



Final Study Design Report Revision 1

City of Brantford
Paris Road/Golf Road and Trunk Watermain
Environmental Assessment Studies

December 2024

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Revision History

| Revision | Date | Description of Change |
|-----------------|------------------|---|
| 1 | December 5, 2024 | Finalize Study Design Report Remove references to City of Brampton |

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1.0 INTRODUCTION

The City of Brantford has expanded to include rural areas north of Highway 403 and east and west of Golf Road. The expanded area will become employment lands. The City has initiated two concurrent Environmental Assessment (EA) Studies, a Transportation EA study for improvements to Paris Road and Golf Road north of Highway 403 and a Trunk Watermain EA study to determine how to supply water to this area. The Transportation EA includes Paris Road and Golf Road operational improvements and will be carried out as a Schedule C Study under the Municipal Class EA (MCEA) (2024). The Trunk Watermain EA Study involves determining the alignment of the trunk watermain in the vicinity of Highway 403, Canadian National Railway and surrounding area including type and size of the watermain, road, rail and watercourse crossings, and method of construction. A trunk watermain is a watermain that carries a large volume of water under high pressure. The Trunk Watermain EA Study will be carried out as a Schedule B EA Study. The EAs are being undertaken concurrently as one EA Study by BT Engineering Inc. (BTE) (Transportation) and Robinson Consultants (RCII) (Trunk Watermain) on behalf of the City of Brantford. The “EA Study” in this document refers to the roads and trunk watermain under study. The City of Brantford will be the Proponent for the overall study.

The Province of Ontario has proposed revisions to the *Environmental Assessment Act* for Municipal Class EA studies. It is not known when the Province will enact a revised *Environmental Assessment Act* but it is anticipated that the public consultation being undertaken by the City for this EA will exceed the minimum requirements under the proposed Municipal Class EA.

The EA Study will document the transportation need and road improvements to accommodate existing and future traffic volumes in the City. It will also document the need for the trunk watermain and establish the alignment and size. All roadway alternatives will consider all modes of transportation including passenger and commercial vehicles, pedestrians, micromobility users and cyclists. The Study will identify any property requirements needed and define a long-term property protection plan.

The road infrastructure is planned to accommodate the population and economic growth targets identified in the 2020 Provincial Policy Statement. The Places to Grow legislation establishes 2051 population and employment levels for municipalities. The expansion areas (Employment Lands) within the Study Area are part of the City planning for these targets.

1.1 Study Area

The Paris Road area under study extends from Golf Road 2.18 km to the northwest to the boundary of the City of Brantford. The Golf Road area under study extends from Paris Road northerly to Governor’s Road East, approximately 3.04 km. The Study Area is illustrated on **Figure 1**. It includes overlapping areas for the Transportation EA and the Trunk Watermain EA components. The Study Area boundaries extend 200 m on either side of the corridors under examination.

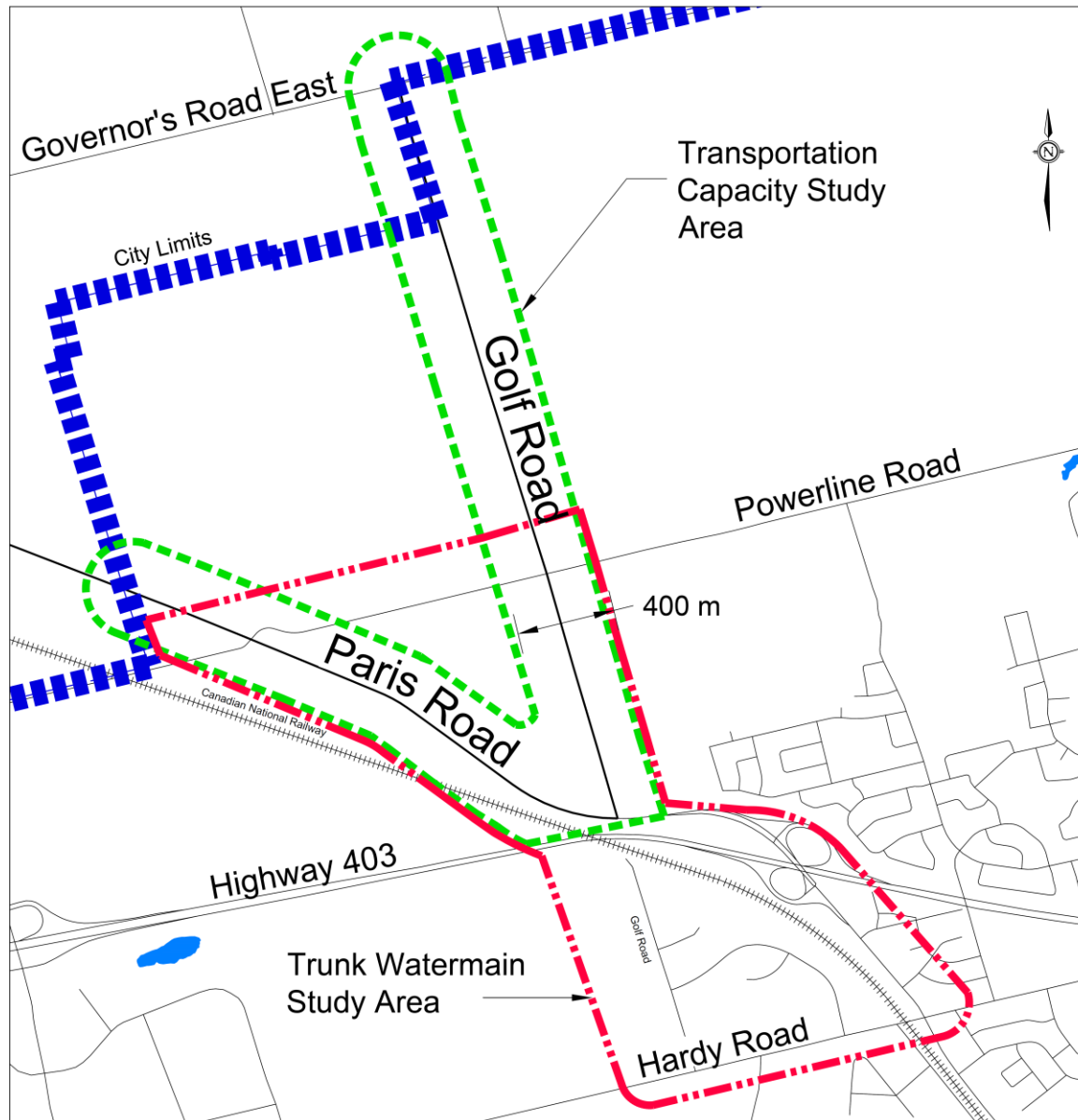


Figure 1: Study Area

1.2 Study Design Report Purpose

This Study Design Report (SDR) is the initial consultation document that outlines EA process commitments leading to the submission of an Environmental Study Report (ESR). The distribution of this report is intended to solicit early input on the planning process. Following the first public meeting, the SDR will be finalized based on input received and will be posted on the City of Brantford's website as the Final SDR.

The purpose of this report is to:

- Define the need and justification of the project.
- Identify Planning Alternatives (Alternatives to the Undertaking) as described in **Section 6.2**.
- Describe the MCEA process.
- Solicit input from the public, agencies and stakeholders.
- Define the scope of work that will be undertaken as part of the study.

2.0 STUDY PROCESS

This Study will be conducted as a Schedule C EA Study for Paris and Golf Roads and a Schedule B EA for the Trunk Watermain, meeting the requirements of the MCEA (Amended 2024). The mandatory requirements vary between the two. The study will culminate in the filing of a final report that will meet the requirements of both schedules.

This Study will complete all requirements under the MCEA process by establishing the need and justification for the project, considering all reasonable alternatives with acceptable effects on the natural, social and cultural environments, and proactively involving the public in defining a Recommended Plan.

2.1 Guiding Principles

A Class EA is an approved planning document that defines groups of projects and activities and the EA processes which the City of Brantford is committed to follow. The process provides a decision-making framework for effectively meeting the requirements of the *Environmental Assessment Act* (EAA).

The study approach reflects the following Ministry of the Environment, Conservation and Parks (MECP) guiding principles for EA studies which are found in the MCEA (Amended 2024):

- Consider all reasonable alternatives.
- Provide a comprehensive assessment of the environment.
- Utilize a systematic and traceable evaluation of net effects.
- Undertake a comprehensive public consultation program.
- Provide clear and concise documentation of the decision-making process and the public consultation program.
- Documentation and “bump-up” principles and processes.
- Environmental clearance processes.

The approved Class EA process is extensive, with significant consultation and outreach to agencies, the public and Indigenous Peoples.

2.2 Environmental Assessment Act Requirements

The EA Study will follow the Class EA process, thereby meeting the requirements of the MCEA (Amended 2024), which at the time of writing this study design is under review and may modify the study process as the study evolves. The Study is being initiated as a Schedule C EA based on the range on anticipated effects and capital cost of the project.

The EA will include two (2) Public Information Centres (PICs) and conclude with the preparation of an ESR that will document both studies. Following this approach, the public will be provided with a 30-day review period at the Study conclusion.

As the initial step in the Class EA process, this SDR is being made available to the public. This satisfies discretionary Step 1.2 of the MCEA process, as illustrated in **Figure 2**. The public and agencies will have this initial opportunity to comment on the proposed approach.

2.3 EA Phases

A breakdown of tasks, by phase, for a Schedule B and C study is illustrated in the following MCEA Processes shown in **Figure 2**. Schedule B Trunk Watermain projects may be determined to be exempt following a screening process (to be determined).

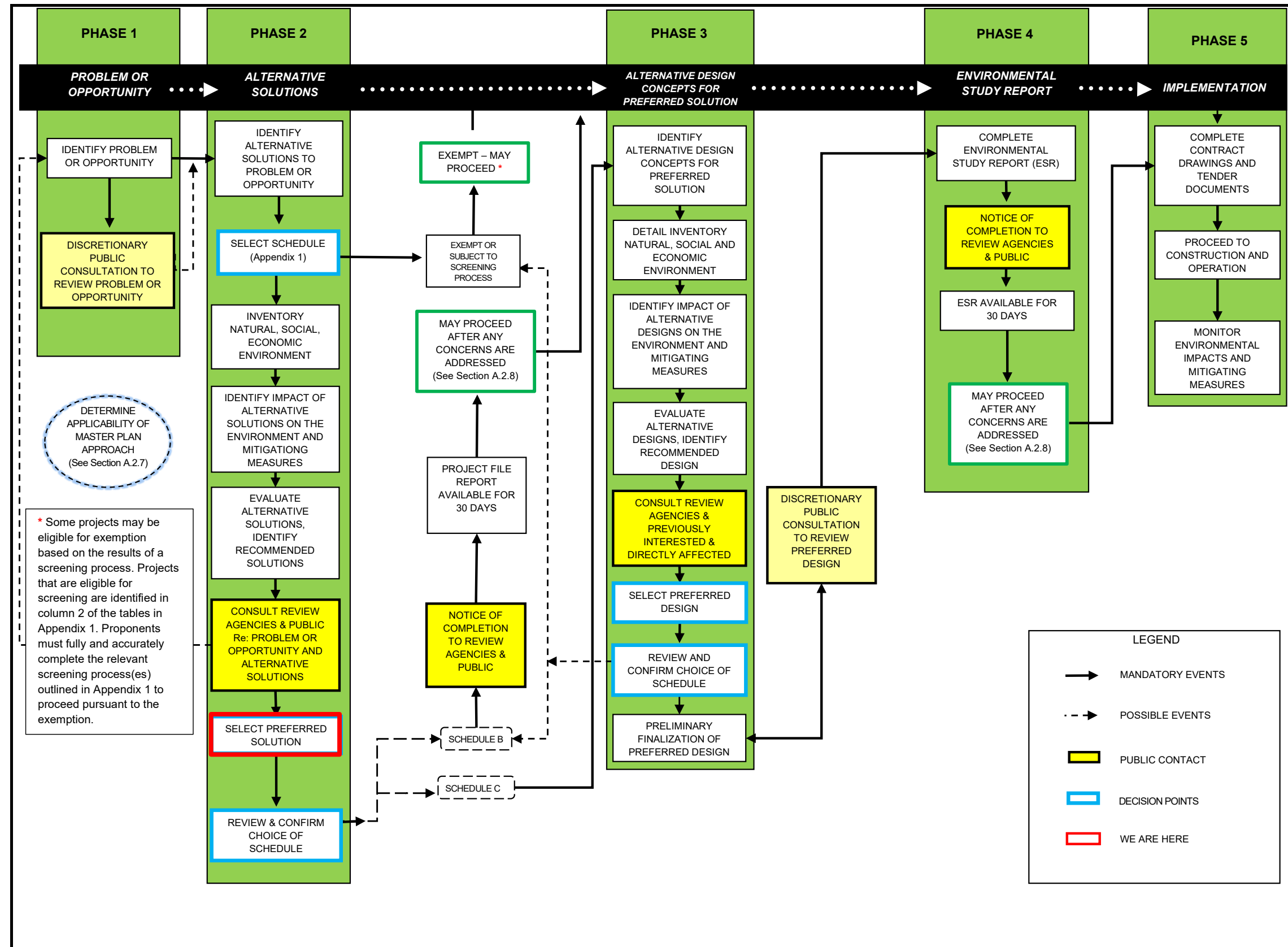


Figure 2: Municipal Class EA Process

3.0 STUDY APPROACH

Over the course of the study, input will be solicited from the public, stakeholders, agencies and Indigenous Communities. Input will be gathered through meetings, the City's website, and discussions/communication with interested parties. The Study approach is to work collaboratively with interested parties to address issues and reach a consensus on the Recommended Plan.

3.1 Consultation Program

The Consultation Program identifies the opportunities for the Study Team to discuss the study with the public/stakeholders, agencies and Indigenous Communities. This Study will use several processes to engage with interested parties and provide an opportunity for input. The Consultation Program will include:

- Notices published in local newspapers, issued as media releases and directly mailed/emailed to the study mailing list at key points over the course of the study including:
 - Notice of Study Commencement.
 - PIC No. 1.
 - PIC No. 2.
 - Notice of Study Completion to advertise the start of the 30-day public review period of the ESR.
- Communication and coordination with agencies/consultants to obtain background information for input into the study and to obtain required approvals/permits.
- Study updates on the project webpage on www.brantford.ca.
- Meetings with affected property owners, local residents, businesses and Indigenous Communities.

3.2 Public Consultation

The study will use several techniques to proactively involve the public including PICs and meetings with external stakeholders. Meetings will be organized with the stakeholders and may include adjacent landowners and other affected businesses or associations. These meetings will include representatives from the City of Brantford, BTE and RCII.

Two (2) PICs will be held during the study. PIC No. 1 will present the study goals, problem and opportunity statement, SDR (Work Plan), environmental inventories, traffic analysis, assessment of Planning Solutions, Preliminary Design Alternatives and seek public/agency input. PIC No. 2 will present the evaluation of design alternatives, the Technically Preferred Alternative (TPA), the Recommended Plan and Mitigation.

The public meetings will be an integral component of the study - seeking input and comments from the public and stakeholders. There will be an opportunity for the public to comment on the study at any time. All information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act* (2009). Anyone interested in the study will be added to the study mailing list upon request.

3.3 Agency Consultation

Agencies/ministries will be contacted at the start of the study to inform them of Study Commencement and to circulate this SDR. As the study progresses, meetings will be held with select agencies (as required) to review the study and obtain approvals in accordance with the MCEA. Agencies will include:

- Ministry of Transportation
- MECP
- Ministry of Tourism, Culture and Sport (MTCS)
- Ministry of Natural Resources and Forestry (MNRF)
- Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- Ministry of Citizenship and Multiculturalism (MCM)
- Ministry of Indigenous Affairs
- Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)
- Ministry of Community and Social Services
- Ministry of Municipal Affairs and Housing
- Ministry of Energy, Northern Development and Mines
- Ministry of Infrastructure
- Ministry of Community Safety and Correctional Services
- Grand River Conservation Authority (GRCA)
- Ontario Provincial Police and Emergency Services

3.4 Indigenous Consultation

The City of Brantford as an entity of the Province (Crown) has a constitutional duty to consult with Indigenous Communities with traditional land use or interests within the Study Area. Clear, effective and timely consultation with Indigenous Communities is essential to ensure the success of the project. This will include:

- Identification of interested/affected Indigenous Communities early in the decision-making process.
- Distribution and notification of relevant project-related information, including the MCEA process, environmental inventories and potential alternatives/impacts.
- Early identification of concerns/issues.
- Understanding of potential risk and impacts of the Study on Indigenous Peoples interests.
- Development of mutually acceptable solutions involving Indigenous Communities.
- Ensuring regulatory compliance throughout the Class EA process.

Indigenous Communities will be consulted throughout the duration of the Study and presentations will be made at their request. It is acknowledged that the indigenous peoples are rightsholders.

4.0 NEED AND JUSTIFICATION

4.1 Problem and Opportunity Statement

Road network improvements are required within the northwestern sector of the City of Brantford to accommodate planned/proposed development north of Highway 403 within the City and development adjacent to the City within the County of Brant. Planning for these improvements is required now to facilitate the expansion areas in the Study Area meeting the legislative requirements from the Province for the Places to Grow 2051. The 2051 Population and Employment levels for the City of Brantford are 165,000 and 80,000 jobs respectively. To support the expansion areas road and water infrastructure are being planned. The need and justification for these projects is driven by legislation by the Province of Ontario.

Defining the future road rights-of-way, intersection locations and infrastructure alignments will provide certainty for developers to plan development. The expansion area and future watermain network are illustrated in **Figure 3**.

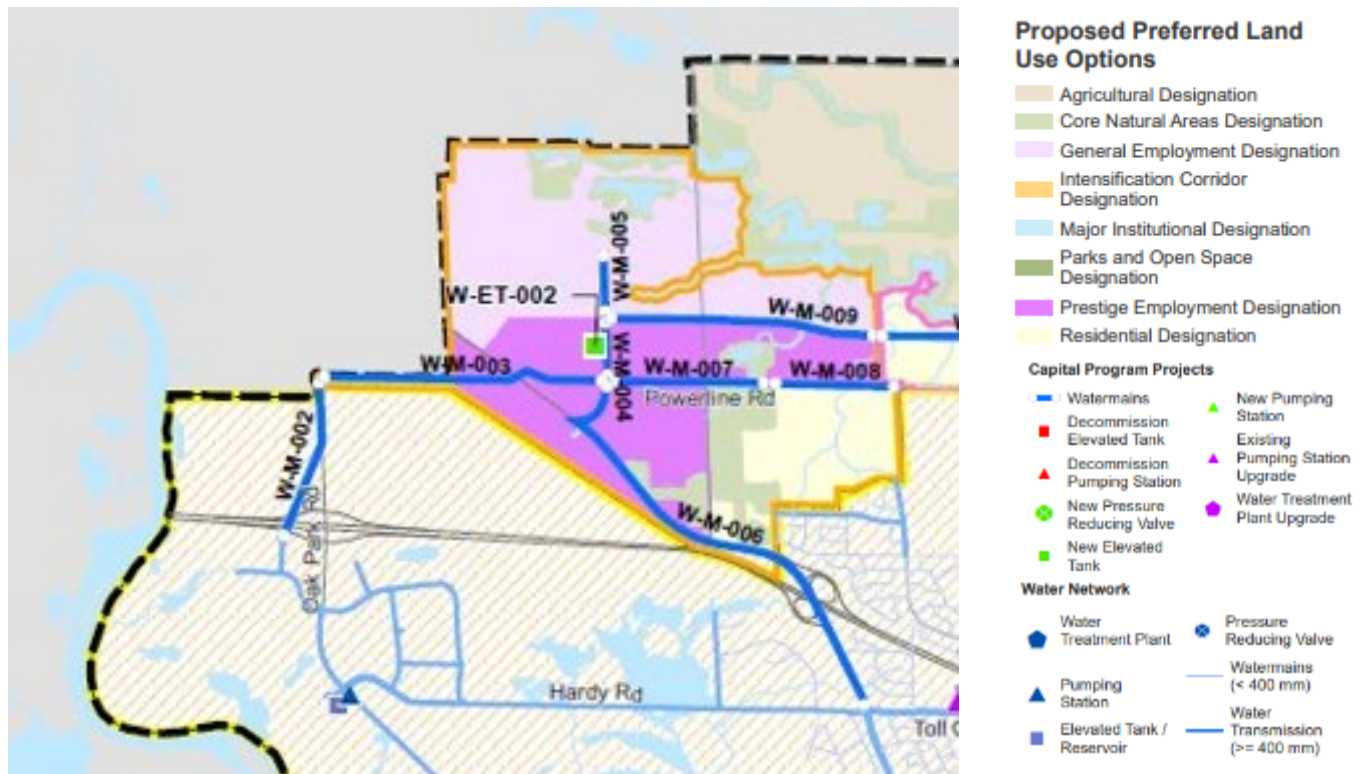


Figure 3: Expansion Area and Watermain Network

Source: Figure 11, Water, Wastewater and Stormwater Master Servicing Plan Update April 2021

4.2 Study Considerations

Key considerations, issues, constraints and commitments within the study area include:

Transportation - Improvements are required to: increase capacity and improve safety while accommodating planned growth in the City of Brantford. The proposed major arterial road improvements for Paris Road and minor arterial road improvements for Golf Road, identified in the

TMP, will accommodate traffic travelling to/from the new employment lands and other trip origins and destinations in the surrounding County, such as the community of Paris Ontario. The existing Paris Road and Powerline Road intersection is shown in **Photo 1**.



Photo 1: Paris Road at Powerline Road

Land Use - The Study Area is generally rural with lands currently being farmed and single-family residential dwellings and commercial businesses scattered along the roads. **Photo 2** provides an example of recreational use that exists along the east side of Golf Road.

Future land uses in the Study Area are predominantly Employment Lands within the 2051 planning horizon.



Photo 2: Recreational Use along Golf Road

Natural Environment - The majority of the landscape through the Study Area has been converted over time from a natural state to an agriculturally dominated landscape. Remnant woodlots and hedge rows remain as the primary natural environmental features with the potential to support locally rare species or Species at Risk (SAR). Provincial and Federal legislation prohibit removal of certain habitats or harming SAR individuals based on their status. Five small watercourses cross Golf Road, one of which is significant and may contain fish habitats. All watercourses are tributaries to the Grand River will require investigation and impact assessment.

Consultation and Engagement - Communication and consultation with the public and stakeholders will be a key component of the EA process, providing an opportunity for input, information exchange and identification of issues/desires.

The study will also take a proactive approach to consultation with Indigenous Communities, including Six Nations of the Grand River, Mississaugas of the Credit First Nation, and those identified by the Ministry of Environment, Conservation and Parks.

Utilities - The Study Area contains existing utilities including hydro transmission line on the south side of Powerline Road and Hydro poles on the north side. Alternatives will consider utility conflicts and required relocations will be identified in the study.

5.0 BACKGROUND

The City of Brantford is planning for increased development growth and the resulting increase in traffic demands. Improvements are required to accommodate the safe and efficient movement of all modes of transportation (i.e. vehicles, pedestrians and cyclists). Water infrastructure is also required to support the Employment land development. Major corridors within the Study Area include:

- **Paris Road (County Road 2):** Paris Road is a southeast-northwest major arterial roadway with a rural 2-lane cross section north of Golf Road and Highway 403. This roadway is a key route to the future Employment lands and to the Brant County community of Paris to the northwest. Paris Road has been projected to have significant future traffic capacity deficiencies due to population and employment growth. Paris Road is identified as an arterial road with critical transportation deficiencies between Highway 403 and Powerline Road.¹ Widening and Transportation Systems Management (TSM) improvements will be considered to enhance the existing capacity (through urbanization, parking restrictions, and operational improvements).
- **Golf Road:** Golf Road is a narrow 2-lane minor arterial roadway². TSM will be considered to enhance the existing capacity (through urbanization, parking restrictions, and operational improvements) of Paris Road to Proposed Development Limit. As development occurs, the area will transition to an urban environment which will require upgrading Golf Road to an urban arterial to accommodate all forms of transport. This may result in wider lanes and an urban cross-section. Intersection control through a signalization or a roundabout at Paris Road and Golf Road may be required.
- **Highway 403:** Highway 403 is a major freeway extending from Toronto to Woodstock. It is a major link across Southwest Ontario for the movement of goods, refer to **Figure 1**.
- **Governor's Road East (County Road 5):** Governor's Road East is minor arterial roadway and is a two-lane rural road that serves east-west traffic between Paris and Highway 24.
- **Powerline Road:** Powerline Road is a major arterial roadway within the City and is a two-lane rural road that serves east-west traffic along the former northern municipal boundary. The City is currently carrying out an EA study for Powerline Road to improve capacity to service anticipated growth in the northern section of the City.

5.1 Background Studies

Background studies have been completed in the Study Area to document the proposed land uses and planned improvements to the transportation network. These reports are summarized in the following sections.

5.1.1 City of Brantford 2020 Transportation Master Plan Update

The City of Brantford completed a Transportation Master Plan Update (TMP) that evaluated existing and future (2041) traffic conditions, changes that have been forecast since the previous 2014 update to the 2007 TMP and includes the Boundary Expansion Lands (approximately 460 ha in the north and Tutela Heights Expansion Areas) that were transferred from Brant County to the City on January 1, 2017. The 2020 TMP update recommended measures to satisfy the transportation requirements to

¹ City of Brantford Transportation Master Plan Update November 2020.

² City of Brantford Official Plan 2023 Schedule 12

2041. The TMP satisfied Phases 1 and 2 of the MCEA process and followed a Master Planning Process Approach #1.

The following study objectives were set by the City for this TMP Update³:

1. Plan to accommodate city growth to 2041, including the urban boundary expansion of the City of Brantford, the intensification target for development within the Built-Up Area, and density targets within the Designated Greenfield Area as set out in the new Official Plan.
2. Provide transportation infrastructure project and cost input into the Development Charges update.
3. Follow the Master Planning process and key principles of the MCEA.
4. Consult with First Nations, agencies, stakeholders and the public early and continuously throughout the Master Planning process, using various techniques and materials.

5.1.2 City of Brantford Transportation Master Plan Update - 2051 Addendum

In the TMP Update - 2051 Addendum (dated September 2021), the assumptions and recommendations from the 2020 Transportation Master Plan, based on a 2041 horizon land use forecasts, were re-assessed and confirmed for a 2051 horizon year. A summary of the transportation recommendations, as they pertain to this EA study includes.

Roadway Improvements: From the transportation assessment, the roadway classifications and the infrastructure improvements for the 2051 horizon year have been identified (shown in **Figure 4**):

Paris Road is classified a major arterial. A **road widening** is proposed between Oak Park Road and the east limit of the city (in the medium term, 2026 to 2030).

Golf Road is classified as a minor arterial (as per the TMP). **Transportation Systems Management (TSM) improvements** are planned from Paris Road to the north city limit (in the medium term, 2026 to 2030). The 2051 Addendum recommendations include minor enhancements to the previously proposed TSM. TSM includes a policy for access management, multi-modal considerations in the right-of-way, and a roundabout implementation strategy.

Powerline Road is classified as a major arterial. A **road widening** to 4 lanes (including urbanization) is proposed from Oak Park Road to King George Road (in the medium term, 2026 to 2030).

(Note that a separate EA study is currently underway for Powerline Road, from Paris Road to the east municipal boundary and will be coordinated with this EA study. The proposed alternative solutions have been identified.)

A **New East-West Major Collector Road** to serve the future development is planned north of (and running parallel to) Powerline Road (by year 2051).

A **New East-West Minor Collector Road** is also planned north of (and running parallel to) the new east-west major collector road, from the west city limit to Golf Road (by year 2051).

A **New North-South Minor Collector Road** is planned west of (and running parallel to) Golf Road, from Paris Road to the new East-West Minor Collector Road (by year 2051).

³ City of Brantford Transportation Master Plan Update November 2020

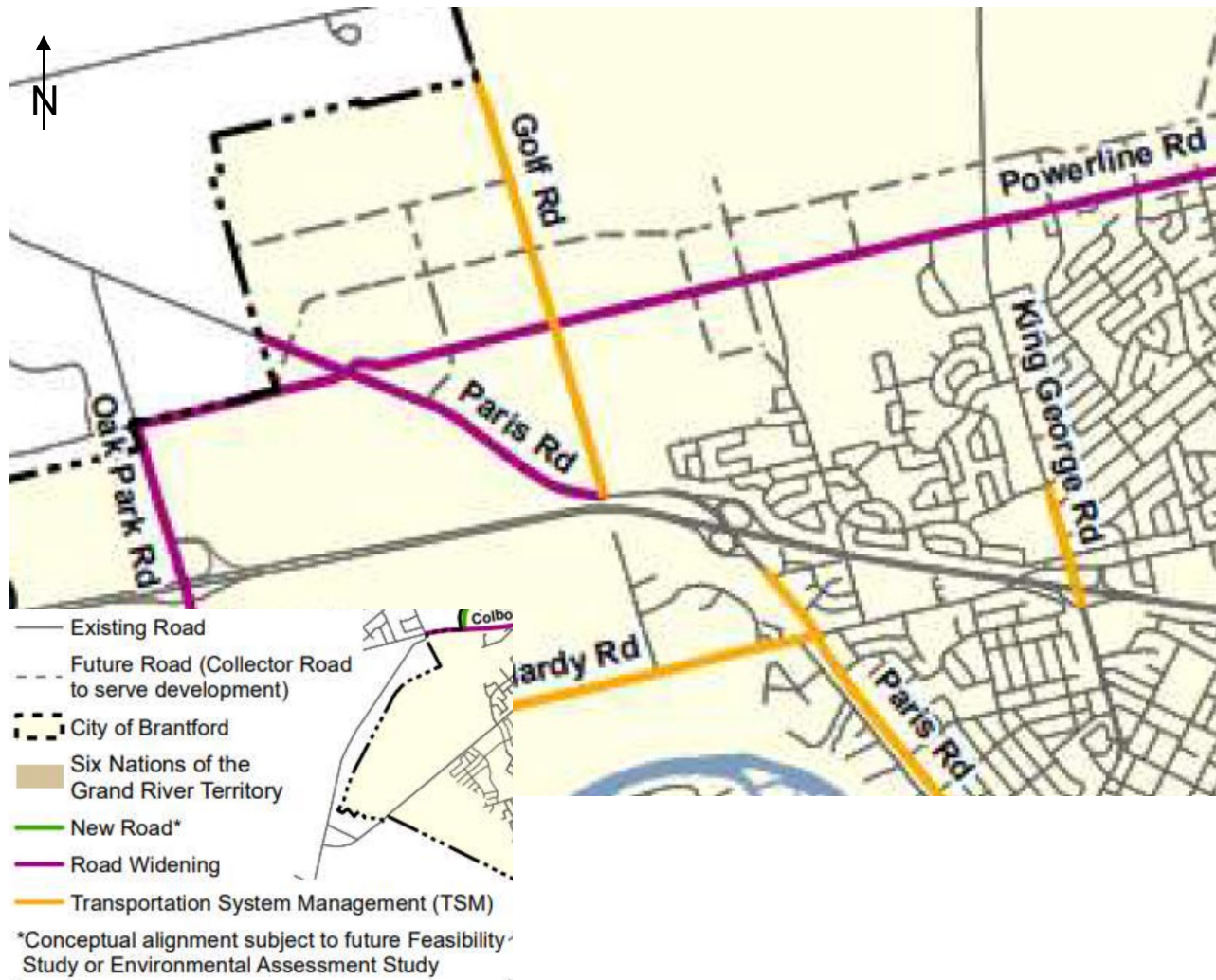


Figure 4: City of Brantford TMP, 2051 Addendum, Proposed 2051 Road Network

Intersection Improvements: The EA study will assess the need and feasibility of traffic control (including signalization versus roundabout implementation). The following intersections within the EA study area, shown in **Figure 5**, are identified as candidate locations for roundabouts in the TMP, 2051 Addendum.

- Golf Road at Paris Road
- Golf Road at Powerline Road
- Paris Road at Powerline Road

Improvements to the intersections of Powerline Road at Golf Road and Paris Road are being considered as part of other studies which are currently underway.

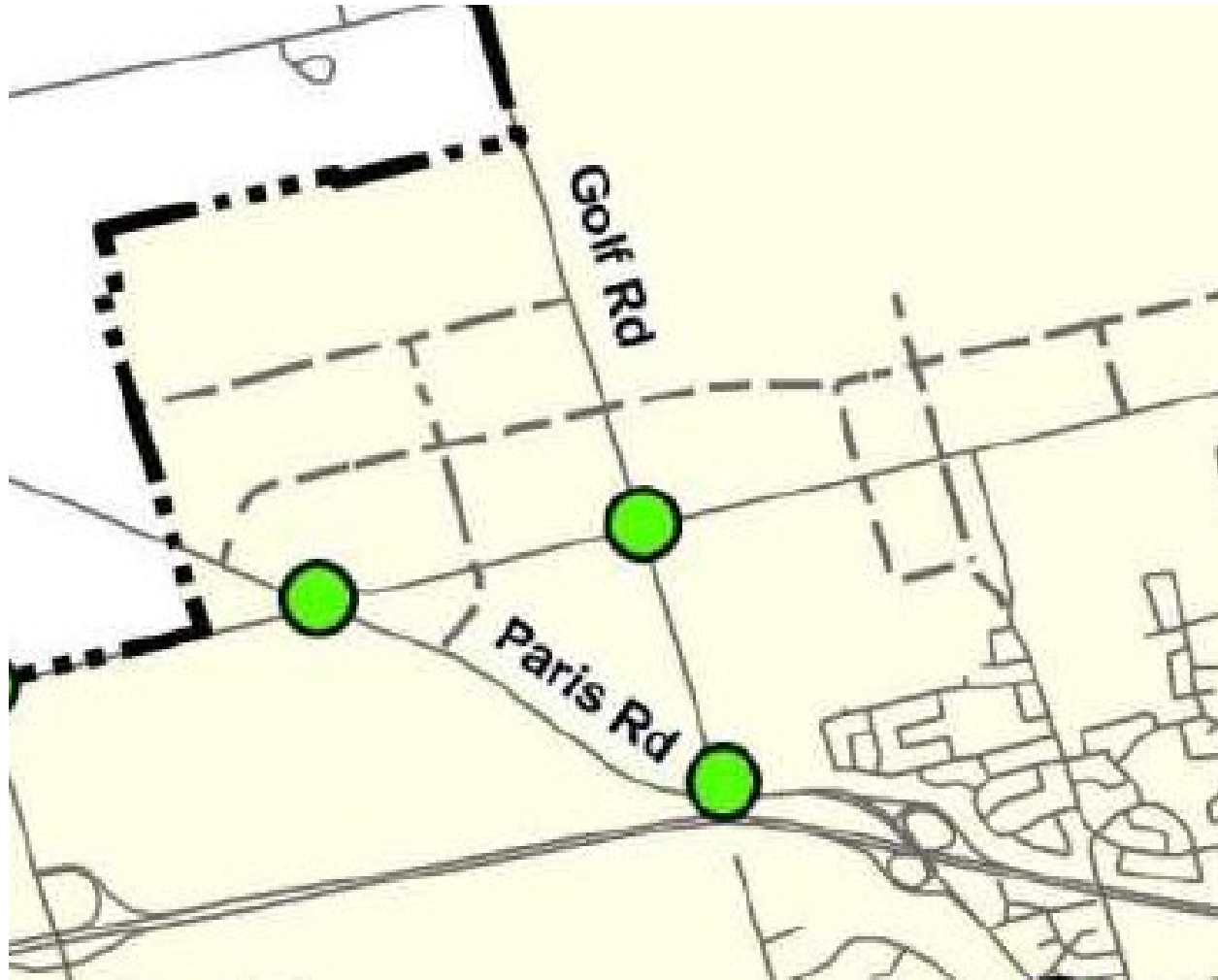


Figure 5: City of Brantford TMP, 2051 Addendum, Candidate Roundabout Locations

Capacity Constraints: A 2051 'Do Minimal' scenario is provided in the TMP, 2051 Addendum, which reflects no changes to peak hour mode shares and only short term committed projects, as shown in **Figure 6**.

Golf Road between Paris Road and Powerline Road is projected to have a volume-to-capacity (v/c) ratio exceeding 1.0. This is also true for stretches of Paris Road, including the segment between Golf Road and the Highway 403 interchange.

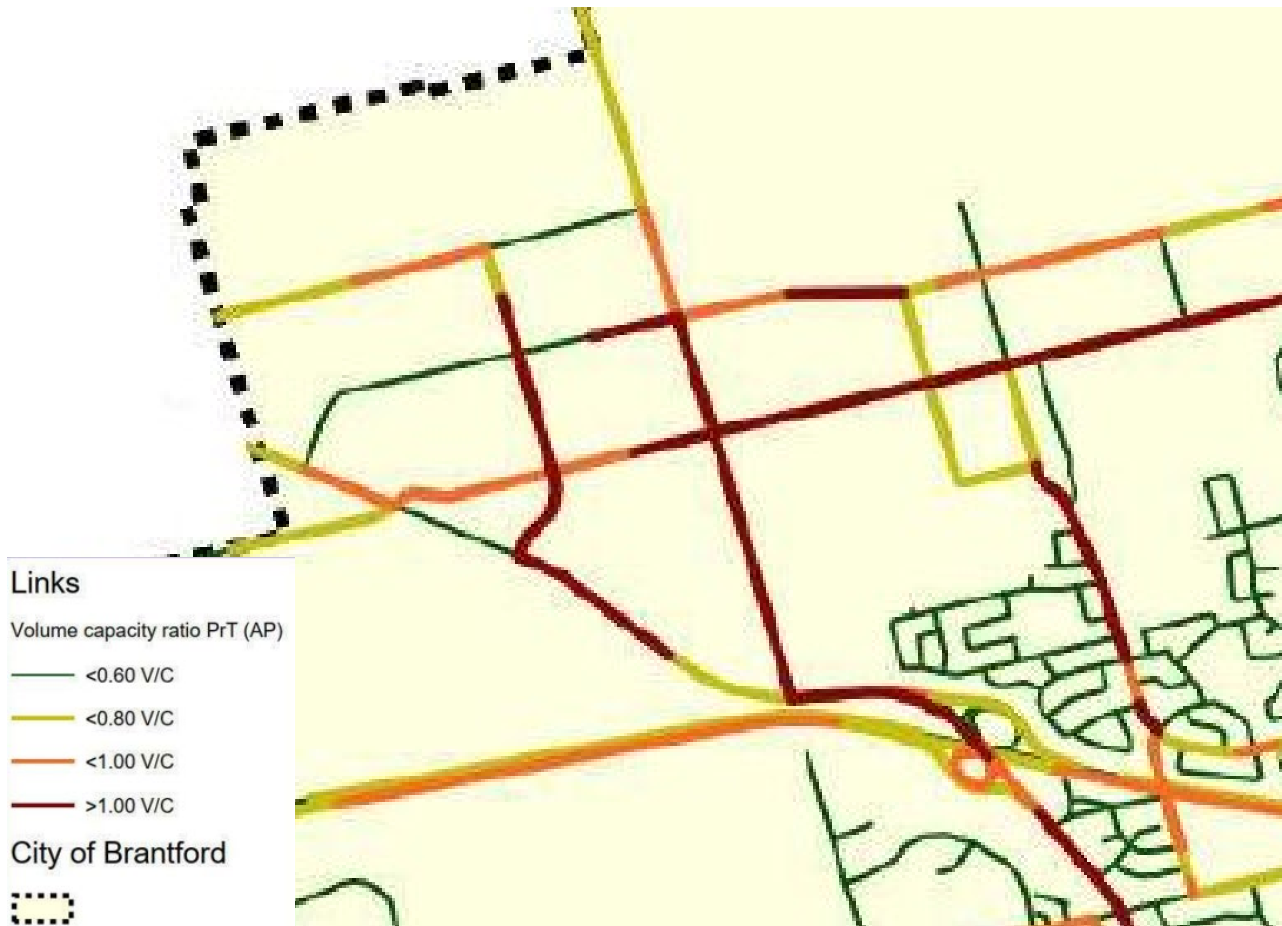


Figure 6: City of Brantford TMP, 2051 Addendum, Future (2051) ‘Do Minimal’ Volume-to-Capacity Ratio - PM Peak Hour

Transit Plan: The Paris and Powerline Employment area is predominantly rural with no existing transit service. The nearest transit service runs along Hardy Road (to the south of the study area) and along Balmoral Drive (to the east of the study area). However, in the long-term (2032 to 2051), the transit service improvement strategy would focus on implementing and expanding transit service in new development areas.

Truck Routes: Golf Road, Powerline Road and Paris Road are identified as existing truck routes (with no daily time restrictions for heavy vehicle travel on these roadways).

5.1.3 City of Brantford Official Plan

The City of Brantford Official Plan⁴ is a comprehensive planning document that identifies long-term goals and objectives to guide the development of the city. The Official Plan contains specific land use policies for settlement areas, agricultural areas and the protection of the natural environment. The city’s transportation policies include all modes of travel including pedestrian and bicycle paths. The City’s Official Plan encourages safe, energy efficient and economical movement of people and goods; identifies a hierarchy of roads based on the Transportation Master Plan (TMP); documents appropriate

⁴ City of Brantford Official Plan April 2024

right-of-way widths; promotes active transportation; and transit services throughout; identifies corridors to protect for future transportation, transit and other infrastructure; identifies policies to protect railway and air services; and restricts development on private roads. Refer to **Figure 7**.

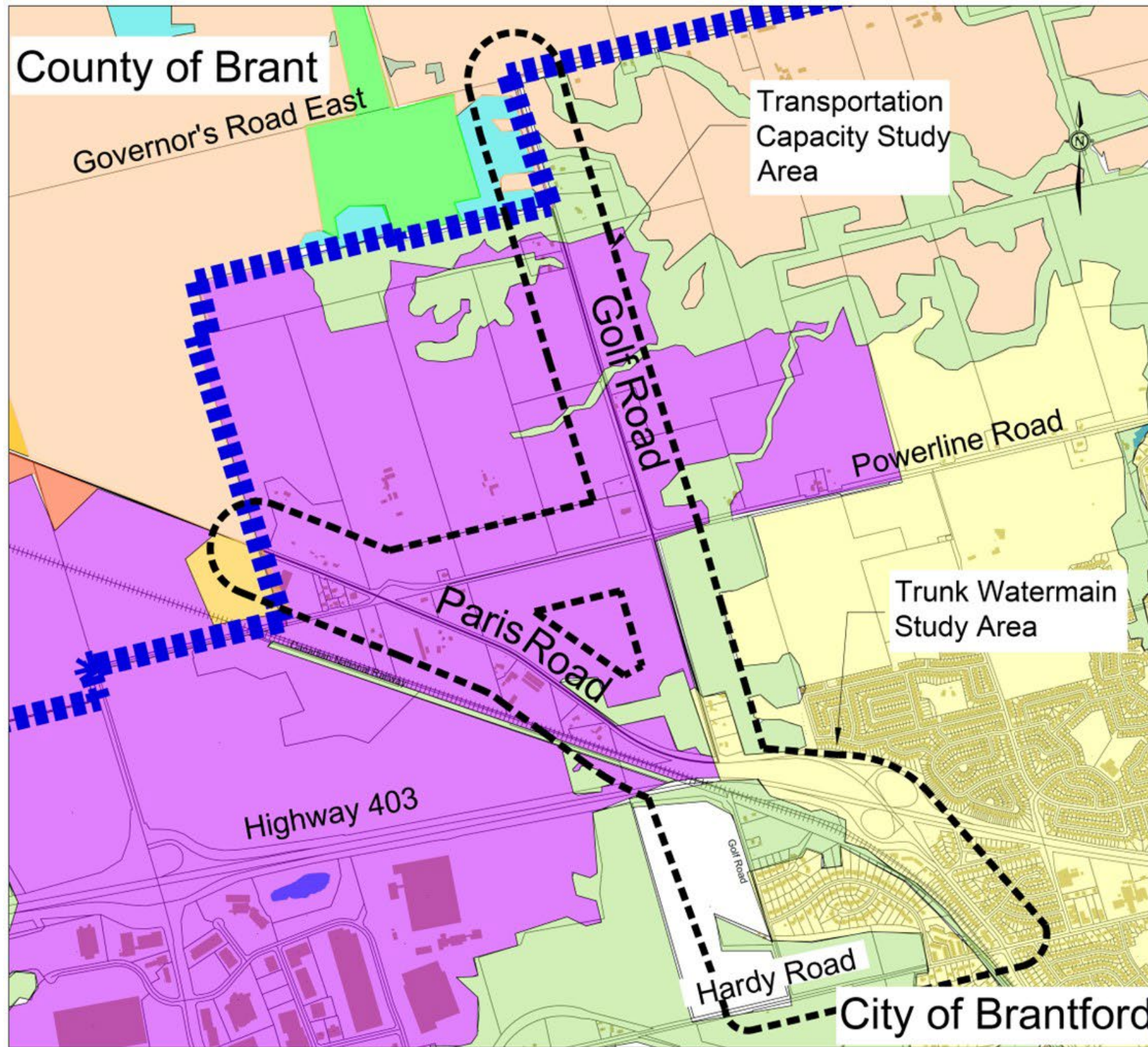
5.1.4 Active Transportation Study Master Plan (2023)

The Active Transportation Master Plan⁵ (ATMP) contains recommendations and guidelines for the planning, design, implementation and management of an active transportation network. The ATMP supports the TMP recommendations by addressing pedestrian and cycling mobility in more detail. The review of the cycling network included an assessment of connectivity to Brant County to ensure cyclists are well-served when crossing the municipal border and provided connections to the community of Paris along Paris Road. Paris Road is planned to have a Multi-Use Path (MUP) from the city limits to Tollgate Road. Golf Road was identified to include a MUP from Paris Road to Governor's Road. The TMP Update - 2051 Addendum had previously proposed the following alternative provisions for cyclists:

- Bike lane / paved shoulder:
 - Paris Road from the west City limit to Hardy Road / Tollgate Road (medium term, 2026 to 2030).
 - Golf Road, from Paris Road to new East-West Minor Collector Road (medium term, 2026 to 2030).
 - New North-South Minor Collector Road located west of, and parallel to, Golf Road (long-term, 2031 to 2040).
 - New East-West Minor Collector Road located north of, and running parallel to, the new Major Collector Road (long-term, 2031 to 2040).
- Multi-use Path / Trail:
 - Powerline Road, from Oak Park Road to east City limit (medium term, 2026 to 2030).
- Buffered Bike Lane:
 - New east-west major collector road located north of, and running parallel to, Powerline Road (long-term, 2031 to 2040).



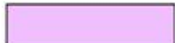
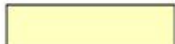




The EA study will confirm the preferred infrastructure for active modes on the study area roadways (i.e. bike lanes / paved shoulders and/or MUPs).

⁵ City of Brantford Active Transportation Study (CWATS) Master Plan, September 2023



Paris Road and Golf Road Environmental Assessment

Legend

-  Municipal Boundary
- City of Brantford OP Schedule 3 April 2024
-  Core Natural Areas
-  Rural / Agricultural Area
-  Employment Area
-  Neighbourhoods
- County of Brant OP Schedule A May 2023
-  Community Corridor
-  Community Node
-  Natural Heritage System
-  Parks and Open Space
-  General Employment

Official Plans (OP)

NTS

Figure 7: City of Brantford (2024) and County of Brant Official Plans (2023)

5.1.5 Grand River Watershed Management Plan (2014)

The Watershed Management Plan⁶ is a key component of a broader integrated watershed plan. The watershed plan compiles plans including forestry, fisheries, natural heritage, drinking water source protection, recreation and other planning processes so that linkages can be made for larger scale watershed planning. The Plan also includes flood forecasts and can be used to manage flooding, and the projected impacts due to climate change. The Plan is a comprehensive document, intended to guide land development in ways that respect the air, water and ground resources, while at the same time ensuring continued water quality capable of supporting drinking water needs, able to support a thriving fish community and protection of wetlands, significant wildlife habitats, flora and fauna and SAR.

5.1.6 Grand River Fisheries Management Plan

The Grand River Fisheries Management Plan establishes goals, targets and objectives of maintaining high water quality standards, minimizing flood impacts and maximizing tree cover to protect fish and other aquatic species in the Watershed. Many of the objectives are based on the topography, forest cover, physiography and hydrogeology of the lands over which the River traverses. Increasing rates of impervious surfaces, as a result of paving, housing, industry and parking lots, reduce the amount of precipitation reaching the underlying aquifers, while increasing the rate of runoff and thermal effects on surface waters where fish live.

The stretch of the Grand River between Paris and Brantford is recognized through the Fisheries Management Plan as “Exceptional Waters”. Coldwater exiting from Whitemans Creek northwest of Paris, and discharge from springs (into the river bottom) makes the Grand River good habitat for Smallmouth Bass, Walleye (Pickeral), Northern Pike and Rainbow Trout. SAR, such as Black Redhorse and River Redhorse are also found here. These are uncommon conditions in a river still far from its mouth outlet to Lake Erie. Additionally, the City of Brantford and the Town of Ohsweken both get all of their drinking water from the Grand River in this stretch of exceptional waters. An Exceptional Waters Resource Management Plan was developed in 2006 to manage fishing, recreation, water use and to enhance awareness of the importance of the river in this location.

There are no mapped watercourses along Paris Road within the Study Area. The highly porous soils in this area tend to infiltrate rapidly into the shallow aquifer near the Grand River, rather than runoff in surface watercourses. Along Golf Road however, there are five mapped watercourses, two small drainages from agricultural fields and two draining significant wetlands. All watercourses drain east, away from the Grand River into Fairchild Creek further east that borders the City of Brantford along the east side. Several watercourses have the potential to cross the various watermain alignments, depending on which alternatives proceed to impact analysis. Natural resources around the study area are provided in **Figure 8**.

Analysis of the fish species and status of fish habitat resources along Paris Road, Golf Road and the watermain alignment options will need to consider the close proximity to the Exceptional Waters of the Grand River and impacts on Fairchild Creek and associated wetlands. It is recognized that expansion of road networks is often a precursor to enabling land development on a larger scale, and therefore the infrastructures’ potential to impact fisheries, similarly on a larger scale needs consideration.

⁶ Grand River Watershed Management Plan, September 2014

Recommendations for construction mitigation may therefore be somewhat more rigorous where the exceptional waters may be impacted.

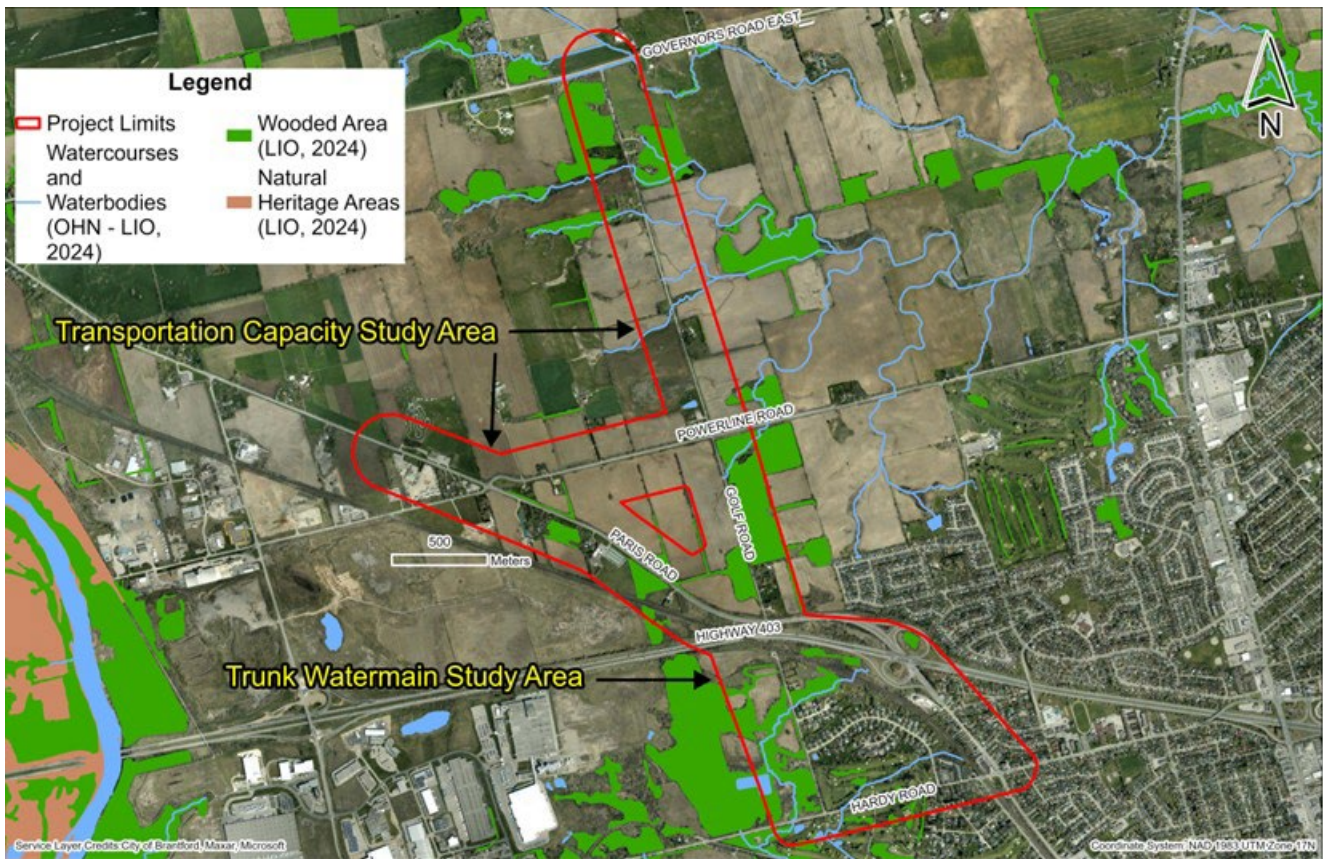


Figure 8: Mapped Natural Resources around the Study Areas

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

In 2016, the municipal boundary between the City of Brantford and the County of Brant was adjusted to secure additional lands for the City’s future growth, effective January 1, 2017. These lands are referred to as the Boundary Adjustment Lands. The municipal boundary adjustment brought new lands into Brantford’s municipal boundary; however, this did not automatically include the lands in the City’s urban area boundary, also referred to as a Settlement Area boundary. To expand the City’s Settlement Area boundary, the Province requires municipalities to conduct a Municipal Comprehensive Review (MCR) as input into their new or amended Official Plan. The MCR identified both growth and intensification targets as well as Settlement Area boundary expansion needs. The Settlement Area Boundary Expansion Lands were further subdivided into the following sub-areas:

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

To balance the needs of growth with the protection and preservation of natural, environmental, and heritage resources, the City of Brantford initiated the preparation of the 2020 Master Servicing Plan

Update – 2051 Amendment (2020 MSP Update) for water, wastewater, and stormwater services under the Municipal Engineers Association (MEA) Master Plan Class EA process.

Under Volume III – Water Master Plan of the Water, Wastewater and Stormwater Master Servicing Plan Update, the City identified the preferred water servicing strategy to consist of maintaining the existing pressure district (PD) split within the City, with new elevated tanks (ETs) in PD2/3 and PD4. The north employment lands located in PD4 will be supplied through a trunk watermain extension at Oak Park Road.

To support increased pumping and storage needs resulting from the North Expansion Lands, the new ET for PD4 would be generally located along a new north-south collector road, north of Highway 403 in PD4. The new PD4 ET and support watermain infrastructure will be sized to support the employment North Expansion Lands and existing PD4 needs.

As part of the PD4 servicing needs, the Master Servicing Plan identified the need for the Paris Road Trunk Watermain; a new 600 mm watermain in PD4 along Paris Road from Tollgate Road to proposed north-south collector road at Powerline Road; eventually providing a connection to the new PD4 ET. The City requires a Schedule 'B' MCEA to further study and plan this new trunk watermain, to extend the PD4 water distribution system north from Tollgate Road to Powerline Road.

The MSP recommended Project W-M-006, as shown in **Figure 3**, which identified the alignment of this trunk watermain along Paris Road from Tollgate Road (Hardy Road) to Powerline Road, and the future North-South Collector Road; however, the Schedule 'B' MCEA Study is to determine the preferred watermain alignment with consideration for construction methodology and location of crossing(s) of Highway 403, Canadian National (CN) Rail, watercourses, etc.

The MSP concept alignment for Project W-M-006 is shown in **Figure 9**.

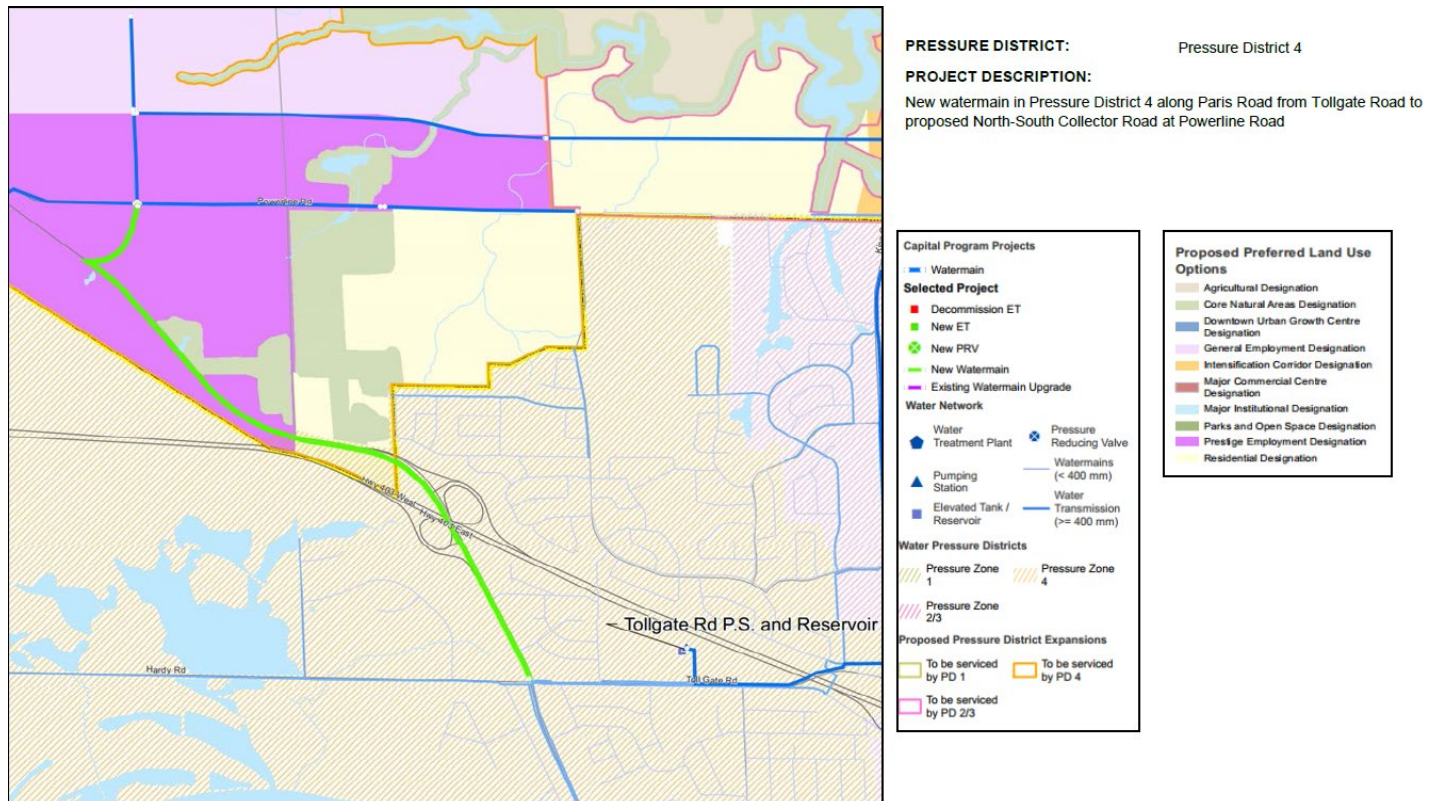


Figure 9: MSP Concept Watermain Alignment

The Study Area for the Trunk Watermain MCEA will include all lands impacted by the alternative watermain alignments reviewed during the study, generally including all rights-of-way, adjacent properties, Highway 403/CN Rail/watercourse crossings, etc. The general limits of the watermain study are shown in **Figure 1**.

5.1.8 Grand River Source Protection Area - Approved Assessment Report, County of Brant (Sect. 13) - 2021

The Grand River Source Protection Plan for the Count of Brant provides details on the sources of drinking water, primarily from municipal well heads (Airport / Oak Hill Well, Mount Pleasant Well, St. George Well, Paris Wells, Bethel Road Well) that supplies drinking water to the Town of Paris and the small communities surrounding the City of Brantford. Most well heads have several wells within a common collection zone. Mapping has been based on three-dimensional modelling of ground water conditions (flow direction, volume), based on municipal and provincial well monitoring reports, the underground stratigraphy and surficial soil conditions. The objective is to limit development at the surface where important zones of infiltration have been identified thereby protecting the integrity and purity of the well head system Protection zones have been mapped that are intended to limit development to certain uses, and where sources of contamination are to be strictly managed.

The Grand River is a major contributor to ground water resources at many of the Brant County wellheads. A review of the source area protection mapping, with respect to the Golf Road and Paris Road study areas, show that the closest protection zones for the Paris Wellhead group are located Northeast of the Town of Paris, on the north side of the Grand River, approximately 4.0 km from the Golf Road/ Governors Road intersection. These valuable subsurface resources are highly unlikely to be affected by road works on Golf Road, or de-icing operations that may introduce contaminants to the water supply. For Paris Road, the closest source water protection zone is around the Bethel Road wellhead 4.8 km southwest of the Paris Road/ Powerline Road intersection, and west of the Grand River.

6.0 WORK PROGRAM

The major elements of the work program are described in the following sections. They were provided to the public, stakeholders and agencies for comment. They describe the sequential steps in the decision-making process for the future transportation plan in the Study Area.

6.1 Phase 1: Identification of the Problem/Opportunity

This phase of the Study will include establishing the Study scope, schedule and approach with the Project Team and agencies; issuing the Notice of Study Commencement; the collection and organization of background information; reviewing and documenting existing conditions; and the transportation analysis to identify operational, safety and traffic concerns. The transportation analysis will build upon the previous work that has been completed and documented in this Study Design Report. It will examine, in greater detail, the operational implication of the future traffic demands and the distribution of traffic resulting from the planned developments. The watermain analysis will review the network and alignment that will cross Highway 403.

In addition, this SDR has been undertaken to proactively engage stakeholders early in the Study: This SDR presents: the Problem/Opportunity Statement; the consultation plan; project schedule; and identifies the scope of the Study's technical requirements, design standards and proposed evaluation criteria. This document is available for public/agency review and will help establish the foundation for all remaining environmental planning and public consultation processes.

6.2 Phase 2: Development and Evaluation of Alternative Solutions

The list of Alternative Planning Solutions is provided in **Section 7.0**.

The consideration of all reasonable alternatives is a guiding principle for EA studies. The corridor alignments, cross sections, and intersection alternatives will be generated through discussions with the City of Brantford, agencies and the general public.

6.3 Phase 3: Alternative Design Concepts for the Preferred Solution

Preliminary Design Alternatives will be generated for the Preferred Alternative Planning Solutions based on an inventory of the natural, social and cultural environment and results of technical investigations.

6.3.1 Environmental Inventories and Technical Investigations

Environmental inventories and technical investigations will be completed to assess the impacts of alternative design concepts. These investigations are summarized as follows:

Natural Environment: The Natural Heritage team will conduct additional field work, primarily at the watercourse crossings of Golf Road and where wetlands and woodlots abut the proposed study limits. Paris Road will be walked to ensure no watercourses are present as per Provincial mapping. Site specific fish community data most likely exists and will be utilized, unless absent in which case an inventory will be completed. Within the watermain study area, the woodlots and wetlands will be staked around the perimeter at the drip line, pending landowner access permission, for later verification by the regulatory agencies, principally by the Grand River Conservation Authority (GRCA).

The results of the field verification will be fed into the evaluation criteria, weighted appropriately by the overall team against other cultural, social, built and economic factors. Where SAR are identified,

specific avoidance or mitigative measures will be identified. As needed, spring and fall terrestrial field investigations will be completed. Fish habitats will be mapped within the Rights of Way plus 50 m either side as allowed by landowner permission.

The Schedule B (watermain) study area is complex, mixing urban residential communities, linear infrastructure, rural and recreational landscapes, and therefore will require a greater level of effort than the linear MCEP road evaluations. During Phase 3 we will prepare detailed inventories summarizing the data recovery and field investigations for each of the three study areas, tabulated separately and documented within each document. From the technical viable alternatives, the preliminary impacts on the natural environment will be identified and quantities (i.e. m² of wetland impacted) so they may be evaluated along-side the weighted social, cultural, built and economic factors. Best Management Practices, standard mitigation measures and where indicated, specialized mitigation measures will be identified for implementation during latter stages of design. A Natural Environment Assessment (NEA) report will be prepared based on the results of the desktop review, consultation with agencies and field investigations. The NEA will identify and categorize the natural heritage features and ecological functions within the study area, assess potential impacts to those features, and provide recommendations to avoid or minimize potential impacts.

Geotechnical: The geotechnical work program will complete a desktop review of the two Study Areas for the assessment of the alignment alternatives (Paris Road and Golf Road) and the Trunk Watermain on Paris Road. The planning level geotechnical investigation will also include boreholes at a strategic construction location per alignment alternative (i.e. nine boreholes total).

Hydrogeological: A background review of the available geological and hydrogeological information from publicly available resources.

- Monitoring wells for water level monitoring to determine on-site soil conditions.
- Single well hydraulic tests to calculate the hydraulic conductivity of native soils.
- Construction dewatering assessment, if groundwater is encountered at elevations within the depth of excavation for the proposed watermain installation works, trenchless crossings, sanding puts, etc.;
- Water users survey within 100 m from the Site for baseline conditions assessment
- A Hydrogeological Assessment Report.

Noise Impact Assessment: Sound levels will be considered in the evaluation as a criterion to compare alternatives. This will consider sound levels on adjacent noise sensitive areas for the competing alternatives. The assessment will consider only existing residential properties.

Air Quality Assessment: Air quality will be considered in the evaluation as a criterion to compare alternatives.

Built Heritage Resources and Cultural Heritage Landscape: The following scope of work will be completed for the Cultural Heritage Evaluation Report (CHER):

- Undertake background research to understand the history of the Study Area including the Indigenous use of the area (summarizing the archaeological investigations), the rural road grid and early settlement patterns of the surrounding areas.

- Consult with heritage staff to determine if there are built or landscape features having heritage value such as being listed on the Municipal Register of properties with potential heritage interest or value.
- Undertake an analysis of the heritage values of the landscape applying Ontario Heritage Act (OHA) Ont. Reg. 9/06 as the basis of the assessment. Potential values may be physical or design, historical or associative or contextual.
- Identify the heritage attributes that are evidence of the heritage values.
- Prepare a summary Statement of Significance that will form the foundation of the design work on the alternatives.
- Communicate with the design team throughout the project including regular discussion of findings and recommendations.
- Prepare a final CHER for circulation and comments.

Archaeology: A Stage 1 Archaeological Assessment will be completed to: develop an inventory of archaeological resources in the proposed area; determine the presence of any archaeological sites in the area; and recommend appropriate strategies for future planning consideration. This will be accomplished by conducting detailed documentary research of the land use, archaeological history, and present condition of the property. Based on the outcomes of the Stage 1 Assessment, a Stage 2 Archaeological Assessment may be required.

Socio-Economic Assessment: An inventory of existing land uses within the Study Area will be undertaken. This will include documentation of recreational/residential development (access, emergency services, trails, etc.), commercial, institutional and utility corridor land uses. The inventory will also include consideration and identification of future land uses such as developments, right-of-way requirements, future transit and transportation facilities and development that could be implemented complying with existing planning documents. Any land use changes that have occurred will be documented.

Stormwater Drainage: Preliminary review of the two roads shows that Golf Road has potentially 5 watercourse crossings, and Paris Road has no crossings. The proposed road widenings and modifications to include active transportation will result in potential impacts to the drainage systems receiving runoff from the two roads. The scope of work will comprise the planning of stormwater management and drainage for the alternatives and the recommended plan, and the conceptual design of the watercourse crossings of Golf Road. Since the watercourses are small, specific hydrology information will not be available from the GRCA, and it will be necessary to determine the drainage catchments and the corresponding design flows. Where appropriate, the possibility of combining the stormwater management solutions for the road with the stormwater management systems of adjacent developments will be explored. Watercourse crossings will be designed based on the MTO Highway Drainage Design Standards, modified in accordance with the City's standards. Separate Stormwater Management and Watercourse Crossing Hydrotechnical reports will be prepared for the Paris Road and Golf Road.

6.3.2 Evaluation of Alternatives

Preliminary Design Alternatives will be evaluated. Evaluation criteria will be identified including potential factors such as roadway level of service, traffic safety, accessibility, property impacts, socio-economic

environment, natural environment, cultural heritage, technical aspects/construction complexity and implementation.

The evaluation and analysis will identify all improvement alternatives and associated cost estimates including lifecycle costs, alternative construction / material options, proposed timeline and innovative solutions.

Based on the results of the evaluation, a Technically Preferred Alternative (TPA) will be selected. A technical memorandum outlining the results of the evaluation will be completed and will include: the assessment of alternatives to the undertaking; generation and assessment of preliminary design alternatives; evaluation criteria (i.e. environmental inventories and technical investigations); and selection of the TPA.

This document will be presented to the public for input at PIC No. 2. Following the PIC, refinements will be made to the TPA (if applicable), and the refined alternative will become the Recommended Plan. Following PIC No. 2, the ESR will be finalized.

6.4 Phase 4: Environmental Study Report

The preparation of the draft and final EA report will follow the format and content for an ESR accepted by MECP. The ESR will document the study methodology, findings, public involvement and recommendations for both the Schedule C and Schedule B studies. The Report will provide recommendations on the phasing of the proposed works and preliminary cost estimates. The public will be notified of the availability of the ESR for a 30-day public review period.

7.0 ALTERNATIVE PLANNING SOLUTIONS

The EA requires that all reasonable and feasible Planning Solutions (Alternatives to the Undertaking) be identified and evaluated at the start of the Study. Planning Solutions represent alternative ways or methods of addressing the Problem or Opportunity Statement specific to this study. These alternatives consider the overall needs of the study area and identify alternative approaches of addressing the need for improvements.

Phase 2 of the Class EA describes Alternative Planning Solutions. For a Schedule B project (such as the Watermain project) the alternatives are presented and evaluated in the Phase 2 of the Class EA. For this project the first PIC will show a preliminary assessment of the Watermain alternatives for review and comment by the public. For the Road EA project Phase 2 was previously completed in the TMP which defined road improvements are necessary for the 2051 land use development. The current study will present information at PIC No. 1 that will assess Alternative Planning Solutions which may validate the previous TMP conclusions. At PIC No. 1 the Road EA will also present the preliminary design alternatives that will be assessed in Phase 3 (should new infrastructure be recommended) and the preliminary evaluation will be presented at PIC No. 2. Doing so allows the public to review and comment on transportation alternatives before they are evaluated and identify issues that should be considered in the evaluation. This allows the team to listen to comments before decisions are made.

The Alternative Planning Solutions for this Study are summarized as follows:

- **No Growth (Do Nothing)** - The No Growth (Do Nothing) Alternative must be considered as mandated by the Class EA. It represents a baseline from which other approaches can be compared. This alternative will not meet the Provincial legislation requiring growth.
- **Limit Growth** - This alternative would consider reduced development that could be accommodated with no improvements to the road network or new municipal water infrastructure.
- **Future Growth (2051 Places to Grow) Alternative** - is to meet and build on all previous transportation and infrastructure master planning to meet the provincial targets of population and employment. This planning solution will include:
 - a. Roadway Improvements:
 - i. Paris Road improvements, including widening, turning lanes and intersection improvements to the City of Brantford boundary.
 - ii. Golf Road improvements, including a MUP, to the City of Brantford boundary.
 - b. Water Infrastructure.
 - c. Water servicing alignments for trunk watermains and future water reservoirs to serve the future Employment lands.

The evaluation of Alternative Planning Solutions selects the most reasonable alternatives that address the Problem and Opportunity Statement.

Based on the preliminary review of Alternative Planning Solutions, accommodating Future Growth (2051 Places to Grow) Alternative is recommended to be carried forward. This preliminary recommendation is available for public review and comment in this Study Design Report.

The Transportation Master Plan has assessed alternative planning solutions which has defined the capacity improvements necessary to service the Employment land expansion within the Study Area. These conclusions and recommendations remain valid.

8.0 PRELIMINARY DESIGN ALTERNATIVES

This Section describes potential Preliminary Design Alternatives should the Preferred Alternative Planning Solution recommend new infrastructure. If new infrastructure is carried forward following Phase 2, the EA will evaluate alignment, intersection treatments, locations, and cross sections for the new/improved Paris Road and Golf Road and watermain alignment and crossing of Highway 403.

As an initial step in the generation of alternatives, this Study will identify roadway alternative alignments, cross sections, types of intersection control (roundabout and conventional signalized or unsignalized intersections) and locations for intersections. The two alternative road corridor alternatives (Paris Road) will be either a roundabout control corridor or conventional 4/5 lane arterial with signalized intersection control. The Golf Road Collector Road corridor will assess 2-lane cross section alternatives considering rural and urban cross sections and accommodation of active transportation (Multi-use Path and or sidewalk in the corridor). The screening of other cross sections has been made based on the forecast travel demand and the required number of general purpose lanes required to meet the 2051 traffic forecasts of the TMP update.

The watermain network will be based on 600 mm trunk infrastructure assessing alternatives for alignments and approaches to cross the MTO freeway. The long list of alternatives is in **Figure 10**.

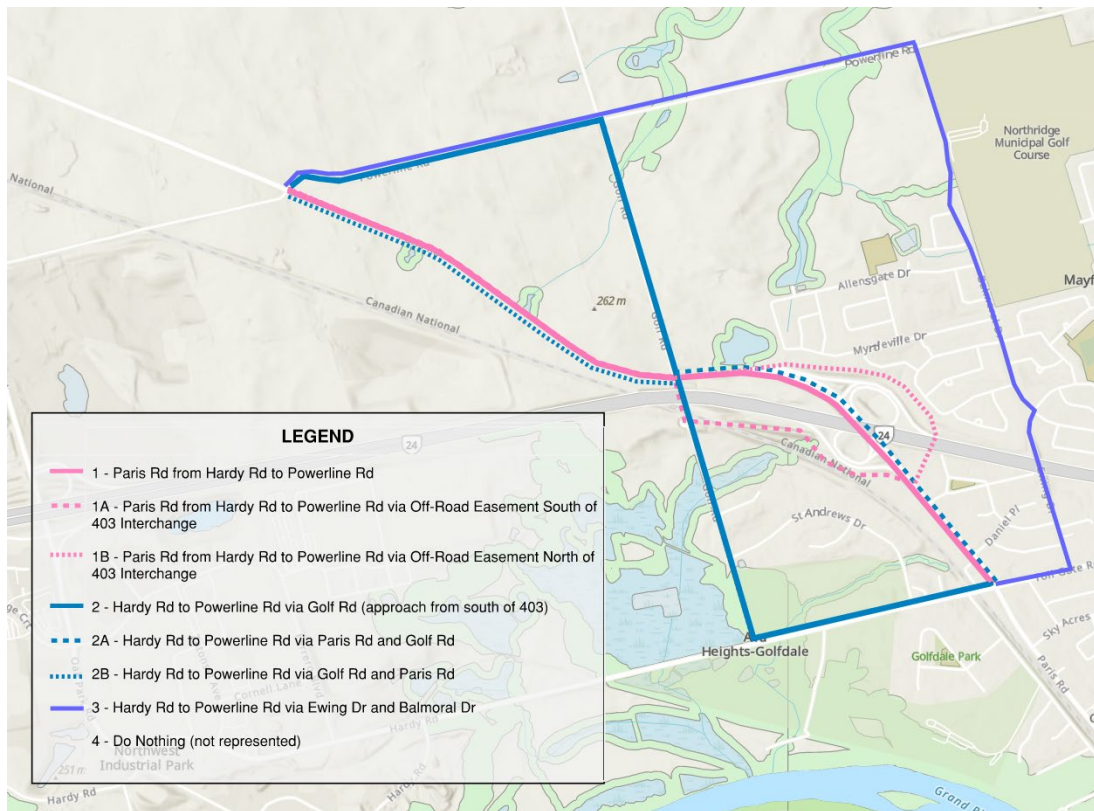


Figure 10: Trunk Watermain Preliminary Design Alternatives

The alternatives carried forward for evaluation may include refinements or sub-alternatives based on the comments received and the range of environmental factors and effects.

8.1 Coarse Screening and Evaluation of Alternatives

As part of the technical investigations, an additional qualitative coarse (initial) screening has been completed to eliminate alternatives which do not address the Problem Statement or have significant impacts such as natural environment, heritage resources or existing development (social environment) in comparison to other alternatives carried forward. The results of any additional coarse screening analysis will be presented at PIC No. 1 for comments.

For the final evaluation of remaining alternatives, the study will utilize a quantitative (i.e. numerically based) evaluation methodology.

8.1.1 Road EA Coarse Screening

The Paris Road and Golf Road cross sections are defined by the Transportation Master Plan (TMP) Update (September 2021). The traffic analysis completed as part of the TMP concludes that, within the Study Area for this EA:

- **Paris Road:** will require widening to a minimum of 4 lanes, including provisions for pedestrians and cyclists and auxiliary lanes (if required).
- **Golf Road:** will require a minimum of 2 lanes for vehicular traffic, including auxiliary lanes at intersections where required, and provisions for pedestrians and cyclists.

8.1.2 Watermain EA Coarse Screening

One Watermain EA alternative has been coarse screened from evaluation: Option 3 (Hardy Road to Powerline Road via Ewing Drive and Balmoral Drive).

MTO has identified that they do not support Option 1; however, it will be carried forward in the evaluation as a comparison alternative.

Option 3 has the longest length with the most difficult construction complexity and highest up-front cost due to narrow easements, a crossing on a bridge overpass, considerable underground infrastructure, residential areas and schools, and crossing Highway 403. An encroachment permit from MTO for the crossing and a permanent easement would be required, as well as potential Permission to Enter agreements with private properties including the school and golf course. Due to this, Option 3 has been coarse screened (eliminated).

9.0 STUDY SCHEDULE

A schedule for this Study is shown in **Table 1**.

Table 1: Preliminary Study Schedule

| Task | Date |
|---|-----------------------|
| Project Start-Up Meeting | June 2024 |
| Study Commencement Notice | Summer 2024 |
| Draft SDR | Fall 2024 |
| Public Information Centre No. 1 | Fall 2024 |
| Information Gathering | Fall 2024/Spring 2025 |
| Environmental Review / Technical Investigations | Fall 2024/Spring 2025 |
| Generation of Preliminary Design Alternatives | Fall 2024 |
| Analysis and Evaluation of Alternatives | Fall 2024 |
| Public Information Centre No. 2 | Winter 2024/2025 |
| Recommended Plan | Winter 2025 |
| Preparation of ESR | Spring 2025 |
| 30-day Public Review Period | Spring 2025 |

GLOSSARY OF TERMS

| | |
|---|---|
| • AADT | Annual Average Daily Traffic – the average 24-hour, two-way traffic per day for the period from January 1st to December 31st. |
| • Alignment | The vertical and horizontal position of a road. |
| • Alternative | Well-defined and distinct course of action that fulfils a given set of requirements. The EA Act distinguishes between alternatives to the undertaking and alternative methods of carrying out the undertaking. |
| • Alternative Design Concepts | Alternative ways of solving a documented transportation deficiency or taking advantage of an opportunity. (Alternative methods of carrying out the undertaking). |
| • Alternative Project | Alternatives to the Undertaking, see above. |
| • Alternatives to the Undertaking | Alternative ways of solving problems or meeting demand (Planning Alternatives). |
| • ATMP | Active Transportation Master Plan |
| • Canadian Environmental Assessment Act (CEAA) | The CEAA applies to projects for which the federal government holds decision-making authority. It is legislation that identifies the responsibilities and procedures for the environmental assessment. |
| • Class Environmental Assessment Document | An individual environmental report documenting a planning process which is formally submitted under the EA Act. Once the Class EA document is approved, projects covered by the class can be implemented without having to seek further approvals under the EA Act provided the Class EA process is followed. |
| • Class Environmental Assessment Process | A planning process established for a group of projects in order to ensure compliance with the Environmental Assessment (EA) Act. The EA Act, in Section 13 makes provision for the establishment of Class Environmental Assessments. |
| • Corridor | A band of variable width between two locations. In transportation studies a corridor is a defined area where a new or improved transportation facility might be located. |
| • Criterion | Explicit feature or consideration used for comparison of alternatives. |
| • Detail Design | The final stage in the design process in which the engineering and environmental components of preliminary |

design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared, and contract documents and drawings are produced.

| | |
|--|---|
| • DFO | The Department of Fisheries and Oceans Canada |
| • EA | Environmental Assessment |
| • EA Act | Ontario Environmental Assessment Act (as amended by S.O. 1996 C.27), RSO 1980. |
| • Environment | <ul style="list-style-type: none"> • Air, land or water. • Plant and animal life, including human life. • The social, economic and cultural conditions that influence the life of humans or a community. • Any building structure, machine or other device or thing made by humans. • Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities. • Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario. |
| • Environmental Effect | A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects. |
| • ESR | Environmental Study Report |
| • Evaluation | The outcome of a process that appraises the advantages and disadvantages of alternatives. |
| • Evaluation Process | The process involving the identification of criteria, rating of predicted impacts, assignment of weights to criteria, and aggregation of weights, rates and criteria to produce an ordering of alternatives. |
| • External Agencies | Include Federal departments and agencies, Provincial ministries and agencies, conservation authorities, emergency services, municipalities, Crown corporations or other agencies other than MTO. |
| • Factor | A category of sub-factors. |
| • General Arrangement | Structural plan of the bridge and proposed works including elevations and cross-sectional views of the bridge. |
| • Individual Environmental Assessment | An environmental Assessment requiring the submission of a document for approval by the Minister, pursuant to |

the EA Act and which is neither exempt from the EA Act nor covered by a Class EA approval.

| | |
|--------------------------------|---|
| • MCEA | Municipal Class Environmental Assessment |
| • MECP | Ministry of the Environment, Conservation and Parks. |
| • Mitigating Measure | A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects. |
| • Mitigation | Taking actions that either remove or alleviate to some degree the negative impacts associated with the implementation of alternatives. |
| • MNRF | Ministry of Natural Resources and Forestry. |
| • MTCS | Ministry of Tourism, Culture and Sport. |
| • MTO | Ministry of Transportation Ontario. |
| • NEA | Natural Environment Assessment report. A report that details the non-human aspects of the environment, primarily the flora, fauna, fish habitats and species at risk. |
| • NSA | Noise Sensitive Areas |
| • OP | Official Plan |
| • PIC | Public Information Centre |
| • Planning Alternatives | Planning alternatives are “alternative methods” under the EA Act. Identification of significant transportation engineering opportunities while protecting significant environmental features as much as possible. |
| • Planning Alternatives | That part of the planning and design process where alternatives to the undertaking and alternative routes are identified and assessed. Also described as “Alternative Project” under the federal EA Act. |
| • Project | A specific undertaking planned and implemented in accordance with the Class EA including all those activities necessary to solve a specific problem. |
| • Proponent | A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management, or control of an undertaking. |
| • Public | Includes the general public, interest groups, associates, community groups, and individuals, including property owners. |

| | |
|---------------------------------------|---|
| • Realignment | Replacement or upgrading of an existing roadway on a new or revised alignment. |
| • Recommended Plan | That part of the planning and design process, during which various alternative solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements of lands and rights-of-way are satisfactorily identified, and that the basic design criteria or features to be contained in the design, have been fully recognized and documented in sufficient graphic detail to ensure their feasibility. |
| • SAR | Species At Risk |
| • Screening | Process of eliminating alternatives from further consideration, which do not meet minimum conditions or categorical requirements. |
| • Section 16 | The act of requesting that an environmental assessment initiated as a class EA be required to follow the individual EA process. The change is a result of a decision by the proponent or by the Minister of Environment to require that an individual environmental assessment be conducted. |
| • SDR | Study Design Report. |
| • Sub-factor | A single criterion used for the evaluation. Each sub-factor is grouped under one of the factors. |
| • Technical Advisory Committee | The Advisory Committee will include the County and Consultant. It will act as the decision-making body for the study recommendations. |
| • TDM | Transportation Demand Management |
| • TIS | Traffic Impact Study |
| • TMP | Transportation Master Plan |
| • Trunk Watermain | A trunk watermain is a larger watermain that carries water from a treatment plant to smaller watermains |
| • TPA | Technically Preferred Alternative |
| • TPP | Technically Preferred Plan |
| • TSM | Transportation Systems Management |

- **Traceability** Characteristics of an evaluation process which enables its development and implementation to be followed with ease.

- **Undertaking** In keeping with the definition of the Environmental Assessment Act, a project or activity subject to an Environmental Assessment.

- **V/C** Volume-to-capacity ratio (of the link or screenline traffic operating conditions)
