified directly through the filing of the Notice of Commencement to elicit important project information such as the identification of key indigenous Peoples in the study area.

The Notice of Commencement and associated MECP response can be found in Appendix H.

11.3.2. Notice of Public Information Centre

The Notice of PIC was issued via mail and/or email to the stakeholders identified at the outset of the project, as well as additional stakeholders who requested future notification and project communications. The notice was emailed and/or mailed on January 4, 2024, posted on the project website and advertised in the following local newspapers:

- Civic News via Expositor Brantford (January 4, 2024);
- Two Row Times (January 10, 2024); and
- Turtle Island News (January 10, 2024).

The Notice of PIC is provided in Appendix H.

11.3.3. Notice of Project Completion

The Notice of Completion was distributed to stakeholders on July 4, 2024, to notify the public that this Project File Report was being placed on the "public record" for the required 30-day review period. Stakeholders were informed of the Notice of Completion by the following means:

- Emailed copy of the notice;
- Advertised in local newspapers; and
- Advertised on the project website at: https://www.brantford.ca/en/your-government/northwest-brantford-municipal-services-expansion.aspx

A copy of the notice is provided in Appendix H. During the review period, the MCEA entitles interested persons, Indigenous Peoples, or government agencies who have significant concerns which cannot be resolved to request the MECP to issue a Section 16 Order under the EAA.

In response to version 1 of this Project File Report, the SNGR did issue a Section 16 request to the MECP. All feedback from this request from both SNGR and MECP has been addressed through this revised report This updated report (Version 2) will be resubmitted to MECP and SNGR for additional review and confirmation that comments have been addressed.

In general, if there are concerns regarding the study, a request may be made to the MECP for an order requiring a higher level of study (i.e., requiring a Schedule C Class EA or Individual/ Environmental Assessment), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the Ministry.

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

Requests should be sent by email or in writing to:

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

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

11.4. Public Information Centre

A PIC was held to encourage attendees to review project information and display boards. The purpose of the PIC was to present and receive feedback on:

- The study area, objectives, and Problem and Opportunity statement;
- Existing conditions and the alternatives servicing options; and
- Evaluation of alternative options and identification of preliminary preferred solutions.

The PIC was held in person at the Wayne Gretzky Municipal Golf Course and Learning Centre on January 17, 2024. The PIC included information display boards and a presentation with an open question and answer session. The question-and-answer session included the discussion presented in **Table 11-1**.

A questionnaire was developed to allow the attendees to submit comments to the project team. The questionnaire included the following questions:

- Do you have any questions or comments about the content presented today?
- Do you have any questions or comments about the study in general?

No responses were received via the questionnaire.

Copies of the Notice, display boards, and other materials available at the PIC are included in Appendix I.

Table 11-1. PIC Questions and Answers

Question	Answer
Are the industrial lands north of Powerline Road in the County of Brant lands being consulted in completing the water, wastewater and stormwater studies?	A portion of the County lands drain into the site, so they are being consulted heavily on the SW component. Sizing of the pipes is not set in stone yet but there are recommendations from the Master Servicing Plan (MSP) completed in 2021. We're considering building capacity to service lands outside of the noted site, right now we're establishing the core trunks/spines such that connections can be made outwards into the future. We're consulting with the County of Brant on the land development and servicing strategy in the area adjacent to the study area.
Are the eastern lines going to be designed/able to connect to the system via gravity connections? Assumption is that sanitary and water pipes moving from Paris Road and Powerline Road will all follow gravity on their course towards Highway 403.	Sizing has not been finalized, and there is potential that during conceptual design that external catchments may influence the pipe sizing and that the recommended pipe sizes we've put forth will be adjusted. There are sizing recommendations being made about pipe sizes from MSP and about downstream connections and the potential upstream connections are not presently affecting the pipe sizing but there is flexibility for those upstream future connections.
What is being satisfied tonight/showing completion of in the context of PICs 1 and 2?	The big component for tonight is the water/wastewater alignment in crossing the 403 and travelling to Oak Park Road.
When will the sizing of pipes be identified and provided?	In the completion of the EA, we will provide a preliminary plan and recommendation but that is subject to change based on the detailed design phase. We also must consider the density and magnitude of growth within the areas surrounding the NW expansion lands.
Are the trigger lands/those catchments included or considered in these project recommendations?	In the previous MSP, the general approach was that the best alternative was that the trigger lands would have their own developed servicing strategy as they're further east and the site-specific areas would be excluded from the trigger lands water main planning. However, as we move through this evaluation process, we are flexible in combining some of these projects/planning because we need to evaluate how sensitive the solution we're developing for this project is, and its potential in meeting the needs for the trigger lands as well. As the conceptual pipe design travels further eastwards we're having to forgo gravity sewers, and we must pump (because of notable elevation/topographic shifts) so there are external factors that come into the evaluation based on the population projections and additional catchment areas [specifically noting the trigger lands].

Question	Answer
Is there a preliminary construction schedule?	Not at this point. Timing will be based on the City's capital programs budget and schedule [for other projects]. Usually when the EA is finished, the City will be given approval to move forward with detailed design and then there are still other phases to be finalized ahead of completion, construction is one of these. Right now, the project completion is scheduled from 2026-2027 (completion of Phase 5 of the EA process). The end of 2024 marks the completion of Phase 1/2 of the Water/Wastewater and Stormwater EA projects (potentially Phase 3 for transportation). Earliest construction could even be is 2026 due to detailed design phases beginning in 2025.
Oak Park and Powerline Road are a highlight, but it seems that everything (i.e., project considerations) stops at Paris Road. Is there a plan for the intersection/other projects or design considerations beyond Paris Road?	Currently considering a potential roundabout at the intersection of Paris Road and Powerline Road, but Powerline Road extends further east and there are discussions of potential tie ins [with the County of Brant] with projects extending further along that way. As such, projects north/south along Paris Road are not currently a major priority.
Is expanding sanitary, water and stormwater servicing in the Northwest Expansion lands a prelude for expansion into the industrial corridor north of Paris Road?	Yes, and this site is also flagged as employment lands and so we're addressing the NW expansion lands but there are plans to address other MSP identified employment/industrial areas.
Concerns raised about northwards exit from the 403 along Paris Road.	That interchange is an MTO-led exercise and so we will not be addressing it within this project, but we must look forward to the future to keep in mind. We (City of Brantford) are continually meeting with MTO, and we can bring this up with them at future meetings.

11.5. Stakeholder Meetings and Consultation

Key approval agencies and affected municipalities were contacted throughout the Class EA. Details on these communications are provided in the section below.

11.5.1. County of Brant

A formal meeting was conducted on September 13, 2023, to provide an overview of the project, problem and Opportunity statements, key background information, objectives, review of alternatives options, and next steps. Communication with the County was ongoing on the staff level and through shared service committees.

11.5.2. Grand River Conservation Authority

Communication with Grand River Conservation Authority was ongoing throughout the Class EA and involved the following:

- A formal meeting was conducted on May 2, 2023, to provide an overview of the project objectives, anticipated recommendations, and project context; and
- A formal meeting was conducted on January 23, 2024, to provide an overview of the project, specifically the stormwater component, information on the technical evaluation and alternatives, field investigations, and next steps. An action item from this meeting was to develop a stormwater analysis methodology technical memorandum and provide for review. This technical memorandum was provided for review via email on February 27, 2024.

11.5.3. Ministry of Transportation

Communication with Ministry of Transportation was ongoing throughout the Class EA and involved the following:

- A formal meeting was conducted on May 9, 2023, to provide an overview of the project, objectives, anticipated recommendations, and next steps; and
- A formal meeting was conducted on October 16, 2023, to provide a project update, information on the technical evaluation and alternatives, and next steps.

11.5.4. Hydro One and GrandBridge Energy

Communication with Hydro One and GrandBridge Energy was ongoing throughout the Class EA and involved the following:

- A formal meeting was conducted on September 20, 2023, to provide an overview of the project, objectives, anticipated recommendations, technical evaluation and alternatives, and next steps;
- A formal meeting was conducted on October 17, 2023, to provide a project update, information on the technical evaluation and alternatives, and next steps; and
- A follow up meeting was conducted on November 23, 2023, to discuss the impact and future planning for infrastructure in the area.

Stakeholder	Comment/Concern	Response/Action
Hydro One	Follow up from the Notice of Commencement requesting input and guidance to evaluate project alternatives due to proximity to hydro infrastructure.	Hydro One provided general conditions as a reference point. It was noted if there are plans to cross or work within the hydro corridor, their stakeholders would need to review plans and conduct a technical review to ensure no negative impacts to their infrastructure.
Hydro One	Additional information about planned works was provided along with a request for availability to plan a meeting. Shapefiles were also requested for project mapping that would include hydro infrastructure.	Hydro One confirmed availability for the proposed meeting. Also indicated as-built drawings aren't available for infrastructure.
Kaneff Group	Requested update on the status of the ongoing EA for the Oak Park Road and Powerline Road Trunk Watermain and whether the Oak Park Trunk Sewer Extension is included within the scope of this EA. Schedule of Public Information Centre meetings and workshops was also requested.	The Project Team responded noting that the sewer project is within the scope of this study and a PIC will be held on January 18 and attached the Notice of PIC.
Kaneff Group	Provided questions related to the PIC materials and alignment options for the Oak Park Road and Powerline Road projects and confirmation the services will be extended east of Paris Road.	The Project Team responded noting the scope of the study and the scope of the alignments to extend water and wastewater infrastructure. It was noted the determination of the preferred extension of the water and wastewater services beyond Paris Road and Powerline Road will be completed via other studies.
Kaneff Group	Requested confirmation whether the further extension of services east of Paris Road is included within the scope of the current EA or subject to a separate EA process. The inquiry was related to a specific property noted extending services east of Paris Road is critical for the purpose of unlocking the development potential of the NW employment lands and if the current EA does not include the further extension of services it could delay development.	The Project Team responded noting that the expansion of services east of Paris Road and Powerline Road is beyond the scope of the current EA and the extension of infrastructure east of Paris Road may be subject to further studies. In preparation of the scope for the study, the City reviewed combined recommendations of the Master Servicing Plan and Transportation Master Plan. It also noted that although the scope of this study won't identify the preferred sewer and watermain alignment east of Paris Road, the study does incorporate servicing needs for the remaining northwest expansion lands. The Project Team noted the City had just initiated a Powerline Road Transportation Capacity EA and the Notice of Commencement was recently distributed.
Panattoni Development Company	The Project Team sent a follow up inquiring whether data had been shared with the City's Engineering department. A meeting was requested to clarify details and the Project Team encouraged Panattoni to share their transportation study findings with the City and MTO.	Panattoni confirmed the report was not shared with the City as it was GEI that requested the functional TIS but there's no concerns with sharing with the City's engineering department.
214 Carson Co. Inc.	Received email requesting topographic survey information.	A copy of base mapping produced for the project was provided noting the completed surveys along Powerline Road and Oak Park Road were compiled for

Stakeholder	Comment/Concern	Response/Action
(Development Company)		the purposes of the City and this project and are not to be used outside the original intended purpose.
Grand River Conservation Authority	The Project Team provided a technical memorandum regarding stormwater analysis methodology for the project and requested feedback. A later follow up was sent requesting the status of the review.	GRCA confirmed receipt of the memorandum and indicated they will undertake a review and provide feedback when it's available. GRCA later noted the memorandum was still under review and with a large number of submissions and staff shortages, review timelines are longer than anticipated.
WALTERFEDY	Received a letter via email on behalf of landowners providing comments on PIC No. 1 indicating the opinion the scope of the project should be expanded to include a detailed review of the water and wastewater servicing limits contributing to the Oak Park Trunk watermain and trunk sewer.	The Project Team responded noting they would review the feedback and follow up. It was also noted that sewer servicing limits and triggering considerations are typically a master servicing plan exercise and that the City is expected to conduct an MSP update to better understand and service the Expansion Lands. The Project Team provided a formal letter confirming the scope of the study.
Fisheries and Oceans Canada	Received response to the Notice of Public Information Centre that noted projects avoid causing death of fish or any harmful altercation, disruption, or destruction of fish and/or fish habitat unless authorized; however, the Fish and Fish Habitat Protection is not able to provide comment regarding general planning. If planned works may cause any prohibited effects, a Request for Review form should be completed for the works.	No action required.
Ministry of Citizenship and Multiculturalism	Received a response to a request about identifying Part iv designated properties within the study area. MCM confirmed no properties have been designated within or adjacent to the study area.	No action required.
Transport Canada	Noted that Transport Canada does not require receipt of all individual or Class EA notifications and requested that proponents self-assess whether the project interacts with federal property and/or waterway by reviewing the Directory of Federal Real Property or will require approval and/or authorization under any Acts administered by Transport Canada.	No action required.

12. Conclusion

The Oak Park Trunk Sewer Schedule B MCEA has developed a preferred servicing alternative to support existing and future servicing requirements in northwest Brantford. Based on the comprehensive review of alternative solutions that considered technical, environmental, social / cultural, and financial factors, Alternative 2 – Existing Easement was identified as the preferred solution.

Alternative 2 is the shortest route alignment, utilizes the existing easement for the purpose of crossing Highway 403, has minimal impact on environmental and social / cultural factors, and is the lowest cost option.

12.1. Public Review

At the conclusion of Phase 2 of the MCEA process for Schedule B projects, this Project File Report was prepared, and a Notice of Completion was issued. The Project File Report for the Oak Park Road Trunk Sewer documents the decision-making process during the Class EA. The Notice of Completion for this Oak Park Road Trunk Sewer Project File Report (initially issued on July 4, 2024 and revised on July 25, 2024) notified members of the public and agencies that the Project File Report would be available for public review until October 31, 2024. The Project File Report was available for public review at the following locations during normal business hours:

- Brantford Public Library – Main Branch: 173 Colborne Street, Brantford ON; and
- Wayne Gretzky Sports Centre: 254 North Park St, Brantford ON.

Written comments on this Project File Report were requested to be submitted to:

Guangli Zhang
Senior Project Manager, City of Brantford
324 Grand River Ave
Brantford, Ontario, N3T 4Y8

Chris Hamel
Project Manager, GEI Consultants Canada Ltd.
1266 South Service Road
Stoney Creek, Ontario L8E 5R9

In accordance with the MCEA process (MEA, 2023), if no concerns are expressed by the conclusion of the specified review period, the City may proceed with the design and construction of the project as described in this Project File Report.

As noted, this is version 2 of the project file. Key updates were made to address comments from SNGR and MECP. This constitutes the final project file report and is not expected to be recirculated for a second public review process. Instead, this revised copy will be submitted to MECP and SNGR for their review along with the required MECP tracking documents which are required to support MECP's review of the Section 16 Order request submitted by Six Nations of the Grand River (SNGR) on October 24, 2024

Appendix A Sewer System Schematic

Appendix B Natural Heritage Reports

Appendix C Stage 1 Archeology Report

Appendix D Cultural and Built Heritage Assessment Desktop Report

Appendix E Geotechnical and Hydrogeological Investigation Reports

Appendix F Source Water Protection

Appendix G Climate Change Memo

Appendix H Hydro One Construction Requirements

Appendix I Study Stakeholder List

Appendix J Study Notices and Communications

Appendix K Public Information Centre 1 Materials