Planmac Engineering Inc.

Bradford West Gwillimbury
A Growing Tradition

PLANMAC ENGINEERING INC.

Line 8 and Sideroad 10 Improvements

Line 8 from Barrie Street to Sideroad 10 and 10 Sideroad from North of Line 8 to Reagens Industrial Parkway

Schedule ‘C’ Municipal Class Environmental Assessment

Environmental Study Report (Volume I)

Prepared for:
Town of Bradford West Gwillimbury

Prepared by:
Planmac Engineering Inc.

January 2020

Standard Limitations

This report was prepared by Planmac Engineering Inc. (Planmac) for the Town of Bradford West Gwillimbury in accordance with the agreement between Planmac and the Town of Bradford West Gwillimbury. This is based on information provided to Planmac which has not been independently verified.

The disclosure of any information contained in this report is the sole responsibility of the Town of Bradford West Gwillimbury. The material in this report and all information relating to this project reflect Planmac's judgment in light of the information available to them at the time of preparation of this report. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Planmac accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

Planmac warrants that it performed services hereunder with that degree of care, skill, and diligence normally provided in the performance of such services in respect of projects of similar nature at the time and place those services were rendered. Planmac disclaims all other warranties, representations, or conditions, either express or implied, including, without limitation, warranties, representations, or conditions of merchantability or profitability, or fitness for a particular purpose.

This Standard Limitations statement is considered part of this report.

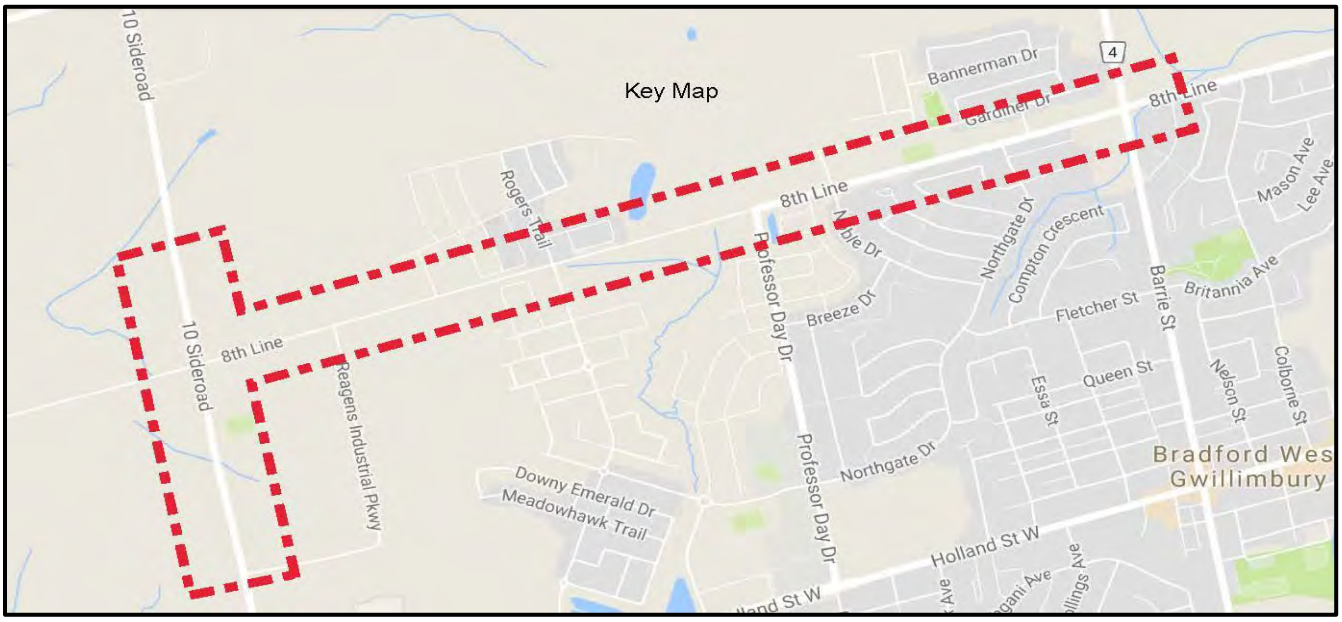
Executive Summary

Background

The Town of Bradford West Gwillimbury has retained Planmac Engineering Inc. (Planmac) to prepare this Environmental Study Report (ESR) in accordance with Schedule 'C' of the Municipal Class Environmental Assessment (MCEA) process. The MCEA process is a decision-making and planning process that ensures that potential effects of a project are identified and managed prior to implementation. The process requires the evaluation of possible solutions, design concepts, and recommends the best approach based on an evaluation of environmental effects and how to minimize them.

The study area for the proposed improvements, as shown in Exhibit ES1, includes Line 8 from Barrie Street to Sideroad 10 and Sideroad 10 from North of Line 8 to Reagens Industrial Parkway.

Exhibit ES1: Study Area



The purpose of this study is to determine the following:

- Assess the existing transportation system and servicing infrastructure in the study area;
- Identify deficiencies to the existing transportation system and servicing infrastructure;
- Identify the location, extent and sensitivity of the existing environments within the study area;
- Develop alternative solutions to address the transportation and servicing needs within the study area and identify impacts associated with the implementation of each;

- Establish appropriate measures required to mitigate any adverse impacts resulting from the proposed transportation and servicing improvements;
- Recommend a preferred design concept to address the existing and future transportation and servicing infrastructure needs;
- Considers all aspects of the environment, physical, natural, social, cultural and economic; and
- Document the process followed in this ESR for 30 calendar day public review period.

Problem and Opportunity Statement

From the outset of the project, and in line with Phase 1 of the MCEA process, a problem / opportunity statement was developed to reflect the need and objective for the study. For the Line 8 and the Sideroad 10 study area the objective is to ensure:

"that existing traffic infrastructure and pedestrian safety deficiencies be addressed in an environmentally responsible manner, having regard for continued growth and travel demands anticipated over the next 25 years within the northwest area of Bradford and future transportation."

Alternative Solutions

Six (6) high-level alternative solutions were developed to address the problem statement. The alternative solutions are as follows:

1. Do Nothing.
2. Traffic demand management (i.e. alternative modes of transportation).
3. Expand transit services.
4. Alternative travel routes (i.e. improve alternative and new travel corridors).
5. Upgrade two-lane road to rural / urban cross section complete with centre left turn median lane and intersection improvements.
6. Widen to a four (4) to five (5) lane rural / urban cross section complete with intersection improvements.

To satisfy Phase 2 of the MCEA process, a screening assessment was undertaken to evaluate the alternative solutions. This involved a high-level review against the following criteria: transportation / technical; natural environment; social environment; cultural heritage environment; and economic environment. Matrices were developed to detail the outcome of the screening assessment.

Preferred Alternative

Based on the screening assessment, the study team believed that the most appropriate solution would be Alternative 6 (reconstruct Line 8 and Sideroad 10 to a four (4) to five (5) lane urban cross section with intersection improvements) as it best satisfied the problem / opportunity statement and provides the best long-term solution for the Town of Bradford West Gwillimbury.

Ultimate Preferred Design Concept

The ultimate preferred design concept constitutes upgrades required by 2041 based upon the projected traffic data. The following components of the ultimate preferred design concept are as follows:

- New multi-use trail throughout the south side of Line 8 and east side of Sideroad 10. The trail will increase safety for cyclists and pedestrians through segregation from vehicular and increase connectivity along Line 8 (i.e. improved active transportation).
- Provision of a two-lane roundabout at Line 8 / Sideroad 10 with a significantly improved level of service (LOS) from existing conditions, even at 2041 traffic forecasts. The roundabout would also improve safety for drivers coming from all legs of the intersection, and pedestrian safety through use of the proposed crossing islands.
- Maintain Line 8 / Reagens Industrial Parkway intersection as a one-way stop control.
- A sidewalk on the north side of Line 8 with the exception of between Noble Drive and Northgate Drive (i.e. reduced boulevard) to avoid impact on Belfry Cemetery.
- Construction of a two-lane roundabout at Line 8 / Langford Boulevard intersection providing connection for traffic between Line 8 and Holland Street West.
- Improved traffic flows through the study area through construction of widened four (4) and five (5) lane cross sections. The cross section and chosen alignments have minimized land acquisition and impacts on the natural, social and cultural environment as far as possible, including preventing impact on Belfry Cemetery.
- Conversion of the existing Line 8 / Rogers Trail / Summerlyn Trail intersection to a two-lane roundabout improving driver safety performance, LOS and driver comfort. Pedestrian and cyclist movement would still be possible through use of islands at each roundabout leg providing crossing points to the proposed multi-use trail and sidewalk.
- Upgrade of the existing Line 8 / Professor Day Drive intersection from a two-way stop to a two-lane roundabout. This proposed upgrade would improve conditions at the intersection significantly with large improvement in safety performance from current

safety performance as traffic must slow down and yield to traffic entering from Professor Day Drive. The roundabout would also cope with the projected traffic forecasts for 2041 (Stantec, 2017).

- Upgrade of the existing Line 8 / Noble Drive intersection to a five (5) lane cross section along Line 8 to compensate for the Line 8 widening as a whole.
- Upgrade of existing backyard fences to closed board noise attenuating fences on the south side of Line 8 between Noble Drive and Barrie Street. A small noise attenuating fence is also required at the southeast corner of Line 8 / Langford Boulevard intersection and northeast corner of Line 8 / Noble Drive intersection.
- Upgrading the existing one-way stop at Line 8 / Northgate Drive intersection to four (4) lane signalized intersection with extension north from Line 8 to Gardiner Drive and permanent closure of Lowes Gate.
- Line 8 / Barrie Street / Yonge Street intersection: conversion to a two-lane roundabout with designated slip roads from Yonge Street to Line 8 and Line 8 to Yonge Street.

Construction Phasing

Construction will be undertaken in two (2) phases, interim upgrades (required by 2031) and ultimate upgrades (required by 2041). This was determined upon review of traffic projections and when intersections would need upgrading prior to deterioration in level of service and to address traffic needs. Construction is proposed to commence in 2021.

Interim upgrades (Phase 1) to the following intersections are to take place between 2021 and 2031:

- Line 8 / Sideroad 10 (two-lane roundabout);
- Line 8 / Professor Day Drive (install permanent traffic signals);
- Line 8 / Northgate Drive: extend Northgate Drive to Gardiner Drive, provide additional through lane and install traffic signals;
- Lowes Gate: full closure; and,
- Line 8 / Barrie Street / Yonge Street: upgrade intersection by widening west leg to five lanes.

The ultimate upgrades (Phase 2) include widening to a four (4) to five (5) lane urban cross section and the intersection improvements as noted below:

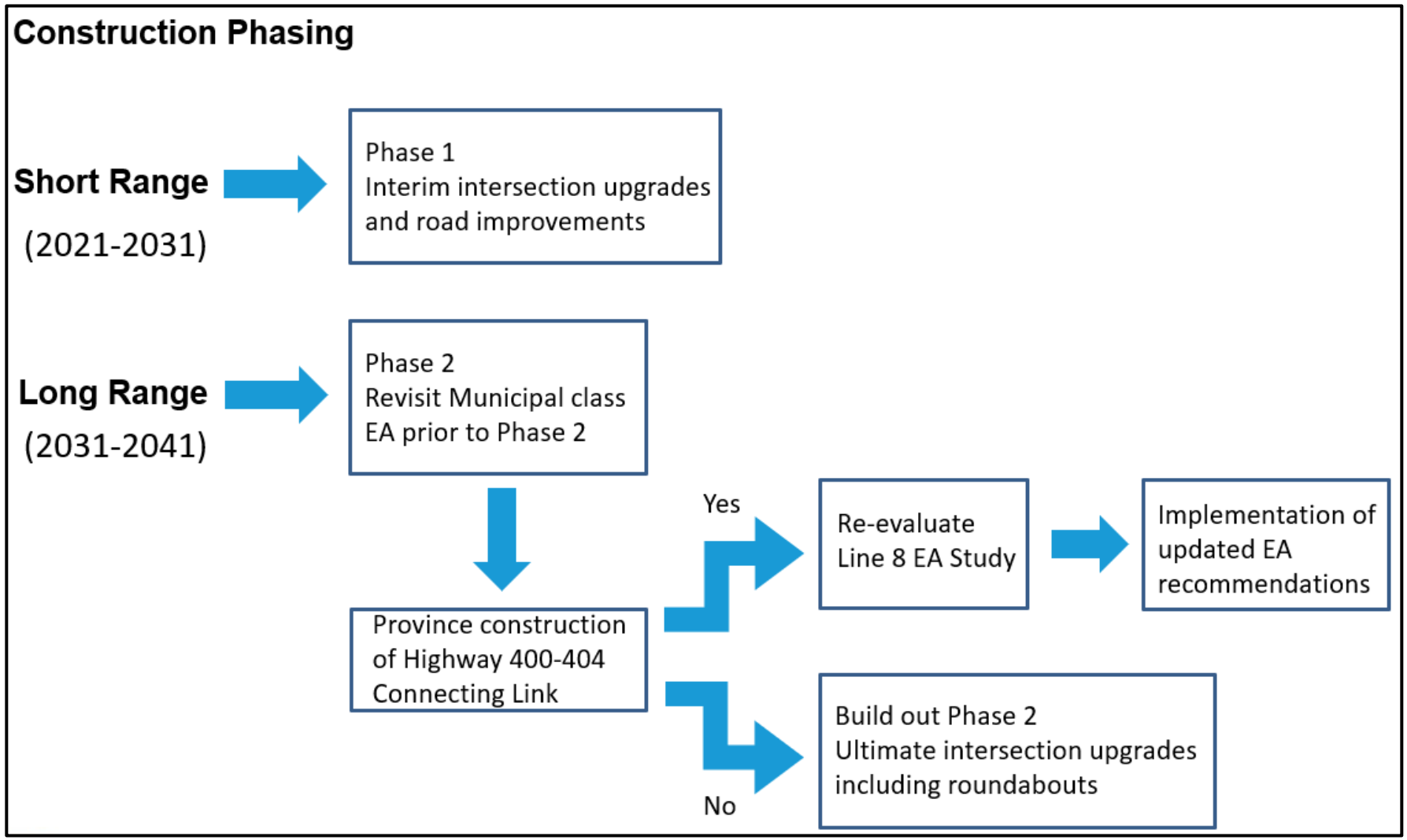
- Line 8 / Reagens Industrial Parkway intersection: maintain as a one-way stop.
- Line 8 / Langford Boulevard intersection: two-lane roundabout;
- Line 8 / Rogers Trail / Summerlyn Trail intersection: two-lane roundabout;

- Line 8 / Professor Day Drive intersection: two-lane roundabout;
- Line 8 / Noble Drive intersection: upgrade the existing signalized intersection to five (5) lanes; and,
- Line 8 / Barrie Street / Yonge Street intersection: conversion to a two-lane roundabout with designated slip roads from Yonge Street to Line 8 and Line 8 to Yonge Street.

Prior to their implementation, this ESR will be revisited pre-2031 to see if the Phase 2 upgrades are still required. This will be determined on whether the Highway 400-404 Connecting Link has been constructed or planned to be constructed by 2031 and the recommendations provided in the Town's future Transportation Master Plan. The Phase 2 upgrades would take place between 2031 and 2041 if they are to be progressed.

The construction phasing for this project is displayed in Exhibit ES2.

Exhibit ES2: Construction Phasing



Potential Environmental Effects and Mitigation Measures for the Preferred Design Concept

The key environmental issues identified during the MCEA study included noise impacts, property impacts, stormwater management and drainage, and archaeology.

Measures have been identified to mitigate potential adverse environmental effects relating to the ultimate preferred design concept. The key potential effects and associated mitigation measures are provided in Section 8.0 and summarized in Exhibit 34 of this ESR.

Public Consultation

This MCEA involved public and agency consultation throughout the duration of the study including consultation with indigenous communities. Input from stakeholders was received during various stages of the study and considered in the development of the ultimate preferred design concept. In addition to notification letters and email correspondence, the following consultation events were held:

- Notice of Study Commencement: a notice was mailed to local residents, relevant agencies and municipal contacts, and was published in the Bradford Times on November 17, 2016 to introduce the study.
- Stakeholder Advisory Committee (SAC) Meeting #1: a stakeholder meeting was held on July 26, 2017, between 6:00 p.m. and 8:00pm, at the BWG Leisure Centre. The purpose of the meeting was to provide an overview of the MCEA process, present the needs and justification for the road improvement, and to receive background information and input from the development community and local residents.
- Technical Advisory Committee (TAC) Meeting #1: the first TAC meeting was held at the Town of Bradford West Gwillimbury Engineering Office on September 15, 2017. The purpose of the TAC meeting was to discuss technical aspects of the proposed design, for example, utility conflicts, drainage, environmental aspects such as archaeology and road design with agencies and utility companies.
- Council Presentation #1: Planmac presented to Council on September 19, 2017 to introduce the project, the MCEA process, background information that had been gathered, and the alternatives solutions to the problem / opportunity statement.
- Public Information Centre #1: the first PIC was held at the Bradford West Gwillimbury Public Library on December 12, 2017, between 5:30 p.m. and 9:00 p.m. The PIC introduced the study and presented the problem / opportunity statement, alternative solutions to the problem / opportunity, and the preliminary preferred solution.
- Community Liaison Group: a meeting was held on November 6, 2018 between the Project Team, Members of Council, and members of the general public. The purpose

of the meeting was to provide an overview of the project, goals and opportunities, work completion to date, proposed design alternatives, and schedule and key milestones.

- SAC Meeting #2: a second stakeholder meeting was held on May 8, 2019, between 6:00 p.m. and 9:00pm, at the BWG Leisure Centre. The purpose of the meeting was to provide an update on the Class EA study process; present the alternative design concepts for the preferred solution; present the preliminary preferred design concept for road and intersection improvements; present background study findings relating to noise mitigation and stormwater management; and summarize tentative timelines to construction completion.
- TAC Meeting #2: the second TAC meeting was held at the Town of Bradford West Gwillimbury Engineering Office on May 15, 2019. The purpose of the TAC meeting was to further discuss technical aspects of the preliminary preferred design concept, particularly future utility relocations. The meeting also provided an opportunity for external agencies to express any concerns prior to the finalization of the preliminary design and publication of the ESR.
- Public Information Centre #2: PIC #2 was held at the Bradford West Gwillimbury Leisure Centre on May 22, 2019, between 5:30 p.m. and 9:00 p.m. The second PIC provided an opportunity for attendees to provide comments on the preliminary preferred design concept and provided an update on next steps and timelines to construction completion.
- Public Information Centre #3: the purpose of PIC#3 was to present the Interim and Ultimate Preferred Design Concept; provide an update on the timing of intersection upgrades; and, answer questions based upon the Province's August 15, 2019 announcement of the proposed Highway 400-404 Connecting Link. The PIC was held at Bradford West Gwillimbury Leisure Centre on November 21, 2019, between 5:30 p.m. and 9:00 p.m.
- Notice of Study Completion: to mark the completion of the study and begin the mandatory 30-day review period, a notice was mailed to inform local residents, relevant agencies and municipal contacts, and was published on XXXXX XX, 2020 in the XXXXX newspapers noting where hard copies of the report could be viewed during regular business hours. This includes the following location:

Town of Bradford West Gwillimbury
Development and Engineering Services
305 Barrie Street, Unit 2
Bradford, ON L3Z 2A9
Tel: (905) 775-5366 ext. 2100

Next Steps

Future Commitments

After completion of the Class EA process and preliminary design stage the next steps for the project are as follows:

- Undertake and complete detail design for the Phase 1 interim upgrades and Phase 2 ultimate upgrades and finalize property requirements;
- Preparation of contract tender documentation incorporating all commitments and mitigation items;
- Continue property acquisition including OLS legal surveys and reference plans, and negotiations and agreements with property owners;
- Undertake required utility relocations; and,
- Construction of proposed design in line with proposed phasing.

Permit and Approval Requirements

The following permits and approvals, and additional studies will be undertaken / acquired during detail design:

- Stage 1 archaeological assessment for lands to be acquired for construction will be completed and submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries for review and concurrence.
- As described in Section 8.3.1, a stage 4 archaeological assessment would be required if site 1, located on the northside of Line 8 between 2580 Line 8 and 2604 Line 8, was disturbed during construction. During detail design, options will be reviewed to the avoid areas that require a stage 4 archaeological assessment.
- LSRCA permitting under Ontario Regulation [O.Reg] 179/06 ("Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation") will be sought as part of the project. The permit shall be pursued during detail design.
- In relation to approvals for stormwater, wastewater and potable water, an application for an Environmental Compliance Approval (ECA) shall be submitted to the Ministry of the Environment, Conservation and Parks (MECP).
- Approvals shall be designed by utility companies for required relocations to accommodate construction. This shall be undertaken during the detail design stage and prior to the release of tender documentation.

If you have any questions or comments on this ESR please contact Marcio Marques, Town of West Gwillimbury Project Manager, at the address below to discuss:

Marcio Marques, P.Eng.
Project Manager, Capital Projects
Town of Bradford West Gwillimbury
305 Barrie Street, Unit 2, P.O. Box 419, Bradford, ON L3Z 2A9
Tel: (905) 778-2055, Ext. 2114;
Email: mmarques@townofbwg.com

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1.0 INTRODUCTION

1.1 Overview and Study Approach

The Town of Bradford West Gwillimbury initiated a Municipal Class Environmental Assessment (MCEA) study for improvements to Line 8 from Barrie Street to Sideroad 10 including Sideroad 10 (300m north and south of Line 8) to Reagens Industrial Parkway in 2016 (Exhibit 1: Study Area).

This MCEA will identify improvements along Line 8 as well as confirming the ultimate configuration of Sideroad 10. The study area for the proposed improvements, as shown in Exhibit 1, including Line 8 from Barrie Street to Sideroad 10 and Sideroad 10 from North of Line 8 to Reagens Industrial Parkway.

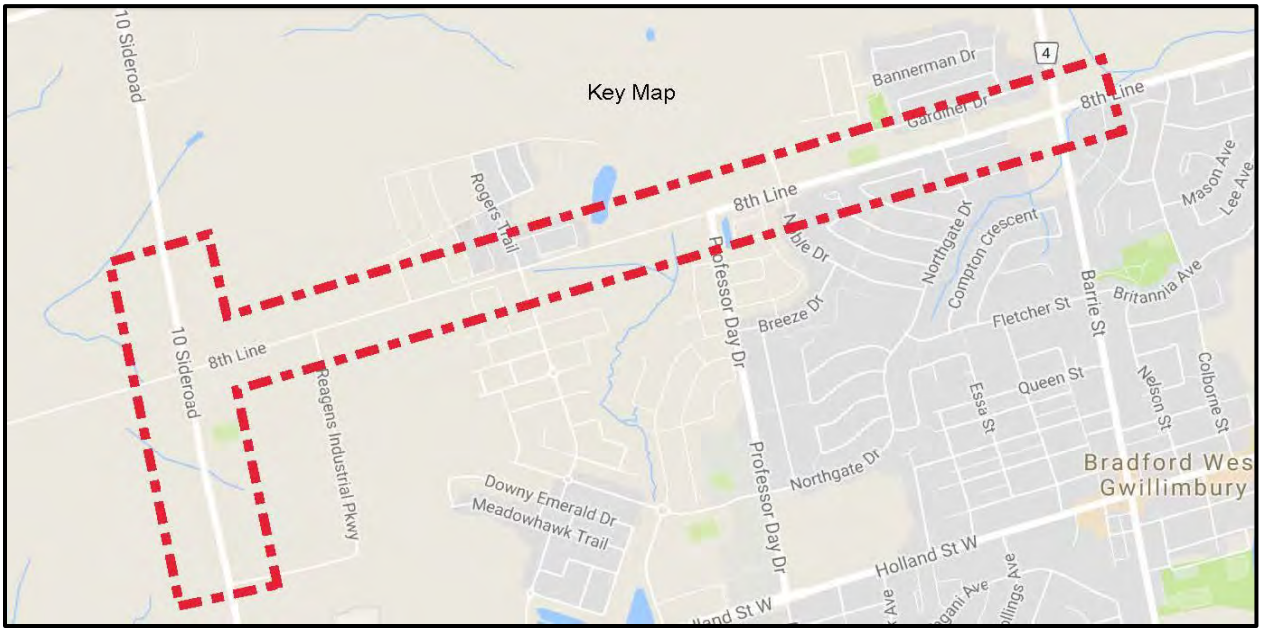
The purpose of this study is to determine the following:

- Assess the existing transportation system and servicing infrastructure in the study area;
- Identify deficiencies to the existing transportation system and servicing infrastructure;
- Identify the location, extent and sensitivity of the existing environments within the study area;
- Develop alternative solutions to address the transportation and servicing needs within the study area and identify impacts associated with the implementation of each;
- Establish appropriate measures required to mitigate any adverse impacts resulting from the proposed transportation and servicing improvements;
- Recommend a preferred design concept to address the existing and future transportation and servicing infrastructure needs; and
- Consider all aspects of the environment, physical, natural, social, cultural and economic; and document the process followed in this Environmental Study Report (ESR) for 30 calendar day public review period.

To best address operational deficiencies and the need for additional east-west capacity in the area, a number of alternatives were examined as part of the study including the potential widening of Line 8, cross-sectional elements, intersection improvements, and the overall impact of such improvements on the social, cultural and natural environments. These alternatives are discussed in later sections of this ESR. Details regarding the process followed to select an appropriate solution to the identified problem / opportunity has also been documented in this report.

The study is being carried out in accordance with the planning and design process for Schedule 'C' projects as outlined in the MCEA parent document (October 2000, as amended in 2007 and 2011), which is approved under the "Ontario Environmental Assessment Act." A key component of the study will be consultation with interested stakeholders (public and agencies).

Exhibit 1: Study Area



1.2 Previous Study

A Schedule 'C' MCEA was completed for Sideroad 10 widening in December 2008 by RJ Burnside, with a study area extending from south of Holland Street West to approximately 300m north of Line 8 and included part of the study area for this project (refer to Exhibit 2). The purpose of the study was to explore the proposed widening of Sideroad 10 to provide sufficient roadway capacity and services to meet future traffic demands.

The Town of Bradford West Gwillimbury (the "Town") completed a Master Servicing Study in January 2003, meeting the requirements of Phase 1 and 2 of the MCEA process, with the 2008 ESR satisfying Phases 3 and 4 of the same process.

The findings of the study confirmed that the preferred design concept was a combination of a five (5) lane cross section (two (2) travelling lanes in each direction and one (1) common centre left turn lane) and a four (4) lane cross section (two (2) travelling lanes in each direction). Both design cross sections included curb and gutter and storm sewer drainage systems and sidewalks ultimately on both sides of Sideroad 10.

The purpose of the MCEA process being undertaken by Planmac is to confirm the ultimate configuration of Sideroad 10 based upon the findings of the 2008 Class Environmental Study, in addition to determining the ultimate improvements along Line 8.

1.3 Report Structure

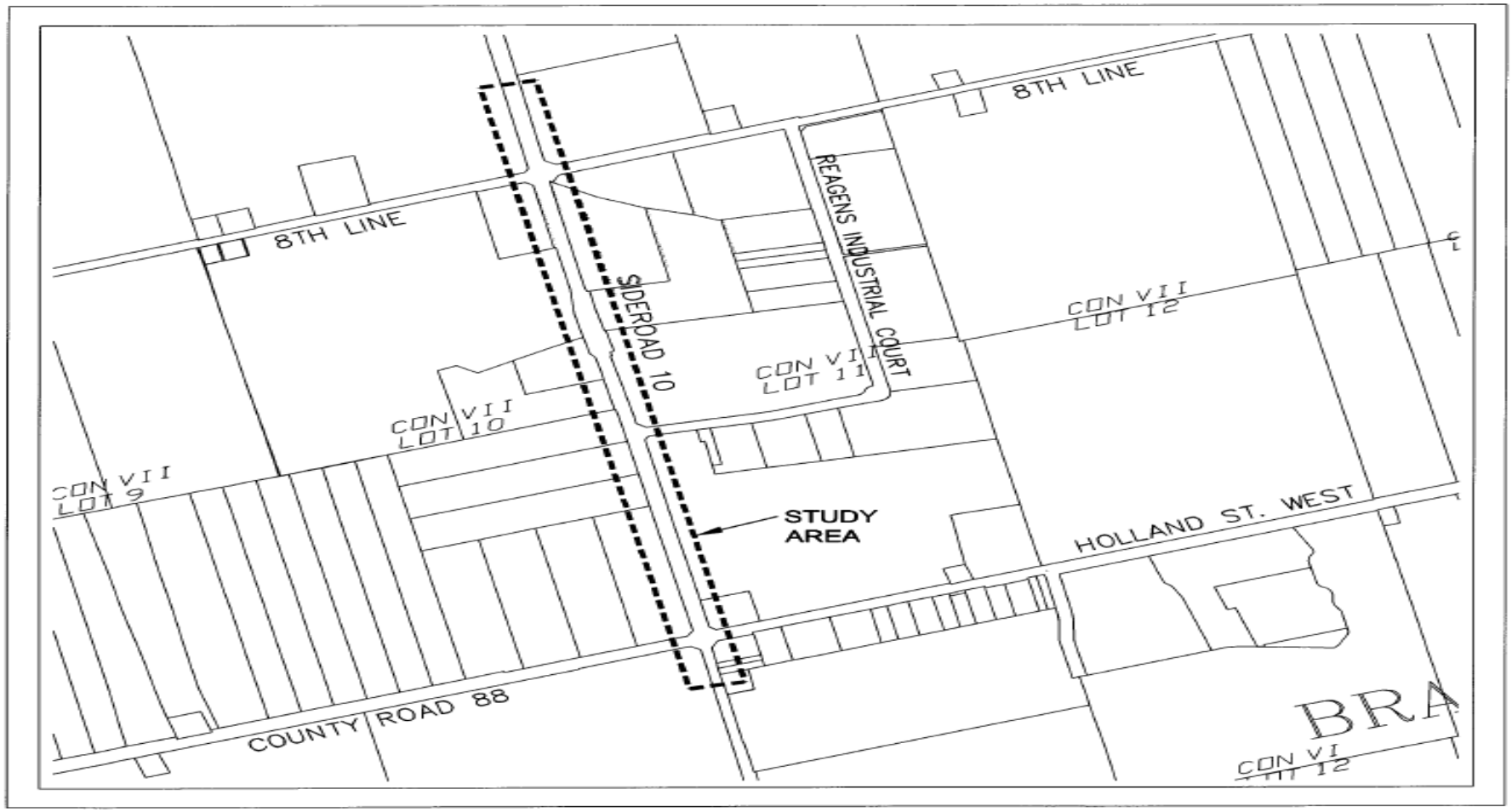
This ESR is structured as follows to reflect the MCEA process:

- Section 1.0: Introduction
- Section 2.0: Planning Process
- Section 3.0: Existing Conditions
- Section 4.0: Problem and Opportunity Statement
- Section 5.0: Identification and Evaluation of Alternative Solutions
- Section 6.0: Alternative Design Concepts
- Section 7.0: Preferred Design Concept
- Section 8.0: Potential Effects and Mitigation Measures for the Preferred Design Concept
- Section 9.0: Public and Stakeholder Engagement
- Section 10.0: Next Steps

This is with the exception of Section 9.0 (Public and Stakeholder Engagement) which has taken place throughout the duration of the project, and its position in the report structure does not reflect the stage in which consultation has taken place during the MCEA process.

Following the ESR process and 30-day stakeholder review period, the detail design of the preferred design concept will be progressed and finalized, along with any outstanding permitting / approvals, property acquisition, and utility relocations required. This will then lead to construction and implementation as discussed in Section 10.0.

Exhibit 2: Sideroad 10 Widening ESR Study Area (December 2008)



2.0 PLANNING PROCESS

2.1 Ontario's Environmental Assessment

Ontario's Environmental Assessment (EA) Act establishes a process for reviewing the potential environmental effects of a proposed project prior to its implementation. It exists to provide for the protection, conservation, and wise management of Ontario's environment. To achieve this, the proponent must conduct an EA for any undertaking that has the potential for adverse environmental effects, including roads, transit, wastewater, and stormwater infrastructure projects.

Two (2) main EA planning and approvals processes are established through the EA Act:

- **Class EA**: this process allows specialized categories to be created for similar or comparable projects, which have predictable and manageable environmental effects. After a parent Class EA process has been prepared and approved by the Minister of the Environment for a specific category of project, eligible projects which follow that parent process are pre-approved. Provided that the proponent follows the appropriate parent Class EA approval process for the undertaking, they will be deemed to have met the requirements of the EA Act. The Municipal Class EA is one of the approved parent Class EA documents.
- **Individual E.A. (Part II of the EA Act)**: this process applies to projects for which a project-specific Terms of Reference and a subsequent Individual Environmental Assessment are carried out and submitted to the Minister of the Environment for review and approval.

This study is following the MCEA planning process, which shall be undertaken in such a way as to allow a reviewer to trace each step of the process. In particular, the documentation should explain the reasons for the criteria used to identity and assess the alternatives, the proponent's weighing of these criteria and the decision-making process followed. The process also requires consultation with the public, stakeholders and government review agencies in order to obtain input, ensure regulatory compliance, and ultimately achieve acceptance for the preferred alternative. The MCEA process is further discussed in Section 2.2.

2.2 Municipal Class Environmental Assessment

Municipal infrastructure projects such as this project are included in the Municipal Class Environmental Assessment parent document, prepared by the Municipal Engineers Association (2000, as amended in 2007 & 2011). The MCEA parent process provides a standardized method for considering municipal infrastructure projects that are: recurring; similar in nature; generally limited in scale; exhibit a predictable range of environmental effects; and responsive to mitigation measures.

2.2.1 Municipal Class EA Study Phases

The MCEA process includes up to five (5) phases of assessment as outlined in Exhibit 3. The extent to which each phase must be followed is directed by the schedule of MCEA, as outlined in the following section.

2.2.2 Municipal Class EA Project Schedules

Based on their characteristics, the MCEA parent document categorizes eligible projects into one of the following schedules: A, A+, B, or C. The applicable schedule dictates the depth of the assessment that must be achieved through the planning and design phases of the study.

The following briefly outlines the different steps and level of effort required for each of the schedules. This study will satisfy the requirements of Schedule 'C'.

Schedule 'C' activities generally include the construction of new facilities and major expansion to existing facilities, which may have the potential for significant environmental effects. Projects falling within this Schedule require the proponent to complete phases 1 through 4 of the MCEA process. Specifically, the proponent must:

- Undertake more detailed study, public consultation and documentation. This includes contacting affected members of the public on at least three (3) occasions during the study and consulting with relevant regulatory agencies; and
- Prepare an ESR documenting the process that was followed; comments received; responses provided; and, commitments made to address potential effects

When completed, the ESR is made available for agency and public review for 30 calendar days. If no Part II Orders, or "bump-up requests", are received, the project may proceed to Phase 5, Implementation.

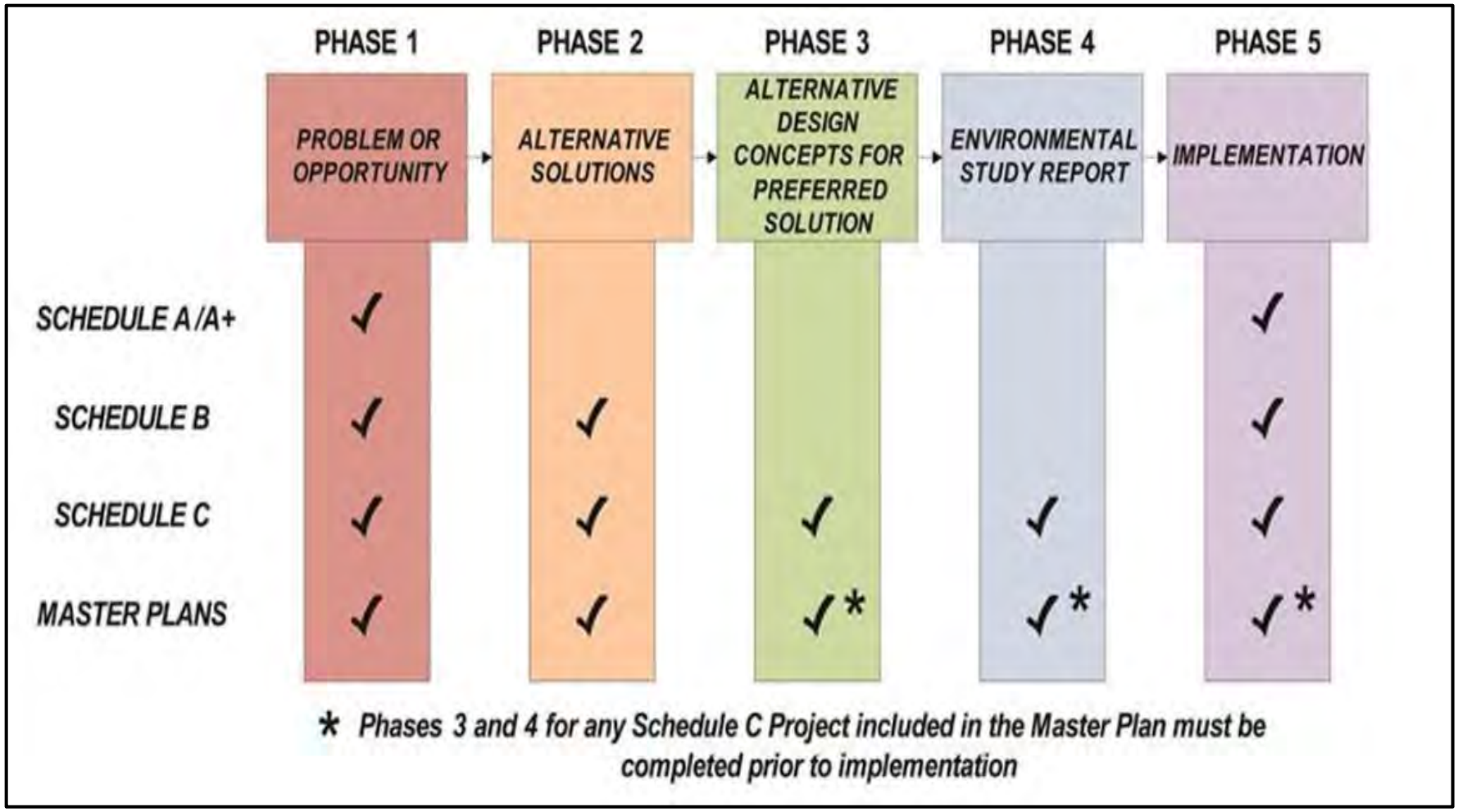
2.3 Canadian Environmental Assessment Act

On July 6, 2012 the Canadian Environmental Assessment Act (CEAA 2012) came into effect which focuses on the assessment of "designated projects" and is no longer "trigger" based. Projects are considered a "designated project" under CEAA 2012 if they fall within a:

- wildlife area – per section 2 of the Wildlife Area Regulations; and/or
- migratory bird sanctuary – as set out in the schedule to the Migratory Bird Sanctuary Regulations.

After reviewing the Regulations Designating Physical Activities, it is understood that the proposed works is not considered to be a "designated project". Therefore, an assessment under the CEAA 2012 is not necessary.

Exhibit 3: Municipal Class Environmental Assessment Phases



2.4 EA Documentation Filing

The filing of this ESR completes the planning and preliminary design stage of the project. The ESR was placed on the public record and made available for review for a 30-day period starting XXXXX XX, 2020 and ending on XXXXXX XX, 2020. A public notice (Notice of Study Completion) was published to announce commencement of the review period. To facilitate public review of the document, hard copies of the report were made available during regular business hours at the following location:

Town of Bradford West Gwillimbury

Development and Engineering Services

305 Barrie Street, Unit 2

Bradford, ON L3Z 2A9

Tel: (905) 775-5366 ext. 2100

The Notice of Study Completion advises that if, after reviewing the report, stakeholders had questions or concerns they should follow this procedure:

- Contact Marcio Marques, Town of West Gwillimbury Project Manager, at the address below to discuss your questions or concerns:

  Marcio Marques, P.Eng.

  Project Manager, Capital Projects

  Town of Bradford West Gwillimbury

  305 Barrie Street, Unit 2, P.O. Box 419, Bradford, ON L3Z 2A9

  Tel: (905) 775-5366, Ext. 2114
  Email: mmarques@townofbwg.com

- Arrange a meeting with the above, if you have significant concerns that require more detailed explanations.
- If you raise major concerns, the Town will attempt to resolve the issue(s). A mutually acceptable time period for this meeting will be set. If the issues remain unresolved, you may request that the Minister of the Environment (see address below), by order, to require the Town to comply with Part II of the EAA before proceeding with the project, this is called a "Part II" Order request. The Minister may make one of the following decisions:
  - Deny the request with or without conditions
  - Refer to matter to mediation; or
  - Require the Town to comply.

The Class EA process contains a provision that allows for changing the status of a project from a Class EA to an Individual Environmental Assessment. This is called a "Part II Order." Members of the public, interest groups, government agencies and others may request that an Individual Environmental Assessment be prepared for a specific project if they feel their concerns have not been addressed through the Class EA planning process. The Ministry of the Environment, Conservation and Parks (MECP) determines whether or not this is necessary and the decision in this regard is final.

If the "Part II Order" is granted, the project cannot proceed unless an Individual Environmental Assessment is prepared. The Individual Environmental Assessment is subject to a formal government review and approval process and may result in a formal public hearing. Anyone wishing to request a "Part II Order" of this MCEA Study must submit a written request by the end of the review period (XXXXX XX, 2020) to the Minister of the Environment at the following address, with a copy sent to the Town of Bradford West Gwillimbury:

Ministry of the Environment, Conservation and Parks address:

Honorable Jeff Yurek
Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, ON
M7A 2T5

Town of Bradford West Gwillimbury address:

Marcio Marques, P.Eng.
Project Manager, Capital Projects
Town of Bradford West Gwillimbury
305 Barrie Street, Unit 2, P.O. Box 419
Bradford, ON
L3Z 2A9

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

3.1 Natural Environment

3.1.1 Designated Natural Areas and Natural Heritage Features

There are no natural heritage features such as Areas of Natural and Scientific Interest (ANSI) or other protected areas identified within the study area, nor Provincially Significant Wetlands (PSW), or significant wildlife habitats within the study area.

Unevaluated wetlands are present to the north and south of Line 8, most notably to the west of Professor Day Drive (Natural Heritage Information Centre (NHIC) Make-a-Map online database). This is discussed further in Section 3.1.5.

Aquafor Beech Limited completed a Natural Environmental Assessment Report including terrestrial and fisheries investigations, ecological land classification, and tree species and vegetation for the study area as discussed in the following sections. A copy of the report can be found in Appendix A.

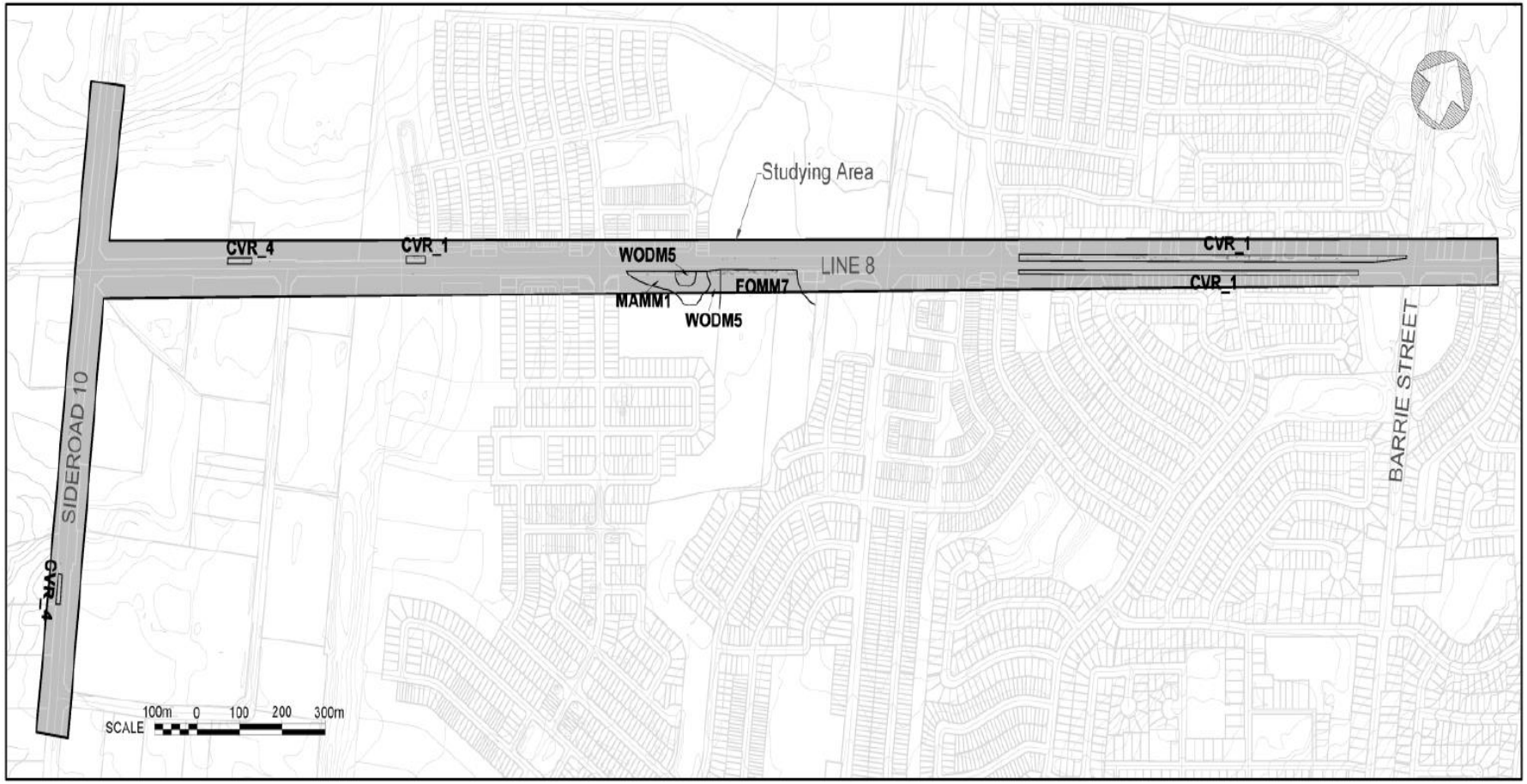
3.1.2 Ecological Land Classification

The study area was investigated and has been described according to the Ontario ecological land classification (ELC) system (MNR, 2009). The ELC system is used to describe, identify and classify various systems to indicate natural regions based on ecological factors (e.g. habitats, land use type, vegetation, topography, soils etc.). Within the study area six (6) ELCs were identified and are summarized below:

- Fresh-Moist White Cedar Hardwood Mixed Forest Ecosite (FOMM7);
- Fresh-Moist Deciduous Woodland Ecosite (WODM5);
- Graminoid Mineral Meadow Marsh Ecosite (MAMM1);
- Low Density Residential (CVR_1);
- Rural Property (CVR_4); and
- Transportation right-of-way (CVI_1).

Among the identified ELCs, FOMM7, WODM5, and MAMM1 are natural areas, and CVR_1, CVR_4 CVI1_1 are anthropogenic features. Low Density Residential (CVR_1) and Rural Property (CVR_4) include areas of road right-of-way (ROW) at the front of the properties as residential yards often extend up to the road shoulder. The transportation ROW includes areas fronted by residential developments that are separated from the ROW (fences, sidewalks), agricultural, institutional, industrial areas and open space. The ELC mapping is illustrated in Exhibit 4. Please note that all the road ROW, which is not shown on the exhibit (areas except for CVR_1 and CVR_4) is identified as CVI_1.

Exhibit 4: Ecological Land Classifications



3.1.3 Tree Species and Vegetation

A comprehensive vegetation inventory of trees 10cm or greater in diameter was completed on February 16 and 17, 2017 by Aquafor Beech Limited. The extent of the field investigation and inventory was from the road ROW of Line 8 from Line 8 / Barrie Street to Sideroad 10, and north and south of Line 8 and Sideroad 10 as shown on Exhibit 4. Trees within the ROW were assessed and tagged, and those on private residential property were assessed but not tagged and were given a NT# (no tag) in the inventory.

The following data were collected:

- Species;
- Diameter at breast height – DBH (cm);
- Crown diameter (tree's canopy) measured in metres;
- Defects and decline indicators;
- Overall condition; and
- Preservation priority.

Summary of Findings

A total of 157 trees or tree groupings were tallied within the study area. Just over half of all the trees surveyed (54%) are located on the south side of Line 8 between Professor Day Drive and Summerlyn Trail, which is the only natural area within the study scope. Tree population based on ELC are summarized in Exhibit 5.

Exhibit 5: Trees by ELC Classification (Southern Ontario ELC, OMNR, 2008)

ELC Classification	#Trees	% of Inventory
CVR_1 – Low Density Residential & CVR_4 – Rural Property	60	38
FOMM7 – Fresh-Moist Cedar Hardwood Mixed Forest Ecosite	57	36
WODM5 – Fresh-Moist Deciduous Woodland Ecosite	20	13
MAMM1 – Graminoid Mineral Meadow Marsh Ecosite	7	4
CV_1 Transportation Right-of-Way	13	8

Tree Condition

The majority (67%) of all the trees surveyed are in fair-to-good to good condition based on dormant season observations. About 33% are in fair, fair-to-poor or poor condition. Symptoms of stress which are displayed through foliage may not be as apparent in deciduous trees. The most apparent stressor of trees in the study area is damage from road salt spray and sodic soils. Winter road salting activities affect trees that are closest to the road surface. Winter symptoms show as multiple dieback of twigs in deciduous trees resulting in clusters on the ends of branches and low vigour (slow twig end growth). In conifers it shows as dieback and discoloured foliage. Trees in the forest and woodland areas, which is fairly moist resulting in shallow root systems, have a greater tendency for wind throw by uprooting and many individuals were observed, especially the cedar.

3.1.4 Wildlife, Species at Risk and Species of Conservation Concern

Primary and secondary information sources were utilized to assess the presence of species at risk (SAR) and species of conservation concern within 120m of the study area. For the purpose of this study, SAR are defined as species listed as endangered, threatened, or of sppecial concern by the Committee on the Status of Species at Risk in Ontario (COSSARO). Species of conservation concern are defined as species listed as endangered, threatened, or of special concern as listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); species with global ranks of G1-G3; and species with sub-national / provincial ranks of S1-S3.

The Ministry of the Natural Resources and Forestry (MNRF) Midhurst district indicated that there is the potential for butternut (endangered), snapping turtle (special concern), northern myotis (endangered), little brown myotis (endangered), and tri-coloured bat (endangered) to occur within the study area. Data collected from the NHIC Make-a-Map online database provided five (5) species accounts of provincially rare species previously recorded within 1 km of the study area.

In total, ten (10) SAR and other species of conservation concern have previously been recorded within or adjacent to the study area and include the following: butternut; weak bluegrass; bobolink; eastern meadowlark; little brown myotis; northern myotis; tri-coloured bat; northern map turtle; snapping turtle; arrow clubtail; and green-stripped darner. Based upon the presence of agricultural fields within and adjacent to the study area, one (1) additional species, eastern meadowlark (strunella magna), was added at the discretion of the study team. Of the 11 species, weak bluegrass, arrow clubtail, and green-stripped darner were determined not to be present within the study area due to lack of suitable habitat.

No barn swallow or barn swallow nesting were observed during the tree survey field investigations undertaken February 16 and 17, 2017 within the ROW.

3.1.5 Fisheries, Aquatic Ecosystems and Wetlands

Three (3) unnamed tributaries are present within the study area. The first tributary crosses Sideroad 10 at two (2) locations and at one location on Line 8 to the northwest of the Line 8 / Sideroad 10 intersection, as shown on Exhibit 6. The second tributary crosses Line 8 approximately 160m west of Professor Day Drive, and the third tributary crosses Line 8 at approximately 140m east of the Line 8 / Barrie Street / Yonge Street intersection and on Barrie Street, approximately 140m south of the intersection.

The first and third unnamed tributary are considered to be intermittent drainage features and may act as supporting fish habitat during wet conditions. The second unnamed tributary is a significant drainage feature conveyed by a large box culvert across Line 8 connecting wetland areas north and south of Line 8.

Existing aquatic ecology conditions for the Bradford West Gwillimbury Line 8 Class EA study area was assessed and summarized using background information along with in-field observations from Aquafor Beech Limited field staff. A summary of the existing aquatic ecology conditions is provided below. The extent of the study covers approximately 3.2 km along Line 8 and encompasses three (3) tributary crossings. The location of the tributary crossings is shown below in Exhibit 6.

According to the West Holland River Subwatershed Management Plan, the study area falls within one of the largest subwatersheds in the Lake Simcoe Basin and includes many tributaries that originate within the Oak Ridges Moraine (Lake Simcoe Region Conservation Authority (LSRCA), 2010). Fraser Creek, of which the three (3) tributaries are online with, is not one of the tributaries influenced by the moraine and therefore differs in thermal regime and aquatic communities from those that originate in the moraine. The Subwatershed Management Plan notes that Fraser Creek generally shows characteristics of impairment typically associated with agricultural adapted watercourses (LSRCA, 2010).

The area of Fraser Creek within the study area shows influence from adjacent land use including agriculture, residential developments and industrial areas, with much the tributary reaches showing signs of channelization and realignment to accommodate development and stormwater management infrastructure (LSRCA, 2010). This information was confirmed by Aquafor Beech Limited staff on May 8, 2019, with all tributaries displaying stormwater influence, hardened and channelized sections, and little riparian cover. Results from benthic macroinvertebrate communities provided by LSRCA support that Fraser Creek is impaired (LSRCA, 2010).

Exhibit 6: Tributary Crossings within the Study Area

Fish community studies were not available for the study area. However, community results as provided by the LSRCA observed 34 fish species within the West Holland River subwatershed. The Subwatershed Management Plan notes that 98 known barriers exist within the subwatershed, with an emphasis put on Fraser Creek, indicating a lack of connectivity for fish passage. However, the location and extent of these barriers are unknown. Fraser Creek should be considered fish habitat, potentially containing fish or fish habitat at any time during any given year. A list of potential fish species is displayed below in Exhibit 7.

While redside dace (clinostomus elongatus), an aquatic species at risk (SAR), is listed among the species above, the Department of Fisheries and Oceans Canada (DFO) does not recognize the study area as containing fisheries SAR (or having the potential to contain SAR) or containing critical habitat for SAR (Department of Fisheries and Oceans, 2019). Furthermore, the MNRF and NHIC does not report any provincial SAR within the study area, either presently or historically.

Confirmation was provided by MNRF Midhurst District that any required in-water works during construction be undertaken between July 16 and March 14 to protect spring spawning fish species.

Unevaluated wetlands are present at the following locations within the study area:

- to the north and south of Line 8 between Rogers Trail / Summerlyn Trail intersection and Professor Day Drive; and,
- 270m north of Sideroad 10 / Reagens Industrial Parkway intersection.

No PSWs are present within the study area.

Exhibit 7: Fish Species of the West Holland River Subwatershed (LSRCA, 2010)

Common Name	Scientific Name
Black Crappie^	Pomoxis nigromaculatus
Blacknose Dace	Rhinichthys atratulus
Bluntnose Minnow	Pimephales notatus
Bowfin	Amia calva
Brassy Minnow	Hybognathus hankinsoni
Brook Stickleback	Culaea inconstans
Brook Trout	Salvelinus fontinalis
Brown Bullhead	Ameiurus nebulosus
Central Mudminnow	Umbra limi

Common Name	Scientific Name
Common Carp*	Cyprinis carpio
Common Shiner	Luxilus cornutus
Creek Chub	Semotilus atromaculatus
Emerald Shiner	Notropias atherinoides
Fathead Minnow	Pimephales promelas
Golden Shiner	Notemigonus crysoleucas
Goldfish*	Carassius auratus
Greenside Darter	Etheostoma blennioides
Iowa Darter	Etheostoma exile
Johnny Darter	Etheostoma nigrum
Largemouth Bass	Micropterus salmoides
Longnose Dace	Rhinichthys cataractae
Mottled Sculpin	Cottus bairdi
Northern Pike	Esox lucius
Northern Redbelly Dace	Phoxinus eos
Pearl Dace	Margariscus margarita
Pumpkinseed	Lepomis gibbosus
Rainbow Darter	Etheostoma caeruleum
Redside Dace~	Clinostomus elongatus
Rock Bass	Ambloplites rupestris
Slimy Sculpin	Cottus cognatus
Spottail Shiner	Notropis hudsonius
White Sucker	Catostomus commersoni
Yellow Bullhead	Ameiurus natalis
Yellow Perch	Perca flavescens
*non-native invasive species ~endangered species ^non-native species	

3.1.6 Drainage

The project area for this study lies within the West Holland Subwatershed. Existing drainage for this project follows a southerly pattern in two (2) directions. The area east of Professor Day Drive drains south, then easterly toward an open channel that leads to the West Holland River. The areas west of Professor Day Drive drain south, then -+westerly toward various open channels that lead to Fraser Creek.

The area and slope characteristics of the drainage areas are summarized in Exhibit 8 and are delineated in Exhibit 9. Appendix B includes a detailed Existing Condition map for each area as outlined in the Interim Stormwater Management Report (Aquafor Beech Limited, 2017).

Exhibit 8: Drainage Area and Slope Characteristics

	Drainage Area 1	Drainage Area 2	Drainage Area 3	Drainage Area 4	Drainage Area 5
Area (ha)	2.4	3.4	3.9	1.44	2.26
Average Slope (%)	0.8	0.3	0.8	3.4	3.8

Area 1 drains south along Sideroad 10 toward an open channel that flows west toward Fraser Creek.

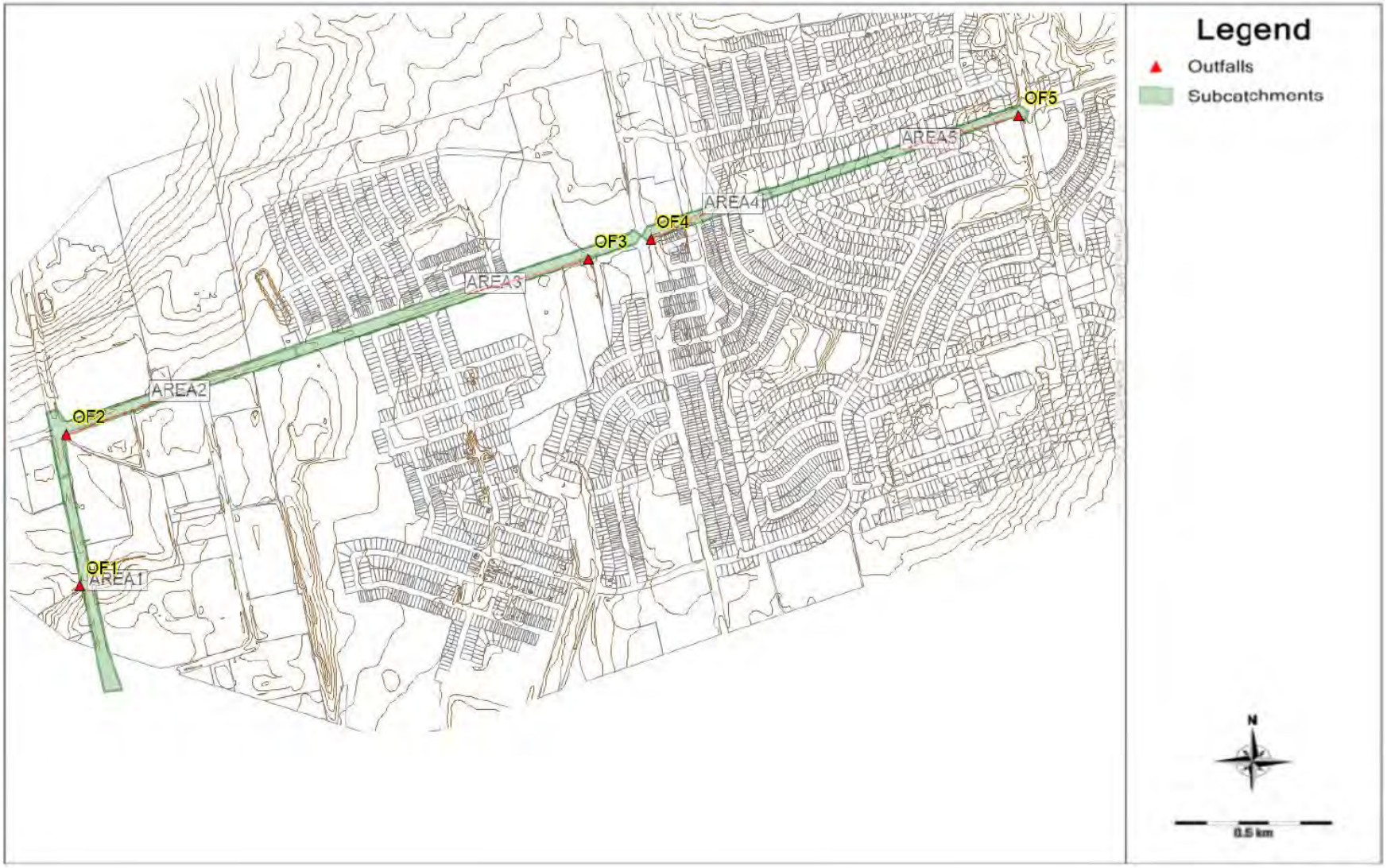
Area 2 contains four (4) channel crossings within the project limits. Immediately east of Line 8 / Sideroad 10 Intersection lies an existing culvert that crosses Line 8 from north to south and outlets into an open channel that travels south. To the west of this intersection lie two (2) smaller culvert crossings that cross Line 8 from north to south, which both outlet into the same channel. This channel continues 30m south of the intersection and then turns eastwards passing under Sideroad 10 and then continues southeast adjacent to 3075 Line 8.

Area 3 contains another existing culvert crossing, which lies just west of Professor Day Drive and crosses Line 8 from north to south. This culvert directs runoff from an existing stormwater pond located immediately north of Line 8. The culvert outlets into a natural open channel that travels souths, and eventually into Fraser Creek.

Area 4 flows westerly toward Professor Day Drive. The northern portion of the road drains into an open space north of Line 8, and then enters a culvert, which outlets into the existing open channel to the southwest of Line 8 and Professor Day Drive. The southern portion of the road enters catch basins and outlets into the same open channel southwest of the intersection.

Area 5 contains open grass channels along the northern portion of Line 8 east of Professor Day Drive, which include catch basins that connect to an existing storm drain that travels east along Line 8. Curb, gutter, and catch basins are present along the south side of Line 8 from Professor Day Drive. Runoff eventually enters an open channel at the southwest corner of Line 8 and Barrie St. This channel flows south, then crosses, heading east, through an existing culvert. Runoff eventually outlets into the large open channel at the northeastern corner of Barrie Street and Line 8.

Exhibit 9: Drainage Boundaries



3.2 Land Use and Planning Context

3.2.1 Provincial Policy Statement

The current Provincial Policy Statement (PPS), 2014, provides guidelines for development "while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment." The PPS lays out the policies for building strong communities and identifying current and projected infrastructure needs. The PPS also establishes the provincial interest and direction in transportation systems and planning through the following policies:

- Section 1.6.7.1 – "Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs."
- Section 1.6.7.3 – "As part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections that cross jurisdictional boundaries."
- 1.7.1(f) – "Providing for an efficient, cost effective, reliable multi-modal transportation system that is integrated with adjacent systems and those other jurisdictions and is appropriate to address expected growth."

3.2.2 Official Plan of the County of Simcoe (Approved December 2016)

The County of Simcoe Official Plan speaks to maintaining and improving "the County's multimodal transportation system to provide efficient automobile, truck, transit, and where feasible, bicycle and pedestrian routes which link settlement areas and other activity nodes throughout the region, separate through traffic from local traffic, link with other forms of transportation, and provide for the movement of goods" (p. 92).

Section 4.8 (Transportation) of the plan notes that such improvements will be achieved through the following:

- Long-term multimodal transportation system planning;
- Improving roads, intersections and traffic control devices;
- Constructing new road sections and widening existing road section where warranted;
- Employing traffic management techniques to achieve more efficient use of roads;
- Requiring appropriate conditions of approval for development applications; and
- Considering the needs of pedestrians and cyclists in road design.

Section 4.8.4 emphasizes the importance of planning for active transportation as a mode of transportation that supports healthy living, economic development, and tourism opportunities.

To meet the above noted transportation needs the County has identified that the first action is to update the Transportation Management Plan in conjunction with reviews of the Official Plan.

Section 4.8.15 identifies the County's encouragement and support for transportation connectivity between towns and cities, in particular in Section 4.8.15 (a) Highway 400/404 Link ("Bradford Bypass") as a goods movement and transit corridor.

3.2.3 Official Plan of the Town of Bradford West Gwillimbury (Consolidated October 2002)

The current Official Plan provides guiding principles for the Town including principles for Transportation and Transit Services, which emphasizes the "importance of improving the movements of automobile traffic and new pedestrian facilities in neighbourhoods is recognized and will be the subject of a comprehensive Transportation Study which reflects the initiatives set out in" the Official Plan (Section 3.4.8.1).

Schedule "F-2" (Transportation) of the Official Plan displays existing major transportation links within the Town and potential future transportation works (i.e. the Highway 400/404 Connecting Link).

Within the study area Line 8, Sideroad 10 and Barrie Road are considered as "Arterial (Major) Roads" and Professor Day Drive as an "Arterial (Minor) Road" as displayed in the extract in Exhibit 10.

Existing urban land use with the Town is displayed in the below extract from Schedule B of the Official Plan (Office Consolidation: August 1, 2010) and displayed below in Exhibit 11.

The predominant land use within the study area is designated as Residential with areas of Industrial and Industrial / Commercial to the far west in the vicinity of Sideroad 10. An area of Service / Commercial is present at the far east extent of the study area at the Line 8 / Barrie Street / Yonge Street Intersection. A Special Policy Area – Line 8 is present just to the west of the Line 8 / Sideroad 10 Intersection and a further Special Policy Area (Section 11.3.11) just to the east of Reagens Industrial Parkway.

Exhibit 10: Schedule F-2 (Transportation)

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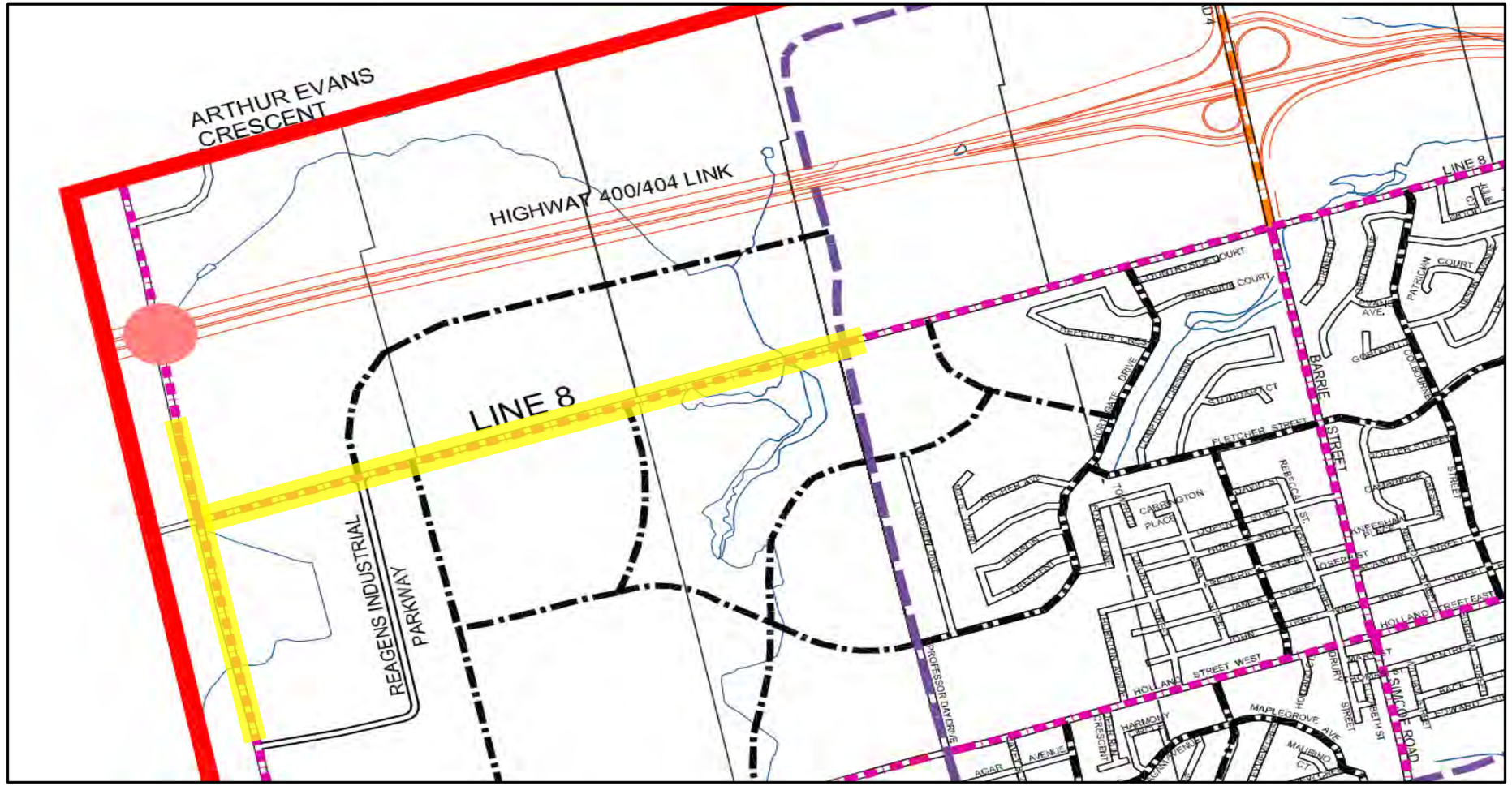
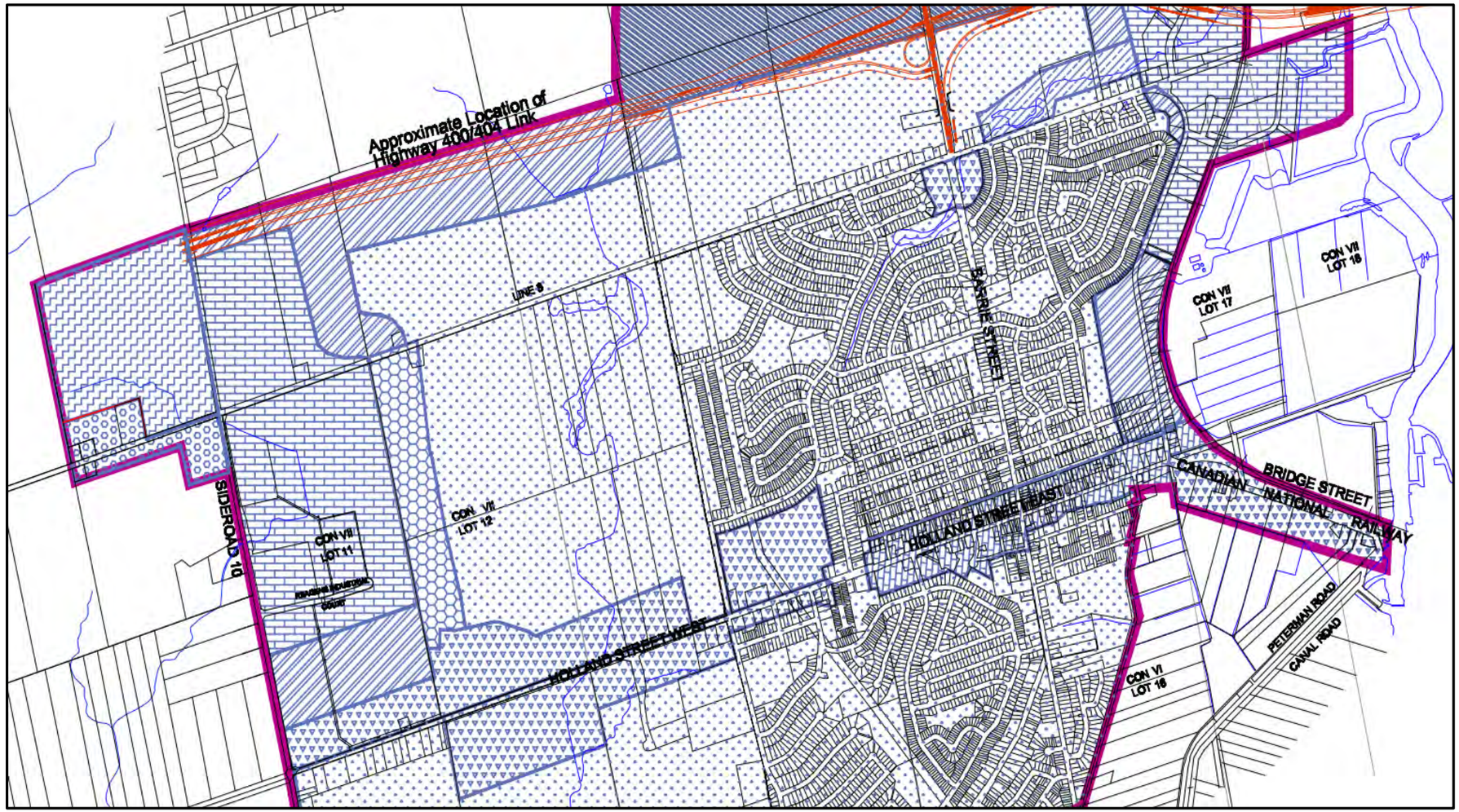
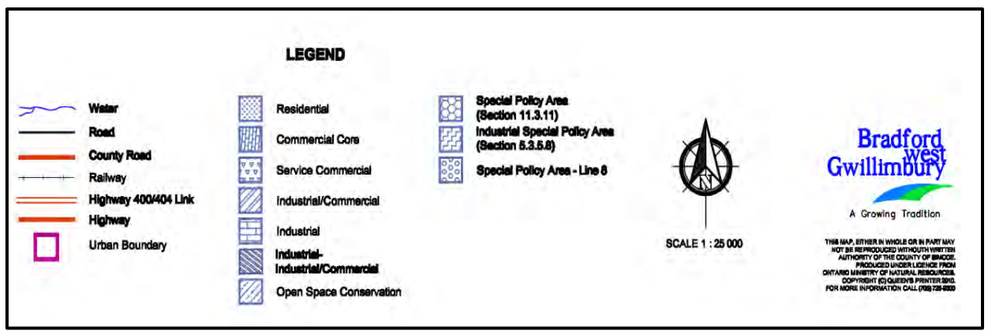


Exhibit 11: Schedule B (Urban Area Land Use Designations)





3.2.4 The Town of Bradford West Gwillimbury – Official Plan Review 2016 - 2017

The Town is currently undergoing a review to update the Town's 2002 Official Plan. In 2016, the Town engaged WSP / MMM Group to carry out a phased review in order to develop the new Official Plan. The three (3) phases being completed include (p109 of 120):

- Phase 1: amendments for the first four (4) main issues (employment land review; growth and population distribution; downtown Bradford revitalization; and seniors housing option);
- Phase 2: policy directions report – involves a review of all policy areas not covered on Phase 1. This work included a community workshop and presentation to Council; and,
- Phase 3: new Official Plan – once the Policy Directions Report is complete, work will begin on preparing a new Official Plan to replace the current 2002 Official Plan.

Phase 1 and 2 have been completed and Phase 3 is near completion with a Draft Official Plan being submitted for public review on March 27, 2018, prior to the Public Open House on April 10, 2018 and Public Meeting that took place on April 30, 2018. Stakeholder and public consultation have taken place through each of the phases via stakeholder meetings, public open houses and meetings.

Until the new Official Plan is approved, the 2002 Official Plan is still current; however, review of the prerequisite draft materials to the Final new Official Plan is useful to this MCEA process to identify proposed development and also the Town's vision for the future.

<u>Recommendation Report for Phase 1 Official Plan Amendment Update (February 7, 2017)</u>

The above noted recommendation report was submitted to Council to provide an update on proposed Official Plan Amendments (OPA) for the identified four (4) main issues at Phase 1 (employment land review; growth and population distribution; downtown Bradford revitalization; and seniors housing option).

With regards to land use within the study area, Appendix A (Study Maps and Additional Study Tables) of the report contains a figure titled "Residential Supply Bradford" that displays proposed residential developments. Between Reagens Industrial Parkway and Nobles Drive on Line 8 there are several parcels of Proposed / In Progress residential supply on either side of the road, along with a parcel of Uncommitted Residential Supply just to the west of the Gardiner Drive / Noble Drive and Line 8 intersection.

Areas of vacant employment lands (as of June 2016) are also identified in Appendix A within the report "Discussion Paper, Employment Lands Official Plan Review, Bradford West Gwillimbury" (Urban Metrics, October 2016). These include a small vacant parcel of employment land within the existing Reagens Industrial Park, as well as larger parcels to the north of Line 8.

The recommendation report reveals that within the MCEA study area significant areas of residential development are taking place and will continue to take place into the near future adjacent to Line 8. Vacant designated employment spaces are available but to a lesser extent, given the existing volume of proposed residential development in the study area.

Directions Report – Phase 2 Official Plan Review (October 3, 2017)

Section 6.5 of the Directions Report provides a summary of the Town's plan to develop a resilient, sustainable infrastructure, which includes transportation. The following key policy directions for transportation include:

- "Provide policies to ensure that the existing infrastructure can serve the needs of existing and future development, and that adequate infrastructure is in place prior to proceeding with new development.
- Review the existing road hierarchy in the Official Plan to confirm if appropriate rights-of-way widths and access requirements are identified.
- Corridors and rights-of-way for significant transportation facilities shall be planned for and protected to serve long-term needs with adherence toward a "complete streets" design model. Development that could preclude the use of a corridor or ROW for its long-term purpose should not be permitted, with supportive criteria provided as appropriate.
- Promote the development of active transportation infrastructure (sidewalks, bike lanes, increase number and frequency of transit routes) and developments which maximize on these active opportunities to promote future public transportation use and trip reduction, and allow for healthy resident lifestyles—in advance of a future Active Transportation Master Plan.
- Plan for transit-supportive densities in appropriate areas to better support the success of an intensified active transportation network."

No future transportation or land use needs within the study area are identified within the Directions Report.

Town of Bradford West Gwillimbury Official Plan (Draft) – Phase 3 (March 27, 2018)

The Draft Official Plan was released for public review in late March 2018. Schedule "C" (Transportation Plan) maintains Line 8, Sideroad 10 and Barrie Road as "Arterial (Major) Roads" and Professor Day Drive as an "Arterial (Minor) Road" from the 2002 Official Plan. The Highway 400-404 Connecting Link is provided within the schedule along with other potential future road developments. Most notably, the proposed extension of Langford Boulevard from Holland Street West to Line 8 and a potential future County Road along the 5th Sideroad, Line 5 and Line 6, which would be transferred to the County of Simcoe. A "Southwest Arterial Road Alignment" has also been proposed in the schedule located on Sideroad 10 between Line 5 and 6.

Section 6.1 (Line 8 Special Policy Area 1) of the Draft Official Plan makes reference to an area of land at the Line 8 / Sideroad 10 intersection designated for the development of a subdivision and condominiums. Section 6.1(b) notes that the subdivision shall be deigned for large lots to accommodate large scale manufacturing and assembly plants. Section 6.1(d) states that a minimum of 4.5m wide road widening along Sideroad 10 and Line 8 shall be required as a condition of subdivision approval.

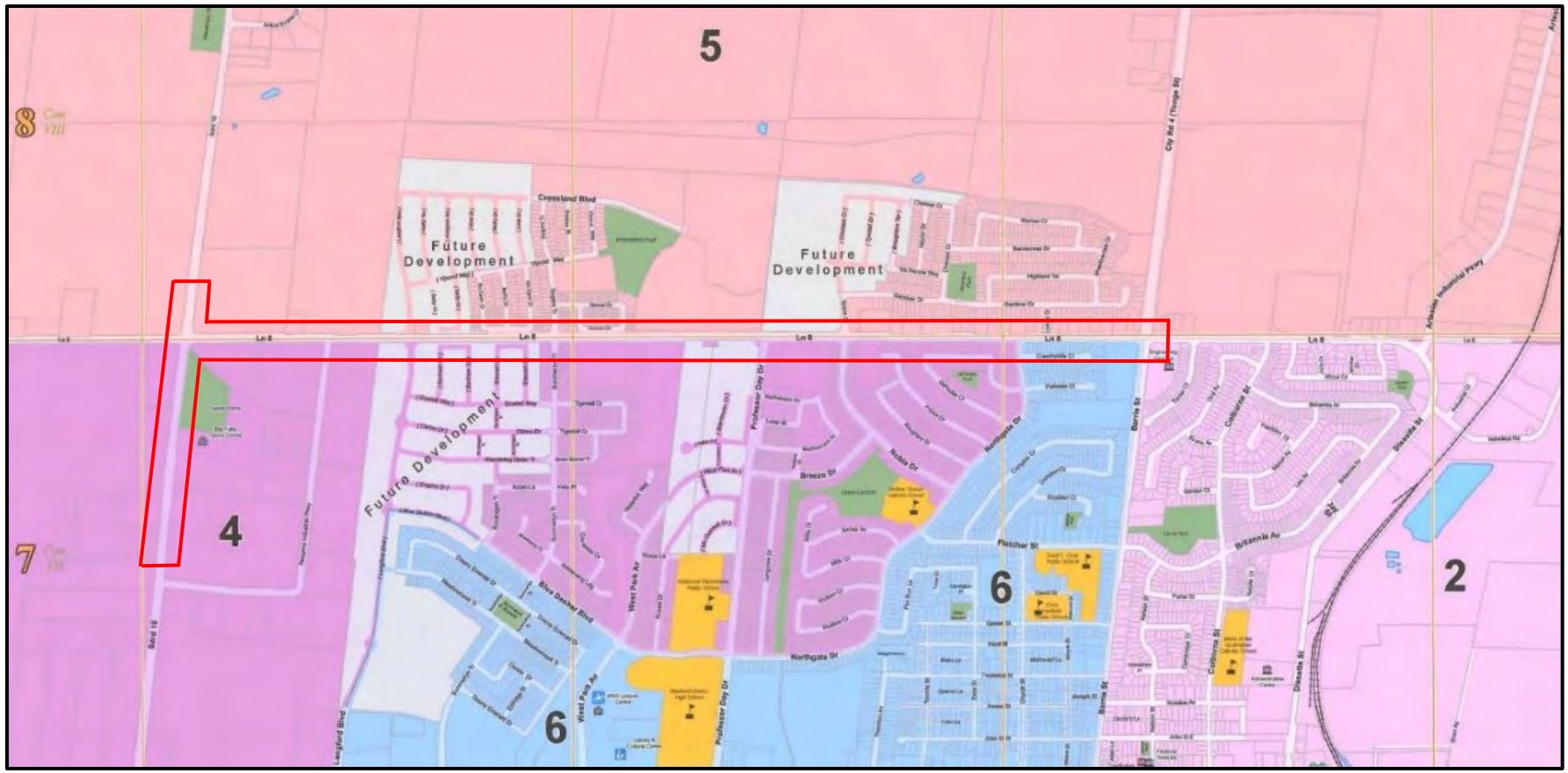
3.3 Social Environment

3.3.1 Population and Political Jurisdictions

The study area exists within the Town of Bradford West Gwillimbury, County of Simcoe. The population in the Town in 2016 was 35,325 and 28,077 in 2011 constituting a 26% increase over a five-year period. Between 2011 and 2016 Bradford West Gwillimbury was the 11th fastest growing town in Canada (of at least 5,000 inhabitants) (http://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016001/98-200-x2016001-eng.cfm).

The Town is divided into seven individual political wards, four (4) of which are present within the study area. The south side of the study area falls within Ward 4; the north side of the study area within Ward 5; and at the Line 8 / Barrie Street / Yonge Street Intersection, Ward 6 is present to the southwest and Ward 2 to the southeast. The location of each of the wards in the study area are shown in Exhibit 12**,** along with the MCEA study area bordered in red.

Exhibit 12: Political Wards within the Study Area



3.3.2 Noise Receptors

Land uses designated as noise sensitive by the MECP / MTO consist of residential receptors, hospitals, nursing / retirement homes, etc. These receptors are representative of all of the noise sensitive areas (NSAs) within the study area and are identified in Appendix C (Noise Assessment Report, Figures 2 – 5).

3.3.3 Community Facilities / Land

As discussed in Section 3.2, the predominant surrounding land uses within the study area are residential and commercial developments; however, community facilities / land are also present adjacent to the proposed works.

An abundance of community facilities are also present in close proximity to Line 8 including: St John's Presbyterian Church (~100m), Bradford Sports Dome (~200m), St Teresa of Calcutta Catholic School (~500m), Lions Park (~500m), Fred C. Cool Public School (~650m), Holy Martyrs of Japan Church (~700m) Fieldcrest Elementary School (~750m), BWG Leisure Centre (1.1km), Bradford District High School (1.1km). This list is not exhaustive but demonstrates the number of community facilities in the greater study area, in addition to residential and commercial premises identified previously.

3.3.4 Agricultural Land

To the west of the Line 8 / Sideroad 10 intersection the land use is predominantly agricultural heading westwards towards Highway 400. Along Line 8, parcels of existing agricultural land are also present including northeast of Reagens Industrial Parkway and north of Crossland Boulevard. To the north and northeast of the Line 8 / Barrie Street / Yonge Street intersection along Yonge Street agricultural lands are also present.

No further agricultural land was identified within the study area.

3.4 Cultural Heritage Environment

3.4.1 Archaeology

Archaeological assessments were undertaken as part of project for areas within and outside of the ROW. Details regarding the investigations undertaken, future investigations during detail design, and mitigation measures are discussed in Section 8.3.1.

3.4.2 Built Heritage and Cultural Heritage Landscapes

A Built Heritage and Cultural Heritage Landscape Assessment was undertaken for the study area by Archaeological Research Associates Ltd. (ARA) in June 2019 and the results of the assessment are discussed in Section 8.3.2.

3.5 Transportation Features

3.5.1 Line 8 (Major Arterial)

Within the study area, the existing Line 8 is a two-lane eastbound / westbound road with left, right and combined left / right turning lanes onto a variety of side roads. Arterial roads connecting to Line 8 include Sideroad 10, Professor Day Drive, and Barrie Street / Yonge Street at the far eastern extent of the study area. A description of the arterial roads connecting Line 8 are described further below. A number of minor sideroads (such as Reagens Industrial Parkway (Local Road), Langford Boulevard (Collector), Rogers Trail / Summerlyn Trail (Local Road), Taucar Gate (Local Road), Noble Drive (Collector), Northgate Drive (Collector) and Lowes Gate (Local Road)) are also present, with the majority acting as main access roads into various residential developments along Line 8.

Stop Signs

From the western extent to the eastern extent of the study area the following stop signs are present along Line 8:

- Line 8 / Reagens Industrial Parkway: one-way stop on Reagens Industrial Parkway approaching Line 8;
- Line 8 / Professor Day Drive: two-way stop on Professor Day Drive;
- Line 8 / Taucar Gate: one-way stop on Taucar Gate (right-in / right-out);
- Line 8 / Northgate Drive: one-way stop on Northgate Drive approaching Line 8; and,
- Line 8 / Lowes Gate: one-way stop on Lowes Gate approaching Line 8.

Signalized Intersections

Signalized intersections are present on Line 8 within the study area and are as follows:

- Line 8 / Sideroad 10 Intersection (temporary traffic signals);
- Line 8 / Langford Boulevard (temporary traffic signals);
- Line 8 / Rogers Trail / Summerlyn Trail Intersection (temporary traffic signals);
- Line 8 / Noble Drive Intersection (temporary traffic signals); and,
- Line 8 / Barrie Street / Yonge Street Intersection (permanent traffic signals).

3.5.2 Sideroad 10 (Major Arterial)

Within the study area, south of Reagens Industrial Parkway the existing Sideroad 10 is a four (4) lane road. Heading northwards from Reagens Industrial Parkway the road merges to two-lane after approximately 150m and heading southbound reverts from a

two-lane to a four (4) lane road 150m prior to the Reagens Industrial Parkway intersection as shown in Exhibit 13. Sideroad 10 continues as a two-lane road through the Line 8 intersection.

Exhibit 13: Sideroad 10 – North and South of Reagens Industrial Parkway

3.5.3 Professor Day Drive (Minor Arterial)

Professor Day Drive is located within the study area and is a four (4) lane northbound and southbound road. A two-way stop sign is present on Professor Day Drive approaching Line 8 as shown in Exhibit 14.

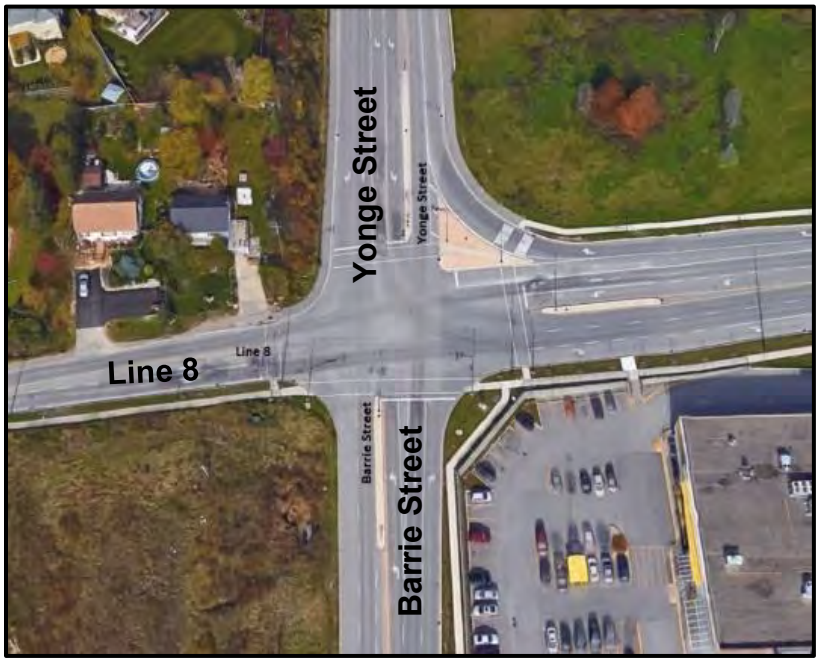
Exhibit 14: Professor Day Drive / Line 8 Intersection

3.5.4 Barrie Street (Major Arterial)

At the far eastern extent of the study area, the signalized Line 8 / Barrie Street / Yonge Street intersection is present. Heading northbound on Barrie Street approaching the intersection, three (3) lanes are present, one (1) for through traffic, left turning and right turning vehicles. Heading southbound on Yonge Street approaching the intersection, four (4) lanes are present with two (2) left turn lanes, one (1) right turn lane onto Line 8, and a lane for continuing southbound. Continuing southbound, Barrie Street reverts to two (2) lanes after approximately 100m.

Approaching the intersection from the west on Line 8, two (2) lanes are present, a designated left-turn lane onto Yonge Street and a combined through / right-turn lane. Coming from the east on Line 8 towards the intersection, three (3) lanes are present, one (1) for through traffic, left turning and a slip lane for right turning vehicles (an additional straight through lane was built as part of previous intersection improvements, however it is not being utilized). Heading east on Line 8, two (2) through lanes are present and one (1) designated right-turn lane into the commercial plaza at the southeast of the intersection. The configuration of the intersection is shown in Exhibit 15.

Exhibit 15: Line 8 / Barrie Street / Yonge Street Intersection



3.5.5 Pedestrian Facilities

A sidewalk is provided for pedestrians starting at the Line 8 / Noble Drive intersection and continuing east to Line 8 / Barrie Street / Yonge Street intersection. The sidewalk then continues eastwards across Barrie Street and out of the study area.

A pedestrian asphalt sidewalk adjoins to McCann Crescent within a housing development approximately 75m west of the Line 8 at Rogers Trail / Summerlyn Trail intersection and continues eastwards for 750m before terminating at Professor Day Drive. This asphalt sidewalk is only present on the north side of Line 8.

No further sidewalks are present within the study area except those associated with adjacent housing or commercial developments.

Signalized crossing points for pedestrians are provided at the following intersections:

- Line 8 / Noble Drive;
- Line 8 at Rogers Trail / Summerlyn Trail / Rogers Trail; and
- Line 8 / Barrie Street / Yonge Street.

No existing dedicated cycle lanes are present within the study area.

3.5.6 Lighting

Street lighting is provided at the Line 8 / Sideroad 10 intersection and on Line 8 between Noble Drive and Barrie Street. Street lighting is also provided in adjacent housing developments.

3.5.7 Utilities

Within the study area a variety of aboveground utility assets are present including Alectra hydro poles / lines, Bell, Rogers, Hydro One, streetlight and traffic light cables. In addition, underground high-pressure water mains, gas mains, storm sewers, sanitary sewers, and fibre optic cables are located within the study area.

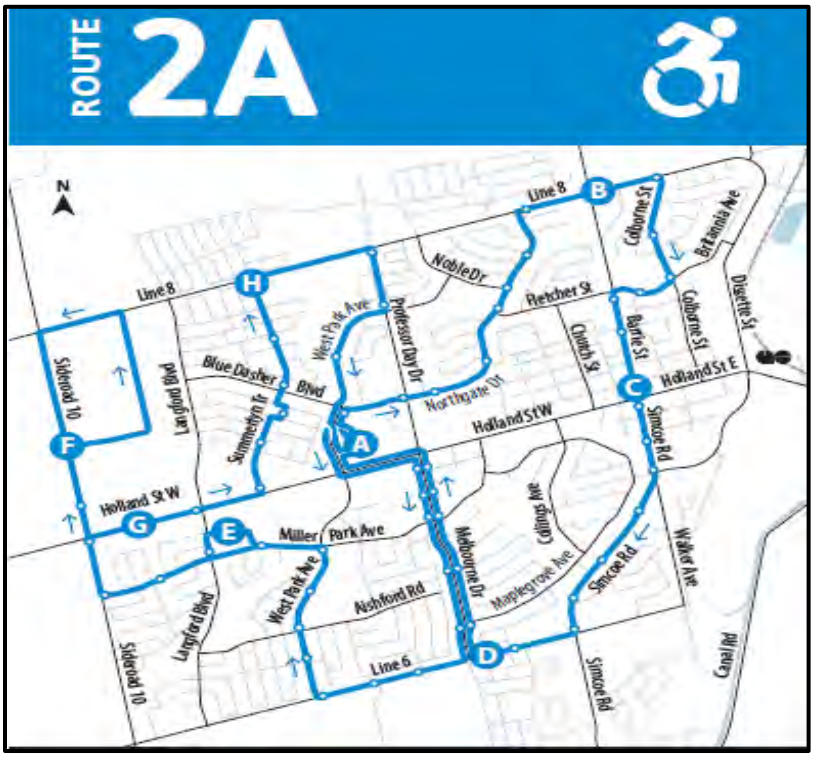
An Alectra substation is located at 2501 Line 8.

3.5.8 Transit

The Town provides local transit services within the study area and a review was undertaken. BWG Transit operate three (3) services, two (2) of which traverse Line 8 in the study area (Route 2A and Route 2B). Both services run along Line 8 between Sideroad 10 and Reagens Industrial Parkway, Summerlyn Trail and Professor Day Drive, and Colborne Street and Northgate Drive. Exhibit 16 displays Route 2A with Route 2B being the same but the other direction.

Bradford West Gwillimbury GO Station is also present within the greater study area, approximately 1.5km southeast of the Line 8 / Barrie Street / Yonge Street intersection located on Dissette and Bridge Street.

Exhibit 16: BWG Transit Route 2A Route



3.5.9 Transportation Analysis and Future Traffic Flows

Transportation analysis was undertaken by Poulos and Chung (2017) (Appendix D) to establish future traffic flows and proposed improvements. Exhibit 17 displays the existing (2016) intersection turning movement counts for the study area. All intersections were counted for an eight-hour period during a typical weekday in November. This permitted the determination of the roadway AM and PM peak hour turning movements. Several intersections were also counted for a 24-hour period. Future traffic analysis was completed to determine traffic flows within the study area in 2021 and 2031.

The set of outputs were based upon:

- Updated area intersection traffic counts;
- Calibration of the TransCAD transportation model; and
- Forecast population and employment number.

Future traffic flow information was also derived from the "Simcoe County Transportation Master Plan (2008)" for potential flows leading up to 2031 due to proposed development in the area. Exhibit 18 demonstrates the future traffic flows within the study area for the 2016, 2021 and 2031 periods based upon data derived from the above sources. Traffic projections for 2041 were based upon the 2031 PM Peak Hour Link Volumes from Poulos and Chung (2017) with an annual increase of 2.75% compounded annually over a 10-year period (Planmac, 2017 – Appendix E).

Exhibit 17: Existing (2016) Intersection Turning Movement Counts (AM and PM Peak Hour)

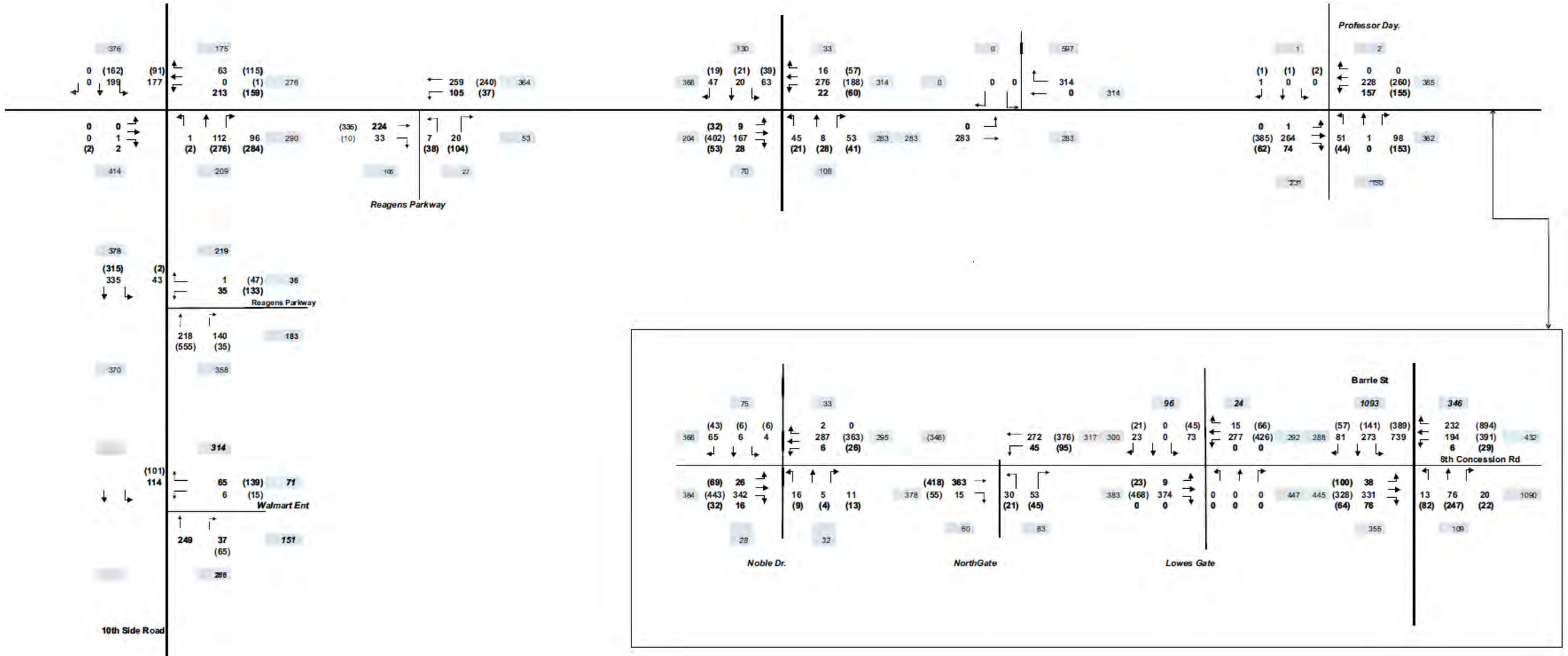
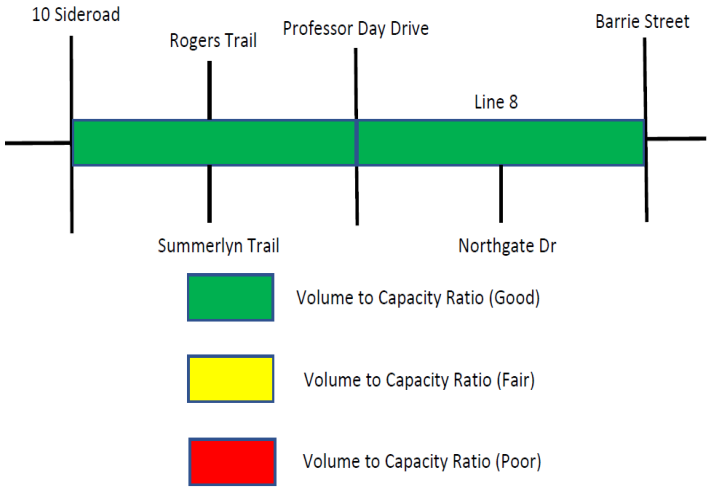
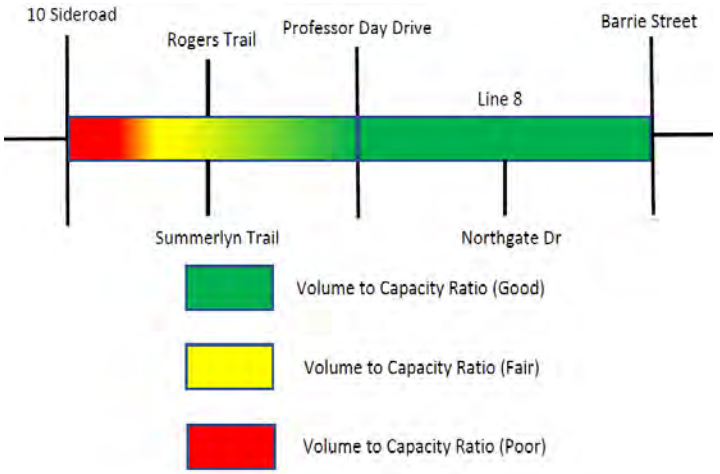


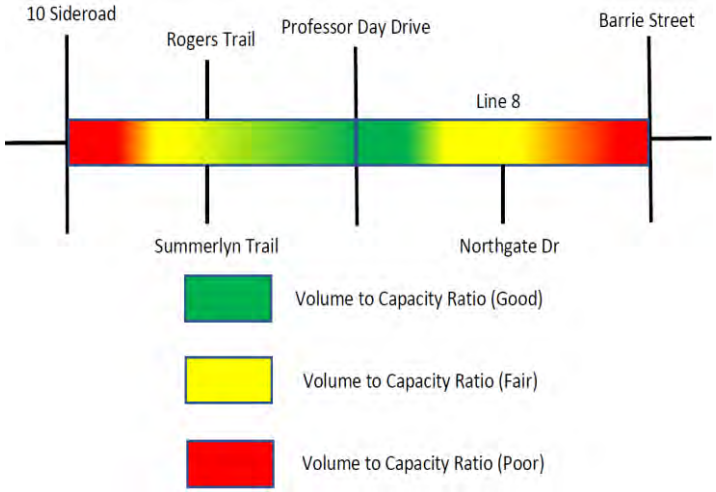
Exhibit 18: Needs Assessment – Midblock Traffic Volume/Capacity (PM Peak Hour)



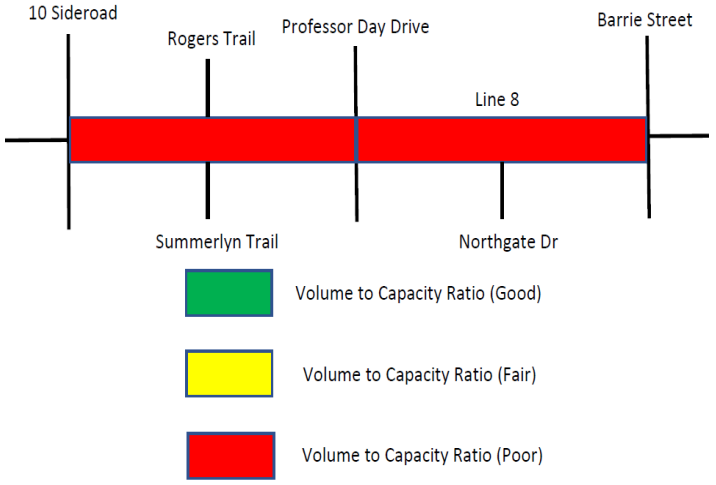
2016



2021



2031



2041

In 2016, the volume to capacity ratio for roads within the area were displayed as being good; however, in a Do Nothing scenario as future flows increase and capacity remains constant the volume to capacity ratio deteriorates resulting in poor conditions for all roads by 2041. The need for increased capacity is evident and demonstrates the required improvements on Line 8 due to projected increases in population and employment numbers in the area.

Level of Service (LOS) in 2016 assessed Line 8 / Sideroad 10 intersection as having poor service, whereas Line 8 / Professor Day Drive and Line 8 / Barrie Street intersections as providing good service. By 2021, LOS at Line 8 / Barrie Street reduces to poor service and Line 8 / Professor Day Drive remains good. In the Do Nothing scenario LOS is assessed as poor for all three (3) intersections by 2031 and continuing into 2041. This is illustrated in Exhibit 19.

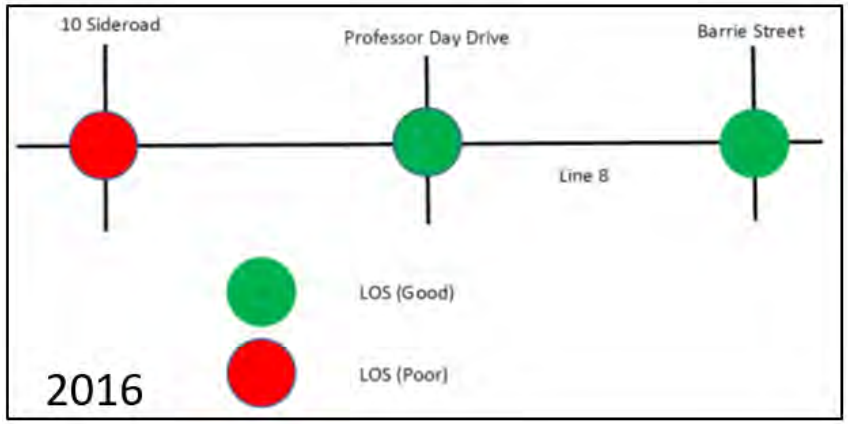
3.5.10 Collision Safety Review

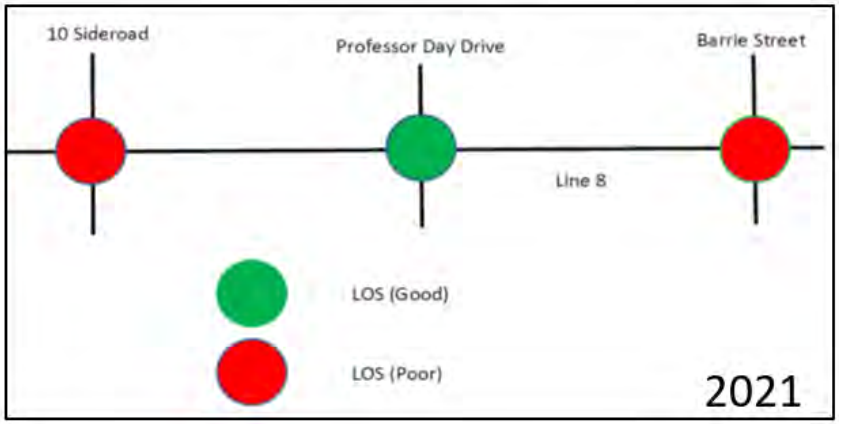
As part of the MCEA process, Stantec completed a collision safety review for the study area in October 2017 (Appendix F). The review considered collision records, human factor considerations, societal costs, road geometrics and traffic patterns to conclude the following:

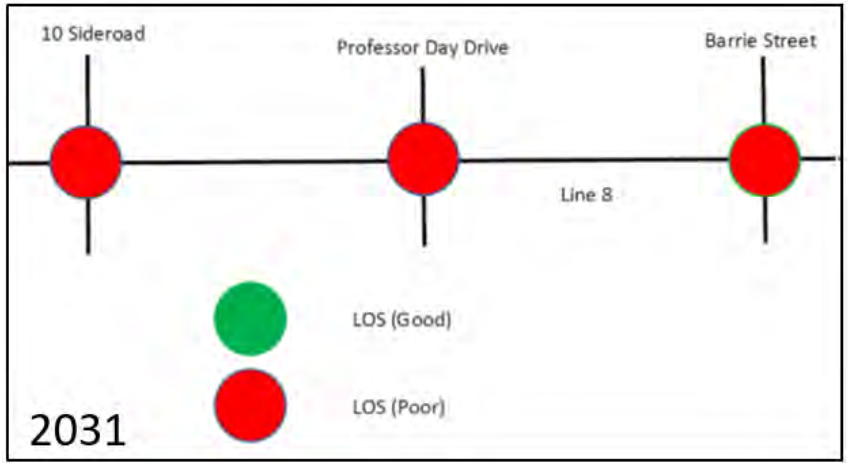
- Based on a review of 5-year accident data from 2011 to 2016, there are no major safety issues or concerns; no fatalities were recorded, although 93 collisions were reported.
- No pedestrian or cyclist involved collisions records were found.

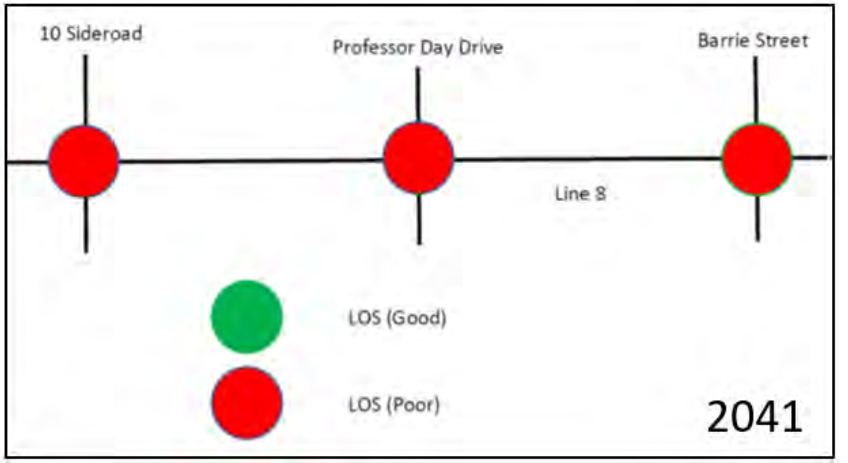
The frequency of accidents at the Line 8 / Barrie Street intersection are higher compared to the other intersections on Line 8, but not such that a major or immediate change is needed.

Exhibit 19: Needs Assessment – Intersection PM Peak Hour Level of Service (LOS)









4.0 PROBLEM AND OPPORTUNITY STATEMENT

A problem and opportunity statement was developed to provide the overall need and justification for the study and to satisfy Phase 1 of the MCEA process. This statement has been used consistently throughout the study and was developed in consultation with the Town.

As identified in the 2003 Master Servicing Study completed by the Town, and the 2008 Schedule "C" MCEA Study completed for the Sideroad 10 widening, it was demonstrated that improvements were required along Sideroad 10 including the provision of sufficient roadway capacity and services to meet the traffic demands of the future.

Similarly, an increase in future traffic demands have been forecasted for Line 8 and Barrie Street within the study area, with poor LOS issues currently being experienced at Line 8 / Sideroad 10, Line 8 / Barrie Street / Yonge Street by 2021, and all three (3) major intersections by 2031 continuing to 2041. In addition, LOS on these roads within the study area have also been forecasted to deteriorate with poor conditions expected by 2041 if no improvements are made to the existing road infrastructure. The Town's Official Plan (Consolidated to October 1, 2012) Line 8 as a major arterial road. An appropriate solution is therefore required to ensure the demands of future generations are met, as well as improving safety and infrastructure for future vehicle users.

Continued growth along Line 8 is another prime reason for improvements to the existing road infrastructure with proposed / in progress residential supply on either side of Line 8 between Sideroad 10 and Barrie Street, along with potential uncommitted residential supply (Bradford West Gwillimbury Official Plan Review, Background Paper: Land Need Analysis, Appendix A, December 2016). Expansion of the Bradford Urban Area settlement boundary to the northwest of Line 8 will also add to population growth and traffic demands in the area. This includes Special Policy Area 1 for subdivision or condominium development, in an industrial park setting (Town of Bradford West Gwillimbury Official Plan, Draft (version 1), March 2018 – Section 6.1 (Line 8 Special Policy Area 1)).

Improvements to pedestrian safety and active transportation were also identified at the outset by the study team as vital factors. This included considering specific measures to ensure the safe integration of pedestrians, cyclists and other active users among motorized vehicle traffic within the study area.

The current stormwater drainage network requires improvements to meet the Town's Stormwater Management Master Plan (December 19, 2016) guidelines, LSRCA guidelines and MECP guidelines. In addition, deficient underground stormwater infrastructure requires upgrading.

Following Planmac's review of the existing deficiencies to the existing transportation / pedestrian system and servicing infrastructure, along with proposed future land use, a problem and opportunity statement was developed encompassing the needs of the Town and the study area.

The problem and opportunity statement was presented to the Town noting the objective of the study was to ensure:

"that existing traffic infrastructure and pedestrian safety deficiencies be addressed in an environmentally responsible manner, having regard for continued growth and travel demands anticipated over the next 25 years within the northwest area of Bradford and future transportation."

A consensus was made on the wording of the problem and opportunity statement between both parties to be presented at Public Information Centre (PIC) #1 (refer to Section 9.0: Public and Stakeholder Engagement).

5.0 IDENTIFICATION AND EVALUATION OF ALTERNATIVE SOLUTIONS

5.1 Alternative Solutions

To satisfy Phase 2 of the MCEA process, six (6) high-level alternative solutions to address the problem and opportunity were developed for upgrades within the project area by 2041. These alternative solutions included:

- Do Nothing: this option involves no changes to the existing infrastructure. It is used as a benchmark comparison for the other options.
- Traffic demand management (TDM): this option includes measures that help to provide choices of transportation modes, as well as means of reducing the number of trips that are required. Common examples of TDM measures, include active transportation (walking, cycling, rollerblading, skateboarding), public transportation (bus), trip reduction (carpooling), working from home (telecommuting), working compressed weeks (longer hours over fewer days), combining errands into one (1) trip and pricing solutions (parking pricing to discourage short trips and encourage longer stays).
- Improve transit initiatives (i.e. additional bus stops, shelters, bus bays, more frequent pick up times, etc.) – this option is intended to support the movement of people and help reduce the reliance and use of vehicles thus alleviating congestion and parking demands.
- Alternative travel routes: as an alternative to improving Line 8 and Sideroad 10, other corridors / routes could be improved to otherwise provide alternative travel routes through the area.
- Two-lane road c/w center median lane: this option involves upgrading the existing 2 lane rural cross section on Line 8 and Sideroad 10 to a two-lane rural or urban cross section complete with a center median lane, intersection improvements involving traffic control measures (i.e. traffic signals or roundabouts) and auxiliary turn lanes.
- 4-5 lane road with intersection improvements: this option involves upgrading Line 8 and Sideroad 10 to a four (4) or five (5) lane rural or urban cross section with intersection improvements to address existing and future traffic operational, capacity and LOS deficiencies.

5.2 Evaluation of Alternative Solutions

5.2.1 Evaluation Criteria

A series of evaluation criteria was developed to assess the alternative solutions for the proposed scheme, which included: transportation / technical; natural environment; social environment; cultural heritage environment; and economic environment. Each alternative was reviewed against the criteria to determine what was most appropriate for addressing the problem and opportunity statement outlined in Section 4.0. Exhibit 20 displays the criteria and sub-criteria assessed as part of the alternative assessment process.

Exhibit 20: Alternative Solution Evaluation Criteria

Criteria	Sub-Criteria
Transportation / technical	Road Operations
	Transit Service
	Road Safety
	Road Network Capacity / Flexibility
Natural Environment	Tree Inventory / Vegetation Impacts
	Fisheries / Aquatics Impacts
	Wildlife / Terrestrial Impacts
	Drainage
Social Environment	Property / Development Impacts
	Noise Impacts and Air Quality
	Driver Comfort
	Pedestrian and Cyclist Safety
Cultural Heritage Environment	Archaeological & Heritage Impacts
	Indigenous Group Impacts
Economic Environment	Maintenance Costs
	Construction Costs
	Land Acquisition
	Utility Relocation
	Monetary Savings for the General Public

5.2.2 Evaluation Scoring

To determine whether the six (6) alternative solutions would have a positive, negative, or no effect on the criteria / sub-criteria a scoring system was created to allow comparison and determine the preferred alternative solution. Exhibit 21 below outlines the scoring system for the purpose of the evaluation.

Exhibit 21: Alternative Solution Evaluation Criteria

Evaluation Description	Scoring
High Positive Effect	+2
Moderate Positive Effect	+1
No Effect	0
Moderate Negative Effect	-1
High Negative Effect	-2

The above evaluation descriptions / scoring has been assigned to each of the sub-criteria against each of the alternative solutions. The evaluation is presented and discussed in the following sections (Section 5.2.3 to 5.2.8) with a preferred alternative solution being selected and discussed in Section 5.3 based on the highest totalled score.

5.2.3 Transportation / technical

As shown in Exhibit 22, the 4-5 lane road with intersection improvements is the preferred alternative with no adverse impacts on any of the sub-criteria and would ultimately reduce congestion and compensate for higher future traffic flows. The Do Nothing alternative is the least preferred because it possesses the greatest potential for reduction in safety due to having no positive affect on road operations, safety, transit, or network capacity on Line 8. Improving transit initiatives would help improve transit service but would have negligible impact on road operations, road network capacity and safety. A reduction in safety for TDM alternative given more cycling, rollerblading, and skateboarding with potential for vehicular accidents on an existing busy road in Line 8, along with a reduction in road operations / network capacity. The two-lane road alternative was assessed as having a moderate positive impact on all sub-criteria. Alternative travel routes would not be advantageous to Line 8 as existing traffic infrastructure and pedestrian safety deficiencies would not be addressed.

Exhibit 22: Transportation / Technical Evaluation

Sub-Criteria	Do Nothing	Traffic Demand Management (TDM)	Improve Transit Initiatives	Alternative Travel Routes	Two-lane Road c/w Center Median Lane	4-5 Lane Road with Intersection Improvements
Road Operations	High Negative Effect (-2)	High Negative Effect (-2)	No Effect (0)	High Negative Effect (-2)	Moderate Positive Effect (+1)	High Positive Effect (+2)
Transit Service	High Negative Effect (-2)	No Effect (0)	High Positive Effect (+2)	Moderate Negative Effect (-1)	Moderate Positive Effect (+1)	Moderate Positive Effect (+1)
Road Safety	High Negative Effect (-2)	High Negative Effect (-2)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Positive Effect (+1)	High Positive Effect (+2)
Road Network Capacity / Flexibility	High Negative Effect (-2)	High Negative Effect (-2)	No Effect (0)	High Negative Effect (-2)	Moderate Positive Effect (+1)	High Positive Effect (+2)
Overall Score	-8	-6	+2	-6	+4	+7

5.2.4 Natural Environment

As shown in Exhibit 23, the Do Nothing, TDM, improve transit initiatives and alternative travel routes would result in an overall no effect given the nature of the alternatives and negligible impact on the natural environment. The alternative travel route, two-lane Road, and 4-5 lane road alternatives were assessed as having a moderate positive effect overall. For tree inventory, the two-lane and 4-5 lane road with intersection improvements would require the most tree removal; however, compensatory replanting would be undertaken along with improved vegetation aesthetics associated with each of the alternatives. The two-lane and 4-5 lane road alternatives would have a high positive impact on drainage within the study area through accompanying improvements.

Exhibit 23: Natural Environment Evaluation

Sub-Criteria	Do Nothing	Traffic Demand Management (TDM)	Improve Transit Initiatives	Alternative Travel Routes	Two-lane Road c/w Center Median Lane	4-5 Lane Road with Intersection Improvements
Tree Inventory / Vegetation Impacts	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	Moderate Positive Effect (+1)	Moderate Positive Effect (+1)
Fisheries / Aquatics Impacts	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)
Wildlife / Terrestrial Impacts	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)
Drainage	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	High Positive Effect (+2)	High Positive Effect (+2)
Overall Score	0	0	0	0	+3	+3

5.2.5 Social Environment

The two-lane road and 4-5 lane road alternatives would result in an overall moderate positive effect. The two-lane road and 4-5 lane road would result in property impacts; however, the improved road operations and traffic capacity would result in better access for patrons of existing properties and proposed developments, driver comfort, and would include provisions for active transportation. Air quality and noise impacts were assessed to improve for the two-lane road and 4-5 lane road due to congestion reduction and a reduction in idling of traffic. Air quality / noise impacts for the alternative travel routes solution was considered as having no effect as traffic would be transferred from Line 8 to other routes. Air quality / noise would improve with TDM and the improve travel initiatives due to the promotion of active transportation. Driver comfort would be reduced for TDM due to an increase in cyclists on the road and active transportation in the study area. The Do Nothing alternative was assessed with the highest negative effect.

Exhibit 24: Social Environment Evaluation

Sub-Criteria	Do Nothing	Traffic Demand Management (TDM)	Improve Transit Initiatives	Alternative Travel Routes	two-lane Road c/w Center Median Lane	4-5 Lane Road with Intersection Improvements
Property / Development Impacts	Moderate Negative Effect (-1)	No Effect (0)	Moderate Negative Effect (-1)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)
Noise Impacts and Air Quality	High Negative Effect (-2)	Moderate Positive Effect (+1)	Moderate Positive Effect (+1)	No Effect (0)	Moderate Positive Effect (+1)	Moderate Positive Effect (+1)
Driver Comfort	High Negative Effect (-2)	High Negative Effect (-2)	No Effect (0)	Moderate Positive Effect (+1)	High Positive Effect (+2)	High Positive Effect (+2)
Pedestrian and Cyclist Safety	High Negative Effect (-2)	Moderate Positive Effect (+1)	No Effect (0)	Moderate Positive Effect (+1)	Moderate Positive Effect (+1)	Moderate Positive Effect (+1)
Overall Score	-7	0	0	+2	+3	+3

5.2.6 Cultural Heritage Environment

As shown in Exhibit 25, negative effects on Indigenous Groups are not anticipated as a result of any of the proposed alternative solutions. The alternative travel routes, two-lane road, and 4-5 lane road alternatives would all require construction resulting in archaeological impacts, more specifically archaeological assessments to satisfy the MCEA. The reason why they have not been assessed as high negative effects is because appropriate mitigation measures would be employed during the assessments / investigations and environmental procedures provided to the contractor if archaeological finds were to occur on-site. The remaining alternatives would have no impact upon archaeology.

Exhibit 25: Cultural Heritage Environment Evaluation

Sub-Criteria	Do Nothing	Traffic Demand Management (TDM)	Improve Transit Initiatives	Alternative Travel Routes	two-lane Road c/w Center Median Lane	4-5 Lane Road with Intersection Improvements
Archaeological & Heritage Impacts	No Effect (0)	No Effect (0)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)
Indigenous Group Impacts	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)	No Effect (0)
Overall Score	0	0	0	-1	-1	-1

5.2.7 Economic Environment

From an economic perspective, TDM, improving transit services and Do Nothing were assessed as being the most beneficial given the monetary savings to members of the general public using public transit (who also may not normally use). The two-lane road, 4-5 lane road with intersection improvements, Improve Transit Initiatives and Alternative Travel Routes would all incur costs from construction and maintenance. The TDM and improve transit services alternatives would be beneficial again for members of the general public using public transit (who would not usually use). The remaining sub-criteria would have no impact on TDM and the Do Nothing alternative would have no effect economically on any of the sub-criteria.

Exhibit 26: Economic Environment Evaluation

Sub-Criteria	Do Nothing	Traffic Demand Management (TDM)	Improve Transit Initiatives	Alternative Travel Routes	two-lane Road c/w Center Median Lane	4-5 Lane Road with Intersection Improvements
Maintenance Costs	No Effect (0)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)
Construction Costs	No Effect (0)	No Effect (0)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)	High Negative Effect (-2)
Land Acquisition	No Effect (0)	No Effect (0)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)	High Negative Effect (-2)
Utility Relocation	No Effect (0)	No Effect (0)	No Effect (0)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)	Moderate Negative Effect (-1)
Monetary Savings for the General Public	No Effect (0)	Moderate Positive Effect (+1)	High Positive Effect (+2)	No Effect (0)	No Effect (0)	No Effect (0)
Overall Score	0	+1	+1	-4	-4	-6

5.2.8 Overall Evaluation

This section takes into consideration the assessments undertaken in Sections 5.2.3 to 5.2.7 for the evaluated criteria / sub-criteria. Exhibit 27 below provides the scoring per criteria assessed in each section. The preferred alternative, and reasoning for selection, is discussed in Section 5.3.

Exhibit 27: Overall Evaluation

Criteria	Do Nothing	Traffic Demand Management (TDM)	Improve Transit Initiatives	Alternative Travel Routes	two-lane Road c/w Center Median Lane	4-5 Lane Road with Intersection Improvements
Transportation / technical	-8	-6	+2	-6	+4	+7
Natural Environment	0	0	0	0	+3	+3
Social Environment	-7	0	0	+2	+3	+3
Cultural Heritage Environment	0	0	0	-1	-1	-1
Economic Environment	0	+1	-1	-4	-4	-6
Overall Scoring	-15	-5	-3	-9	+5	+6

5.3 Preferred Alternative: 4-5 Lane Road with Intersection Improvements

Following the evaluation of the alternative solutions and based upon the criteria assessed in Sections 5.2.3 to 5.2.7 the preferred solution is the development of a 4-5 Lane Road within the extents of the study area. As noted in Section 5.1, this option involves upgrading Line 8 and Sideroad 10 to a four (4) or five (5) lane rural or urban cross section with intersection improvements to address existing and future traffic operational, capacity and LOS deficiencies. Although very closely scored with the two-lane Road alternative, the 4-5 Lane Road option with intersection improvements was preferred due to greater benefits to transportation within the study area.

The overall evaluation scored this option (hereby referred to as the "preferred alternative") as having a moderate positive effect on the study area and scoring the highest of all alternatives. Benefits to this option include:

- Pedestrian safety;
- Additional through lanes will provide the capacity necessary to accommodate future 2041 traffic growth and increased traffic volumes;
- Roadway operations and safety are improved;
- The expanded roadway accommodates additional external, local, commercial / industrial and bypass traffic;
- Improved driver comfort;
- Improved stormwater management; and,
- Slight improvement in air quality and noise impacts were assessed to improve for the two-lane road and 4-5 lane road due to the reduction in congestion and idling of traffic on Line 8.

Economically, the preferred alternative would have the largest construction, maintenance and utility relocation costs, along with potential for land acquisition. Nevertheless, the need for increased capacity is evident and demonstrates the required improvements on Line 8 due to projected increases in population and employment numbers in the area. LOS within the study area is forecasted to deteriorate with poor conditions to be seen by 2041 if no improvements are made to the existing road infrastructure.

The preferred alternative will set out to improve the above and satisfy the objectives of the problem and opportunity statement, improve existing intersections within the study area, along with considering specific measures to ensure the safe integration of pedestrians, cyclists and other active users among motorized vehicle traffic within the study area. Moreover, the design will include multi-use trail facilities, new lighting and sidewalks to encourage the movement of non-motorized users.

Section 6.0 provides the alternative design concepts in establishing a preferred design concept and assesses both intersection and cross-section / road alignment alternatives. Section 6.0 constitutes Phase 3 of the MCEA process.

6.0 ALTERNATIVE DESIGN CONCEPTS

6.1 Review of Study Approach

Sections 1.0 through 5.0 of this ESR documented the technical analysis and evaluation process undertaken to fulfil Phases 1 and 2 of the MCEA process (problem and opportunity and alternative solutions).

The problem and opportunity statement has been broadly defined to address existing traffic infrastructure and pedestrian safety deficiencies having regards for the continued growth and travel demands of the Town, particularly within the northwest area of Bradford and West Gwillimbury.

The remainder of the ESR, beginning with this section, documents the evaluation process undertaken to fulfil Phase 3 of the MCEA process (alternative design concepts) and the production of this ESR constituting Phase 4.

An evaluation of intersection treatments was undertaken to determine upgrades required by 2041 based upon the projected traffic data. Once the best intersection treatment was established the road cross sections (i.e. four (4) or five (5) lanes) were developed to suit the approach connections.

The ultimate preferred design concept selected for upgrades up until 2041 is described in detail in Section 7.0. Following the mandatory 30-day review period of the ESR, pending no objections / Part II Orders, the MCEA process may proceed to Phase 5 (implementation). Potential environmental effects from the ultimate preferred design concept and proposed mitigation measures to reduce / alleviate such effects are discussed in detail in Section 8.0.

6.2 Alternative Design Concepts

6.2.1 Intersection Evaluation

Prior to the initiation of the intersection concept evaluation each existing intersection within the study area was reviewed to see if improvement / upgrade was required as part of the proposed works. It was established that one (1) intersection could be removed from the evaluation. Based upon the design team's review the one-way stop control at Taucar Gate (right-in / right-out) was considered suitable to remain as is, accommodating both existing and future traffic flows. Future traffic flows did not warrant a change to the Line 8 / Taucar Gate intersection.

From the outset of the evaluation the design team reviewed the advantages and disadvantages of both signalized intersections and roundabouts. The results of the review gave preference to roundabouts as a preferred alternative over signalized intersections as displayed in Exhibit 28 (MTO, 2018).

Exhibit 28: Comparison of Traffic Signals versus Roundabouts

	Signalized Intersections	Roundabouts
Advantages	- Increased pedestrian safety. Safer crossing points as traffic has fully stopped - Lower initial capital costs compared to roundabout - Canadian drivers more familiar with use of signals compared to roundabouts - Capacity and level of service typically lower compared to roundabout	- Lower speeds and fewer points of conflict between vehicles reduces the potential for serious crashes and injury - Unlike at a green light at an intersection, vehicles need to slow down to use a roundabout, reducing the likelihood of a serious crash - Less idling and air pollution - fewer delays reduces fuel consumption and improves air quality by reducing emissions - Improved landscape aesthetics within inner circle area - Capacity and level of service typically higher compared to signals - A high volume of vehicles turning left is handled better by a roundabout than by a left-turn signal at a traditional intersection
Disadvantages	- Higher maintenance costs - Increased frequency and severity of vehicular accidents - Greater time spent at intersection leading to driver frustration	- Initial capital costs higher compared to signals - Larger footprint requiring more land area resulting in greater property impacts

Based upon the results displayed in Exhibit 28, each intersection was evaluated to see whether construction of a two-lane roundabout would be feasible; where this was not the case due to significant impacts, a signalized intersection was adopted. Where a signalized intersection was preferred and already signalized, a review of whether the

intersection required upgrades was undertaken. The information in Exhibit 28 is assumed in the evaluation and is not repeated, with focus solely on whether a roundabout is feasible at each intersection. The results of the evaluation for each intersection and preferred alternative are discussed below.

- Line 8 / Sideroad 10 Intersection: Existing Temporary Traffic Signals
  - Based upon modelling undertaken by Stantec (2017) a two-lane roundabout would achieve a LOS level of A / A (AM / PM) at all legs based upon the peak-hour turning movement forecasts for 2041. An A / A level provides the greatest traffic operations and cannot be achieved with a signalized intersection.
  - A two-lane roundabout would require minor land acquisition from three (3) properties at the northwest, northeast and southeast quadrants (3066 Sideroad 10, 3066 Line 8 and 3075 Line 8), although the impact of this is not considered significant.
  - Following review of the Line 8 / Sideroad 10 Intersection, construction of a two-lane roundabout is feasible and will provide significant LOS improvements to the existing intersection. As such, a two-lane roundabout at this intersection has been incorporated into the ultimate preferred design concept.

  Recommendation: Roundabout feasible and selected.
- Line 8 / Reagens Industrial Parkway: Existing one-way stop on Reagens Industrial Parkway
  - Given the proximity of Reagens Industrial Parkway to Langford Boulevard (~240m) to the east and Sideroad 10 intersection to the west (~400m) it was determined that a signalized intersection or roundabout would not be required.
  - The existing one-way stop control intersection would be appropriate for road users wanting to access and egress Reagens Industrial Parkway. It was decided that further assessment was therefore not warranted as the intersection was considered suitable for future traffic flows.

  Recommendation: Remain as one-way stop control intersection.
- Line 8 / Langford Boulevard Intersection: Existing Temporary Traffic Signals
  - At this particular location, minor land acquisition is required from one (1) property at the northwest quadrant for the construction of a roundabout. This impact is not considered significant. Implementation of a signalized intersection at Langford would require land acquisition from two (2) properties to the northeast and northwest quadrants.

- No significant impacts were identified as a result of the construction of a two-lane roundabout and therefore was taken forward as the preferred design at this intersection.

Recommendation: Roundabout feasible and selected.

► Line 8 at Rogers Trail / Summerlyn Trail: Existing Temporary Traffic Signals

- A two-lane roundabout would result in a minor impact (i.e. grass) to one (1) property in the northwest quadrant (2 Rogers Trail); however, this is not considered significant.

- No additional or adverse impacts on the natural or social environment are anticipated as a result of the construction of a two-lane roundabout, and therefore has been incorporated into the ultimate preferred design concept.

Recommendation: Roundabout feasible and selected.

► Line 8 at Professor Day Drive: Existing Two-Way Stop

- A safety performance review undertaken by Stantec (2017) highlighted that "the intersection on Line 8 / Professor Day Drive is susceptible to higher speeds due to access control and being downstream of a downgrade." A roundabout would force traffic to slow and yield to oncoming traffic and would prevent drivers trying to "beat" an amber light associated with a signalized intersection that encourages greater speeds through the intersection creating a substantial safety hazard. A signalized intersection is therefore not recommended at this intersection.

- Roundabout screening undertaken by Stantec (2017) noted that a roundabout would be feasible at the Line 8 / Professor Day Drive intersection and would compensate for the projected traffic forecasts for 2041.

- No significant impacts were assessed for the construction of a two-lane roundabout. The results of the Stantec (2017) assessment also displays the need for a roundabout to compensate for traffic flows in 2041.

Recommendation: Roundabout feasible and selected.

► Line 8 / Noble Drive Intersection: Existing Temporary Traffic Signals

- Required land acquisition for a two-lane roundabout would be significant with the full purchase and removal of two (2) properties (108 Noble Drive and 115 Noble Drive) along with front garden land-take from 106 Noble Drive.

- Given the existing grade at the intersection, implementation of a roundabout would pose significant constructability issues.

- A two-lane roundabout is therefore not recommended at this intersection. Upgrading the existing signalized intersection to five (5) lanes would result in no land acquisition and no significant constructability issues. This option has therefore been selected and incorporated into the ultimate preferred design concept.

Recommendation: Roundabout not feasible. Permanent signalized intersection has been selected for the ultimate preferred design concept.

► Line 8 / Northgate Drive: Existing One-Way Stop on Northgate Drive approaching Line 8

- Implementation of a two-lane roundabout with no northern leg at Northgate Drive intersection would result in full property acquisition from 2562 Line 8 and moderate land acquisition from 2554 Line 8 and 2580 Line 8.
- Review of a three-leg signalized intersection with a four (4) lane (west leg) / five (5) lane (east leg) cross-section was reviewed given the impacts as a result of a two-lane roundabout. The signalized intersection would affect current property access to 2562 Line 8.
- A signalized intersection was selected as the preferred design over a roundabout given the noted impacts.

Additional Operational Analysis on Northgate Drive

- Further assessment was undertaken by Morrison Hershfield at the request of the Town to review the operations of Northgate Drive and Lowes Gate intersections given their close proximity (~90m). It was identified that providing a north leg on the proposed Northgate Drive intersection and closing Lowes Gate access to Line 8 and Gardiner Drive, would improve LOS significantly and remove the existing offset between the intersections.
- Overall LOS for both AM and PM Peak Hour Volumes at a four-way signalized intersection at Northgate Drive in 2031 would be "B" (i.e. second-best operational conditions). Additionally, no movement at the four (4) lane signalized intersection would be worse that LOS "C" during either peak hour. Given the greatly improved LOS and volume to capacity ratio as a result of the proposed intersection configuration and closure of Lowes Gate, these elements have been incorporated into the ultimate preferred design concept.
- Implementation of the four-way signalized intersection requires the purchase of two (2) properties to the north: 2562 Line 8; and 75 Gardiner Drive.

Recommendation: Roundabout not feasible. Permanent four-way signalized intersection has been selected for the ultimate preferred design concept.

► Line 8 / Lowes Gate: one-way stop on Lowes Gate approaching Line 8.

- As noted within the Line 8 / Northgate Drive evaluation above, permanent closure of Lowes Gate is preferred in accommodating the proposed four-way signalized intersection at Northgate Drive.

Recommendation: Permanent closure of Lowes Gate.

► Line 8 / Barrie Street / Yonge Street Signalized Intersection

- For the existing Line 8 / Barrie Street / Yonge Street signalized intersection an assessment was undertaken to determine whether the intersection should be upgraded to a five (5) lane cross section on the west leg of the intersection only or introduce a new three-lane roundabout with a designated slip road to Yonge Street.

- Both alternatives would require private land acquisition to allow construction. The upgrade to the intersection would require land acquisition from the northwest quadrant i.e. garden land acquisition and severance to the driveway of 2486 Line 8 (alternative access provision would be required for this property given close proximity to new intersection), whereas the roundabout would require the acquisition of the whole property.

- Overall, although acquisition of a property is required, the improved LOS and traffic operations provided by a roundabout at Line 8 / Barrie Street / Yonge Street intersection was assessed as being the more beneficial option in terms of the traffic needs.

Recommendation: Roundabout feasible and selected.

6.3 Typical Cross Section / Road Alignment

Following the intersection alternatives assessment (Section 6.2), a review was undertaken to decide upon the typical cross section / road alignment requirements to fit the intersections selected. The selected cross sections within the study area are displayed in Appendix G and an overview provided in Section 7.1.2.

7.0 PROJECT DESCRIPTION – PREFERRED DESIGN CONCEPT

The purpose of this section is to outline the preliminary design and details concerning the major features of the ultimate preferred design concept for upgrades required by 2041 based upon the projected traffic data. The preliminary design plans are provided in Appendix G.

Construction phasing and interim upgrades required leading up to 2041 are also discussed in Section 7.2.

7.1 Ultimate Preferred Design Concept

7.1.1 Intersections

Please refer to Section 6.2 for the assessment of alternative intersections. The outcome of the assessment for the ultimate preferred intersections (2041) based upon projected traffic data is as follows:

- Line 8 / Sideroad 10 intersection: two-lane roundabout;
- Line 8 / Reagens Industrial intersection: maintain as a one-way stop control;
- Line 8 / Langford Boulevard intersection: two-lane roundabout;
- Line 8 at Rogers Trail / Summerlyn Trail intersection: two-lane roundabout;
- Line 8 / Professor Day Drive: two-lane roundabout;
- Line 8 / Noble Drive Intersection: upgrade the existing signalized intersection to five (5) lanes including an extension to Gardiner Drive;
- Line 8 / Northgate Drive intersection: upgrade the existing one-way stop to a four (4) leg signalized intersection;
- Line 8 / Lowes Gate intersection: permanently close; and,
- Line 8 / Barrie Street / Yonge Street intersection: conversion to a two-lane roundabout with designated slip roads from Yonge Street to Line 8 and Line 8 to Yonge Street.

7.1.2 Typical Sections

The selected cross section / road alignments for the ultimate road widening required by 2041 are provided in Appendix G and outlined below:

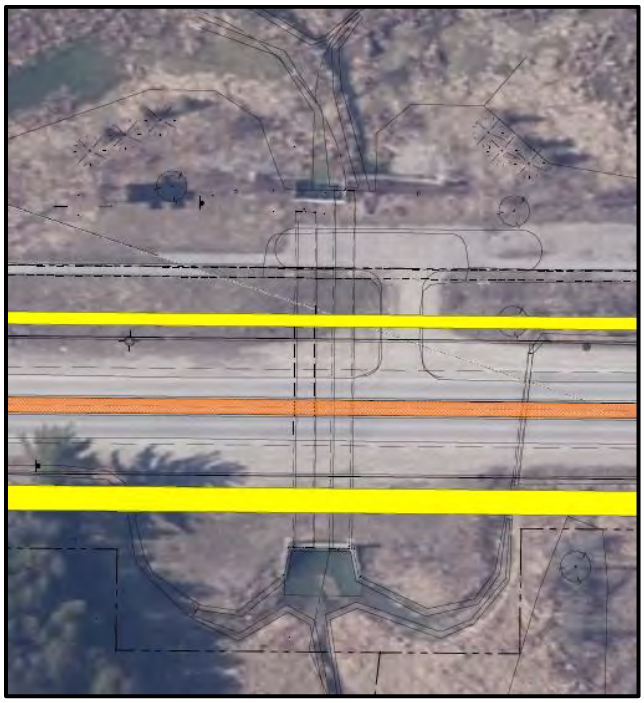
- Sideroad 10 from Line 8 to Reagens Industrial Parkway (south): a five (5) lane cross section will be implemented with a continuous two-way left turn lane median and multi-use trail to east.
- Line 8 from Sideroad 10 to Langford Boulevard: the existing centreline is maintained with a five (5) lane cross section including a continuous two-way left turn lane with

the exception of the presence of a median island between Station 10+240 to 10+345. A sidewalk will be present to the north and multi-use trail on the south side of Line 8.

- Line 8 from Langford Boulevard to Rogers Trail / Summerlyn Trail: a four (4) lane cross section maintaining the existing centreline and providing a median island will be implemented. A designated left turn lane was determined not to be required as no existing side streets exist onto Line 8. A sidewalk will be present to the north and multi-use trail on the south side of Line 8.
- Line 8 from Rogers Trail / Summerlyn Trail to Professor Day Drive: a four (4) lane cross section will be implemented maintaining the existing centreline and possibly providing a median island given there are no adjacent sideroads for a required turning lane. The boulevard will be slightly reduced after Rogers Trail / Summerlyn Trail given the presence of the woodlot to the south of Line 8 between the two (2) intersections. A sidewalk will be present to the north and multi-use trail on the south side of Line 8.

  As part of the residential development to the north and south of Line 8, a large box culvert was constructed at 150m west of Professor Day Drive to provide water conveyance for the wetland areas north and south of Line 8. A culvert is also present approximately 20m to the east of the box culvert that crosses Line 8. The culverts are shown in Exhibit 29. Given the setback of the box culvert from the existing Line 8 there is sufficient space on the north and south side of the culvert to provide the additional two (2) lanes and median without impact. For the culvert to the east of the box culvert it will be removed as part of the reconstruction to an urban cross-section.

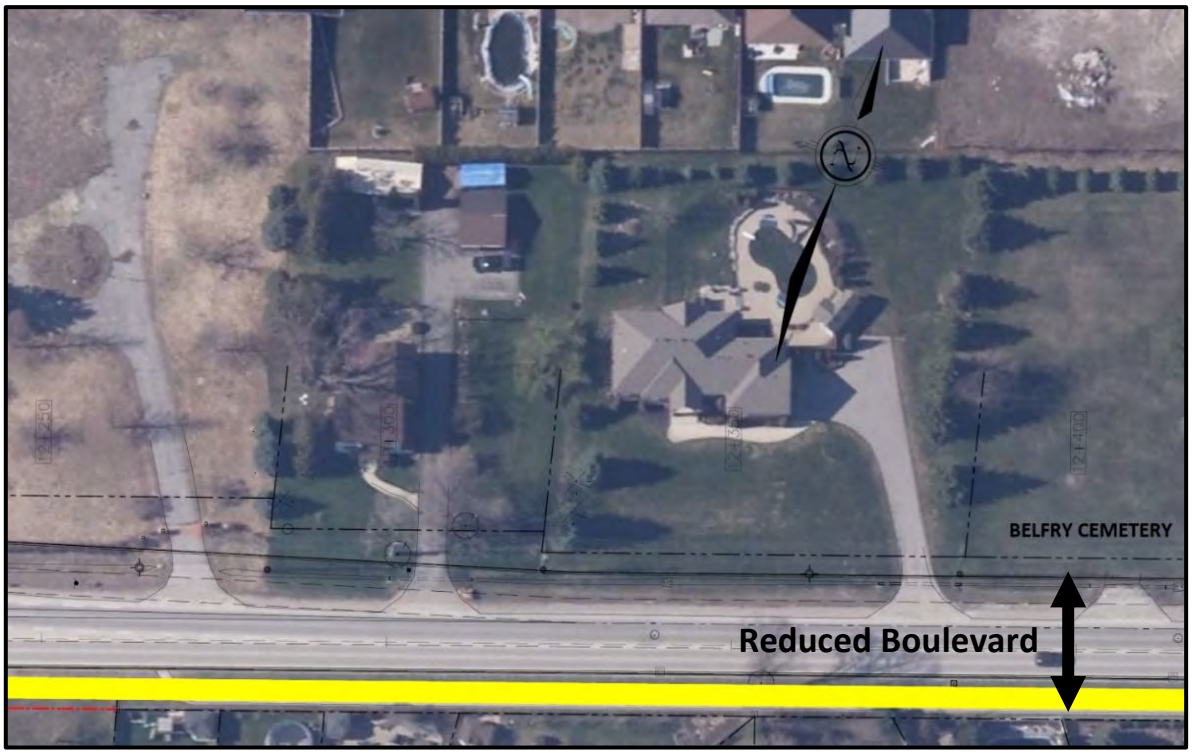
Exhibit 29: Box Culvert 150m West of Professor Day Drive



- Line 8 from Professor Day Drive to Noble Drive: the cross-section between these intersections will transition from four (4) lane to a five (5) lane heading eastwards to allow for a dedicated left-hand turning lane to Noble Drive. A right-in / right-out will be provided at Taucar Gate on and off of Line 8 heading eastwards. The existing centreline will be maintained and a median island provided.
- Line 8 from Noble Drive to Northgate Drive: the existing south curb line will be maintained with a centreline shift and platform widening to the north. A reduced boulevard to 23m will be implemented to prevent impacts to Belfry Cemetery. Exhibit 30 shows how this will be implemented. The proposed multi-use trail will remain on the south side of Line 8 with removal of the sidewalk to the north to allow for the reduced boulevard. Signalized crossing points at both Noble Drive and Northgate Drive will allow pedestrians to connect from the sidewalk to the multi-use trail through this section maintaining connectivity.

  Approaching Northgate Drive heading east, the boulevard will increase in width again.

Exhibit 30: Prevention of Land Acquisition from Belfry Cemetery



- Line 8 from Northgate Drive to Barrie Street / Yonge Street: the existing south curb line will be maintained with a centreline shift and platform widening to the north with the multi-use trail being continued on the south of Line 8 and sidewalk reinstated to the north.

  Although the required land acquisition from residential properties to the north is significant (further 11 properties) as a result of shifting the centreline north, it is significantly less than maintaining the existing centreline, which would result in land

acquisition from several more properties and affect an existing Alectra substation (2501 Line 8).

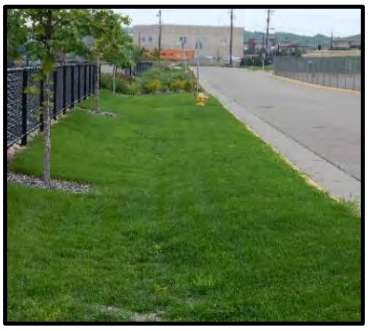
7.1.3 Drainage

The proposed conditions involve road expansions along Line 8 and Sideroad 10. The widening of these roadways results in an increase in impervious area within the project drainage areas, which translates to an increase in both peak flow rates and runoff volume. A stormwater management system must be implemented to address these changes in conditions.

A Low Impact Development (LID) Concept Plan was developed and analysed to determine the applicaibility of using LID feaures as a stormwater management solution for the project. Implementation of LID features will assist in meeting the required stormwater management practices listed above, particularily in water quality, stream erosion, and water balance targets. Aquafor Beech prepared a technical memo in July 2019 (see Appendix H) to summarize the feasibility of LID feature implementation in the project area as well as the hydrologic effects of such a stormwater management system in comparison to both existing and non-LID proposed conditions.

Suggested LID features and their function are described below:

- Enhanced Swales: vegetated open channels designed to convey, treat and attenuate stormwater runoff. Vegetation in the swale allows sedimentation, filtration through root zone and soil matrix, evapotranspiration, and infiltration to the underlying native soil. Periodic cleanout of sediment buildup within the swale may be required.



Enhanced Swale

- Permeable Sidewalk: permeable surfaces are an alternative to traditional impervious pavement. Permeable surfaces utilize techniques such as interlocking concrete pavers, permeable asphalt, or permeable concrete over a crushed, washed, open graded, angular stone aggregate base. These surfaces allow stormwater to filter through the pavement into an underlying stone reservoir. Additional maintenance may be required to address sand and de-icing materials placed on the sidewalk / multiuse trail during the winter.

Permeable Sidewalk

- Bioretention Cells: stormwater filtration and infiltration practices that temporarily store, treat and infiltrate runoff. These features may be designed with an underdrain depending on the ability of the native soil to infiltrate the stormwater, along with physical constraints. The filter bed is composed of sand, fines, and organic material along with a mulch cover to assist with establishment of plants. Pre-treatment should precede these features to remove particles that would otherwise clog the filter bed. Bioretention cells are designed to capture small storm events, and so an overflow or bypass is necessary to pass large storm event flows. Typical bioretention cells require very little maintenance.

Bioretention Facilities (Left: at Roundabout; Right: linear feature next to ROW)

- Constructed Wetlands: stormwater filtration and infiltration practices that temporarily store, treat and infiltrate runoff. These features may be designed with an underdrain depending on the ability of the native soil to infiltrate the stormwater, along with physical constraints. The filter bed is composed of sand, fines, and organic material along with a mulch cover to assist with establishment of plants. Pre-treatment should precede these features to remove particles that would otherwise clog the filter bed. Bioretention cells are designed to capture small storm events, and so an overflow or bypass is necessary to pass large storm event flows.

Constructed Wetland

LID feature placement according to the proposed LID concept plans developed for the ultimate preferred design concept (Appendix B of the LID Memo (Appendix H)) can provide sufficient treatment of all impervious surfaces within each drainage area, with the exception of catchment 4 (Appendix A of the LID Memo (Appendix H)). Catchment 4 has impervious areas included from residential lots outside the ROW on the north side of Line 8. These lots were conservatively included given the topography data available.

A constructed wetland has been provided as part of the preliminary design and is located within the woodlot south of Line 8 between Rogers Trail / Summerlyn Trail and Professor Day Drive. The proposed access road to the woodlot and wetland outlet pipe to the constructed wetland is approximately 380m west of Professor Day Drive. The purpose of the constructed wetland is to allow infiltration of pre-treated runoff into native soil and also convey overflow to the existing drainage culvert approximately 60m south of the ROW. This method will ensure road runoff is appropriately treated, along with providing a design fitting with the surrounding natural environment. Continued consultation will take place with LSRCA and MECP during detail design in obtaining permitting and approvals for drainage works as discussed in detail in Section 10.2. The Town's Stormwater Management Master Plan (December 19, 2016) guidelines, LSRCA guidelines and MECP guidelines have been considered during the preliminary design. The preliminary design of the proposed constructed wetland is shown in Appendix I.

Implementation of a LID system will assist in meeting the LSRCA Stormwater practices: water quantity control; water quality control; stream erosion; water balance / groundwater recharge; and erosion and sediment control. Quantity control of the proposed LID system does not reduce peak flows in certain drainage areas, typically in major storm events. In these situations, detention of major event runoff to reduce the peak flows can be achieved by directing excess runoff towards the constructed wetland or some of the existing stormwater management ponds adjacent to the Line 8 ROW with excess storage capacity. Further analysis of the available storage and additional runoff volume to be accommodated by the relevant LID features will be conducted during detail design.

7.1.4 Traffic Management

Advance road signage notifying motorists of the construction and potential lane closures will be provided prior to the start of construction. Emergency services will be granted priority passage (by on-site traffic control personnel) through all work areas while construction is taking place.

The contractor will take all appropriate measures to ensure access to adjacent residential and commercial properties are maintained throughout the duration of the proposed works.

7.1.5 Utilities

Those utilities located within the footprint of the ultimate preferred design concept include Hydro One poles / lines, Alectra poles / lines, Bell, Rogers, Vianet, streetlight and traffic light cables. In addition, underground high-pressure water mains, gas mains, storm sewers, sanitary sewers and fibre optic cables are located within the study area. Consultation with utility providers has taken place throughout the MCEA process as presented in Section 9.0, and ongoing consultation will take place during the detail design stage to determine potential conflicts and agreed relocations.

The existing hydro poles along the Line 8 and Sideroad 10 corridor will be relocated to allow for the new cross section of the ultimate preferred design concept. In addition, it was established that there will be conflicts with existing Hydro One and Alectra assets as a result of upgrading the Line 8 / Sideroad 10 intersection. The respective hydro authorities will prepare design drawings at the project detail design stage to accommodate the design requirements of the Line 8 and Sideroad 10 improvements.

Further utility impacts with Vianet, Bell, Rogers and Enbridge will be determined as the detail design progresses.

7.1.6 Pedestrian and Cyclist Facilities

A new multi-use trail will be provided along the entire south side of Line 8 and east of Sideroad 10. The multi-use trail will increase safety for cyclists and pedestrians through segregation from vehicular traffic and increased connectivity along Line 8 / Sideroad 10 (i.e. improved active transportation).

A sidewalk will be provided on the north side of Line 8 with the exception of between Noble Drive and Northgate Drive (i.e. reduced boulevard) to avoid impact on Belfry Cemetery.

Pedestrian and cyclist movement will be provided across intersections through signalization and use of islands at each roundabout leg providing crossing points to the proposed multi-use trail and sidewalk.

7.1.7 Driver Comfort and Road Level of Service (LOS)

Improved traffic flows will be provided throughout the study area through construction of widened four (4) and five (5) lane cross sections and provision of multiple roundabouts.

The proposed two-lane roundabout at Line 8 / Sideroad 10 will significantly improve LOS from existing conditions, even at 2041 traffic forecasts. The roundabout will also improve safety for drivers coming from all legs of the intersection.

Upgrading the existing Line 8 / Professor Day Drive intersection from a two-way stop to a two-lane roundabout will improve conditions at the intersection significantly with a large improvement in safety performance from its current safety performance, as traffic must

slow down and yield to traffic entering from Professor Day Drive. The roundabout will also accommodate the projected traffic forecasts for 2041 (Stantec, 2017).

At the Line 8 / Barrie Street / Yonge Street intersection, conversion to a two-lane roundabout with designated slip roads from Yonge Street to Line 8 and Line 8 to Yonge Street will greatly improve LOS and traffic operations.

Overall, implementation of the proposed two-lane roundabouts will improve LOS and reduce vehicular accidents and the severity of collisions compared to signalized intersections (Stantec, 2017).

7.1.8 Transit

Where bus stops are affected during construction on Line 8 (east of Northgate Drive and south of the Line 8 / Professor Day Drive intersection) alternative temporary bus stops will be provided through consultation with BWG Transit. Discussions will be held during detail design regarding the temporary stops, along with reinstatement of existing stops and potential for new locations as part of the project. This will impact both Route 2A and Route 2B as discussed in Section 3.5.8.

7.1.9 Cost Estimate

A copy of the preliminary cost estimate for the project can be found in Appendix J. Costs will be further developed as part of detail design.

7.2 Construction Phasing

The design elements selected in Section 6.0 and described in Section 7.1 constitute the ultimate preferred design concept for upgrades required by 2041, based upon justifications outlined in the problem and opportunity statement in Section 4.0 and projected traffic data.

Following completion of the MCEA Phase 3 evaluation and presentation of the ultimate preferred design concept at Public Information Centre (PIC) 2 an announcement was made by the Ontario Transportation Minister (York-Simcoe MPP Caroline Mulroney) that the Province plan to move forward with the Highway 400-404 Connecting Link. The next step to implement the Highway 400-404 Connecting Link would be to revisit and update the 2002 Environmental Assessment and Transportation Environmental Study Report, which will describe the impacts and mitigation measures for the project, confirm the preferred design and estimate the total project cost.

There has been no commitment made on timelines for the design and construction of the Highway 400-404 Connecting Link, however the Town will continue to monitor its progress and future announcements.

To compensate for the potential implementation of the bypass, further traffic modelling and operational analysis was undertaken following the announcement to confirm when

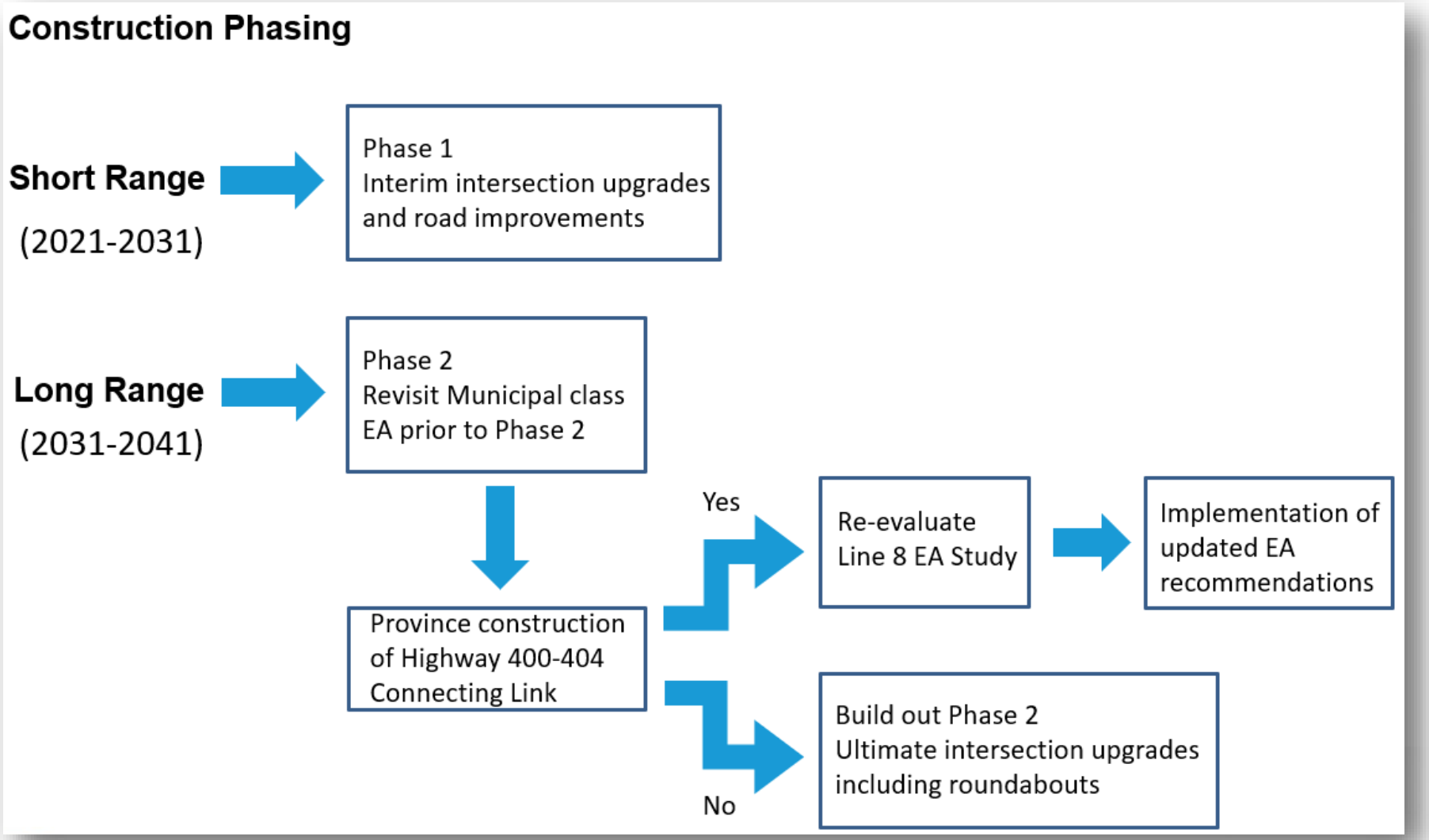
intersection upgrades would be required in the short term (i.e. prior to 2031) based on future traffic projections. Based upon the analysis, the required Phase 1 interim upgrades, presented in Exhibit 31 and shown in Appendix K, are required between 2021 and 2031 to mitigate anticipated poor LOS and address traffic needs in the short and medium term.

Exhibit 31: Phase 1 Construction (Interim Upgrades)

Line 8 Intersections	Phase 1 Upgrades
Sideroad 10	Upgrade to two-lane roundabout with designated approach slip roads on the east, west and south legs. No further upgrades would be required by 2041.
Professor Day Drive	Install traffic signals and provide dedicated left turn lanes in both directions.
Barrie Street / Yonge Street	Upgrade intersection by widening west leg to five (5) lanes.
Northgate Drive	Extend Northgate Drive to Gardiner Drive, provide additional through lane and install traffic signals.
Lowes Gate	Full Closure of Lowes Gate.

Following implementation of the Phase 1 interim upgrades, the recommendations provided in this ESR for the ultimate preferred design concept (i.e. intersection and widening requirements) will be revisited in 2031 to determine if the proposed ultimate upgrades to 2041 are still warranted depending on whether the Highway 400-404 Connecting Link has been constructed, along with the traffic flows at that time. This is depicted in Exhibit 32.

Exhibit 32: Proposed Construction Phasing



Where the Highway 400-404 Connecting Link is in place by 2031, this MCEA ESR will be re-evaluated at that time to determine what upgrades are required. As a recap, the Phase 2 ultimate intersection upgrades are provided in Exhibit 33 in addition to the four (4) to five (5) lane widening.

Exhibit 33: Phase 2 Construction (Ultimate Intersection Upgrades)

Line 8 Intersections	Phase 2 Upgrades
Reagens Industrial Parkway	No proposed change, remain as one-way stop control.
Langford Boulevard	Upgrade to two-lane roundabout
Rogers Trail / Summerlyn Trail	Upgrade to two-lane roundabout
Professor Day Drive	Upgrade to two-lane roundabout with designated approach slip road on south leg
Noble Drive	Widen road approach configuration
Barrie Street / Yonge Street	Conversion to a two-lane roundabout with designated slip roads from Yonge Street to Line 8 and Line 8 to Yonge Street.

8.0 POTENTIAL EFFECTS AND MITIGATION MEASURES FOR THE PREFERRED DESIGN CONCEPT

The potential effects and proposed mitigation measures associated with the ultimate preferred design concept are discussed below and mitigation measures summarized in Exhibit 34.

8.1 Natural Environment

8.1.1 Tree & Vegetation Cover

Potential Effects

Permanent removal of vegetation within the proposed road footprint represents an impact that cannot be mitigated. Removal of vegetation will expose soils resulting in potential erosion from these areas and sedimentation within retained vegetated communities. Indirect impacts such as dust production, the introduction of deleterious substances (e.g., salt, solvents, oil and grease, exhaust and litter) resulting from project vehicles and equipment, and soil erosion will also occur as a result of construction.

Construction of the ultimate preferred design concept will remove areas of anthropogenic vegetation within the following ecological land classifications (ELCs): CVR_4 (Rural Vegetation), CVR_1 (Low Density Residential) and CVI_1 (Transportation ROW), as a result of the widened cross section and construction of the proposed Line 8 / Sideroad 10 Intersection, Line 8 / Langford Boulevard intersection, Line 8 / Rogers Trail / Summerlyn Trail intersection, Line 8 / Professor Day Drive intersection, Line 8 / Noble Drive intersection, Line 8 / Northgate Drive intersection and Line 8 / Barrie Street / Yonge intersection.

The proposed four (4) lane cross section between Line 8 at Rogers Trail / Summerlyn Trail and the Line 8 / Professor Day Drive intersection would result in impacts to vegetation categorized within the following three (3) ELCs within the woodlot to the south of Line 8: MAMM1 (Graminoid Mineral Meadow Marsh); WODM5 (Fresh-Moist Deciduous Woodland); and FOMM7 (Fresh-Moist White Cedar Hardwood Mixed Forest). Impact upon these ELCs will require minor removal of trees to the south of Line 8. Please refer to Exhibit 4 of this report for the map of ELCs within the study area.

Additional tree removal will be required as a result of the construction of Line 8 / Noble Drive intersection affecting approximately three (3) to four (4) planted trees (CVI_1) in the southeast and southwest quadrants in close proximity to two (2) properties (108 and 113 Line 8). Construction of the proposed Line 8 / Barrie Street / Yonge Street intersection would result in further tree / shrub removal (CVI_1).

Mitigation

Damage to sensitive vegetation beyond that required for construction of the new road can be limited by clearly delineating vegetation protection zones on contract documents and in the field using sturdy fencing, and using appropriate tree clearing practices including felling trees away from retained areas.

An erosion and sediment control strategy will be developed to isolate construction zones from retained vegetation using silt fencing. Silt fencing will be monitored and maintained throughout the construction period to ensure proper function. Areas where temporary disturbance/removal of vegetation is required for construction will be re-vegetated immediately following construction with an appropriate native seed mix and planting of native trees and shrubs to stabilize soils.

A planting plan and edge management plan will be developed at detail design in accordance with any specifications from LSRCA or the municipality for compensation of any lost trees and to guard against edge damage due to new woodland edges. Monitoring of survival and health of planted trees and re-planting will occur as necessary.

The landscape planting plan and road design will consider potential impacts to retained vegetation associated with salt spray and other operational impacts and mitigate these impacts to the extent possible.

Timely re-vegetation (maximum 45 days) of exposed soils shall be undertaken for both temporary work areas and final grades; existing vegetation on embankments shall be maintained as long as possible and new slopes shall be stabilized as soon as possible by seeding and mulching.

Avoid reusing or disposing of any excess materials (including earth) within the ROW unless specified in the contract.

8.1.2 Wildlife, Species at Risk and Species of Conservation Concern

Potential Effects

In total, ten (10) species at risk (SAR) and other species of conservation concern have previously been recorded within or adjacent to the study area, although none were observed during field investigations undertaken on February 16 and 17, 2017. In addition, no barn swallow or barn swallow nesting were observed during the tree survey field investigations.

Vegetation removal in the woodlot between Rogers Trail / Summerlyn Trail and Professor Day Drive is required and will include meadow marsh, deciduous woodland, and hardwood mixed forest. The woodland area provides suitable foraging habitat for wildlife. The extent of the tree / shrub removal will although be minor and fully determined at detail design.

Impacts on SAR or species of conservation are not anticipated pending implementation of appropriate mitigation measures as outlined below.

Mitigation

All vegetation identified for removal should be assessed for any active nests prior to removal. In the instance that a nest is encountered, the contractor should consult with the contract administrator and contract documents to develop a management strategy to avoid interfering with active nesting.

If discovered, the contractor shall not destroy active nests (nests containing eggs or young birds) at any time, or inactive nests of protected migratory bird nests during the migratory bird nesting season as identified by Environment Canada's General Nesting Periods of Migratory Birds in Canada for Nesting Zone C2 (April 1 – August 31). If tree clearing is unavoidable during these dates, a pre-clearing nest search will be completed by a qualified biologist and an appropriate setback provided.

In the event that a SAR or potential SAR, is found within the construction area, the contractor will immediately cease all work that could potentially harm the animal and will consult with the contract administrator and contract documents for direction, as these animals are protected under the Ontario Endangered Species Act (2007). The contract administrator and environmental inspector will then contact the MNRF SAR biologist for advice.

Workers will be advised to perform visual surveys of machinery and work areas prior to commencing work since wildlife may be found basking or hiding on or under equipment, rocks, debris piles, etc. Additionally, a wildlife collection permit shall be sought by the Contractor prior to construction start.

8.1.3 Fisheries, Aquatic Ecosystems and Wetlands

As noted in Section 3.1.5, no fisheries SAR (provincial or federal) were identified within the study area following correspondence with MNRF and DFO, and upon review of the NHIC database.

Potential Effects

The existing culverts present at the Line 8 / Sideroad 10 intersection will require realignment to compensate for the proposed upgrades. In addition, the second culvert on Sideroad 10, approximately 280m north of Reagens Industrial Parkway will require replacement as a result of the proposed works and its current condition. A large box culvert is present at 150m west of Professor Day Drive. A culvert is also present approximately 20m to the east of the box culvert that crosses Line 8. Given the setback of the box culvert from the existing Line 8 there is sufficient space on the north and south side of the culvert to provide the additional two (2) lanes and median without impacting upon the culvert. For the small corrugated steel pipe (CSP) culvert 20m east of the box

culvert it will be removed as part of the reconstruction to an urban cross-section and water conveyed to the adjacent box culvert.

Through review of the Fisheries and Oceans Canada (DFO) self-assessment process it was determined that potential impacts to fish and fish habitat is considered low as a result of the culvert works for the project. The culverts present at Line 8 / Sideroad 10 Intersection, 280m north of Reagens Industrial Parkway and 20m east of the box culvert, where works will be undertaken, are all intermittent drainage features that do not support significant fish or fish habitat. As such, a DFO request for review (RfR) is not anticipated for this project at this stage, however, this will be reviewed again during detail design to ensure that no permitting or approvals are required. Implementation of appropriate mitigation measures as detailed below and listed in Exhibit 34 will avoid serious harm to fish and fish habitat.

The work area for the culvert to be replaced approximately 280m north of Reagens Industrial Parkway will be isolated from the watercourse using temporary cofferdams. Maintenance of flow will be achieved by actively pumping around the work area. The isolated work area will be dewatered, allowing for removal and replacement of the structure to be completed in the dry, and providing for containment during construction.

Dewatering activities and removal / relocation of fish will be required to allow for proposed in-water works at both previously noted culverts. MNRF Midhurst provided an in-water working window of July 16 to March 14 for when works can occur for all watercourses throughout the study area.

The following additional impacts to fish and fish habitat common to all watercourses located within the study area include:

- runoff from construction activities may lead to a temporary increase in surface water turbidity, with an increased risk of siltation;
- spills and leaks such as the introduction of sediment, concrete outwash, and other deleterious substances (e.g., salt, paint, solvents, oil and grease) during construction could allow contaminated water to enter the watercourse;
- excavation and grading close to the watercourse resulting in a change in sediment concentration; and,
- riparian vegetation clearing resulting in a change in cover for fish.

<u>Mitigation</u>

The following mitigation measures shall be followed to prevent adverse effects on fish and fish habitat:

- riparian vegetation clearing should be limited to the extent possible, particularly at the water's edge where vegetation provides overhead cover for fish;

- any equipment, machinery, or tools utilized in or immediately adjacent to the water shall be cleaned and maintained in good repair. All machinery shall be inspected for fluid leaks or other potential pollutants;
- all in-water works shall take place between July 16 to March 14 to protect fish populations during their spawning and nursery periods;
- the footprints of any cofferdams and in-water work areas shall be limited to the greatest extent possible, to minimize potential impacts to fish habitat and fish passage.
- prior to completing dewatering of any in-water works areas, stranded fish shall be salvaged by a qualified professional. Any captured fish shall be immediately released back into the watercourse from which they originated;
- should a cofferdam or in-water work area become breached, allowing fish to potentially re-enter the site, fish salvage activities shall be repeated;
- a Licence to Collect Fish for Scientific Purposes (LCFSP) shall be obtained from MNRF Midhurst to permit fish collection activities. All fisheries equipment shall be cleaned and disinfected according to MNRF Best Management Practices (MNR, 2011), prior to and following use;
- Any dewatering pump intakes that are placed in potential fish-bearing waters shall be fitted with screens to prevent the entrainment or impingement of fish or other aquatic wildlife. All water intake screens must adhere to Fisheries and Oceans Canada's Freshwater Intake End-of-Pipe Fish Screen Guideline (DFO, 1995); and,
- If construction activities result in harm to fish habitat, DFO's Fisheries Protection Program shall be notified as soon as possible. Work shall be halted until the underlying issue can be appropriately addressed in consultation with DFO.

8.1.4 Erosion and Sediment Control

Potential Effects

Soils will be exposed during construction as a result of vegetation removal previously discussed. There is a potential to cause short-term sediment export from the site. This will be further explored during detail design.

Mitigation

Standard erosion and sediment control measures will be implemented to reduce the potential impacts of grading during the proposed works. All relevant erosion and sediment control measures will be identified on the detail design contract drawings and the measures will be monitored during construction. The relevant mitigation measures will include:

- A comprehensive erosion and sediment control plan will be implemented by the contractor throughout construction in accordance with Ontario Provincial Standard Specification (OPSS) 805.
- Erosion and sediment control measures will be maintained in an effective, functioning, stable condition. Routine inspections will be required, and repair will be undertaken as required.
- Adherence to OPSS 804 Construction specification for seed and cover – specifies requirements for seed mixes.

8.2 Socio-Economic Environment

8.2.1 Property Impacts

Based upon the ultimate preferred design concept the following properties / land will be required to accommodate construction:

- 2940 Sideroad 10 (798.4 m^2)
- 3100 Sideroad 10 (430.9 m^2)
- 3066 Line 8 (241.0 m^2)
- 3004 Line 8 (1581.2 m^2)
- 2659 Line 8 (261.3 m^2)
- 2562 Line 8 (2514.0 m^2) – full property
- 2548 Line 8 (165.5 m^2)
- 2534 Line 8 (82.6 m^2)
- 2518 Line 8 (106.5 m^2);
- 2506 Line 8 (137.5 m^2)
- 2490 Line 8 (949.3 m^2) – full property
- 75 Gardiner Drive (500 m^2) – full property
- 2961 Sideroad 10 (1830.7 m^2)
- 3075 Line 8 (456.6 m^2);
- 3030 Line 8 (247.8 m^2)
- 2 Rogers Trail (18.0 m^2)
- 2572 Line 8 (91.5 m^2)
- 2554 Line 8 (83.0 m^2)
- 2540 Line 8 (162.3 m^2)
- 2524 Line 8 (106.5 m^2)
- 2512 Line 8 (82.7 m^2)
- 2496 Line 8 (180.8 m^2)
- 2486 Line 8 (960.3 m^2) – full property

The above noted property impacts may change slightly as the detail design develops.

8.2.2 Noise

Construction Noise

During times of construction, temporary noise increases will be experienced at adjacent residential and commercial receptors on Line 8 and Sideroad 10 as a result of construction equipment. This will particularly be the case in areas where there are upgrades to existing intersections or construction of new intersections.

Mitigation relating to construction noise is outlined in Exhibit 34.

Operational Noise

Valcoustics Canada Ltd. undertook a noise impact assessment to calculate the existing sound levels, the future sound levels without the proposed road improvements, the future sound levels with the proposed road improvements, and the resulting noise impact (i.e., change between the future with and without improvements scenarios) at each of the noise receptors shown on Figures 2 to 5 of the Noise Assessment Report (Appendix C) along with the methodology employed for the noise assessment.

The assessment was based upon the MTO Environmental Guide for Noise and MECP methodology (MECP Publication NPC-300). The 65 dBA threshold used in the MTO guide presents an upper limit that is still considered acceptable for residential outdoor living areas (OLAs). Once sound levels exceed this upper threshold, MTO recommends noise mitigation be provided to achieve sound levels as close to the 55 dBA objective as possible. For any residential developments that are currently under construction, they would have had a noise impact assessment done as part of the planning approvals process.

The proposed roadway improvement is predicted to result in insignificant noise impacts at all of the existing dwellings along the length of the study corridor. However, daytime sound levels at some dwellings are predicted to exceed the 65 dBA threshold. Thus, noise mitigation measures in the form of 2.6m high sound barriers are recommended where the threshold is exceeded. The recommended sound barriers provide at least 5 dB of attenuation and will mitigate the daytime sound levels to 60 dBA or lower and is acceptable under the MTO guidance.

The study recommended the upgrade of the existing backyard fences to closed board noise attenuating fences on the south side of Line 8 between 110m east of Noble Drive to Barrie Street, two (2) small barriers to the northeast and southeast of the Line 8 / Noble Drive Intersection and one (1) small barrier to the southeast of Langford Boulevard. The exact location of the noise attenuating fences is shown on Figure 6a-b of the Noise Assessment Report (Appendix C) and on the preliminary design plans (Appendix G).

8.2.3 Air Quality and Dust Emissions

Potential Effects

The widening of the cross section and future increase in traffic flows will result in the reduction of local air quality in the immediate vicinity of the study area. The reduction

would be negligible to minor in nature given the existing Line 8 and Sideroad 10 operations.

Short-term effects to air quality include dust emissions created by construction activities. Dust is likely to be generated from the following:

- vehicle traffic on unpaved roads or open construction area;
- material spillage on paved roads;
- loading, unloading, and transferring materials; and,
- drilling, crushing, and excavating.

All diesel operated vehicles and machinery will emit suspended particulate matter and odours as part of the exhaust emissions. Higher amounts of particulate emissions can be expected during long idling times and when many vehicles or engines are operating at one time.

Mitigation

The contractor will be required to implement standard mitigation measures for dust control during construction. Steps will be taken as necessary to control dust resulting from the construction works such that it does not affect traffic, enter surface waters, or escape beyond Line 8 or Sideroad 10 to cause a nuisance to residents or businesses.

The contractor will be required to implement dust suppression methods (water or other suppressant as appropriate) in close proximity to dust sensitive areas (i.e. residential and commercial receptors) to control off-site migration of particulates. It is noted that the MECP recommends the use of non-chloride dust suppressants.

Other dust control methods include:

- On-site vehicle and equipment idling will be discouraged where practical;
- Tracking of earth or soil from the site on trucks will be minimized through the use of mud mats located at the site entrance – if this is not effective then the physical removal of earth or soil from vehicles will be implemented;
- Vehicles hauling soil, aggregates or other dusty materials will be covered to minimize dust generation;
- Construction activities will be scheduled to limit areas of exposed soil and dust generation; and,
- Exposed sources of fugitive dust will be covered where practical and soil surfaces will be restored and re-vegetated in accordance with the contract.

8.2.4 Contaminated Property and Waste Management

Presence of asbestos containing materials (ACMs) is not anticipated given no bridge structures are present within the study area and the recently constructed box culvert located at 150m west of Professor Day Drive is the only structural culvert within the study area and does not contain asbestos.

Silica is likely present in the existing roadway. Demolition or any disturbance of any silica-containing roadway materials should be conducted following Part XXIV and recommendations detailed within the Ministry of Labour Guideline, "Silica on Construction Projects", dated April 2011, where specific legislation is not included under the OHSA. Recycling of silica-based materials removed from any work areas should be conducted in accordance with O. Reg. 102/94 and O. Reg. 103/94 under the Ontario Environmental Protection Act.

All parties will be advised of the potential for designated substances to be present during construction. Potential designated substances identified will be provided in the contract package.

8.2.5 Excess Materials Management

During construction, surplus material such as old pavement and concrete will be generated. These excess materials and debris should be removed and disposed of at an approved facility, in accordance with the latest version of OPSS 180.

8.3 Cultural Heritage

8.3.1 Archaeology

A stage 1 archaeological desktop study was completed in February 2017 by Archaeological Research Associates Ltd. (ARA) and encompassed the entirety of the study area. The Stage 1 desktop study determined that the study area has indeterminate archaeological potential due to various past construction impacts.

A ground penetrating radar (GPR) survey was undertaken following permission from the Bereavement Authority of Ontario (BAO) to potentially identify the locations of unmarked interments within the affected cemetery lands. The survey was completed on March 26-27, 2018. The GPR findings suggested the presence of grave shafts and evidence of several features likely related to historical use of the property as a cemetery.

A stage 2 archaeological assessment was completed for the whole of the ROW in May 2019 to determine whether any archaeological resources are present. Two (2) sites were identified for further archaeological investigation given the recovery of Euro-Canadian artifacts that date roughly to the mid-late 1800s.

The two (2) sites are as follows:

- Site 1: on the north side of Line 8 between 2580 Line 8 and 2604 Line 8 – recommended further intensive stage 2 investigation (i.e. additional test pit excavation and test unit excavation); and,
- Site 2: south of the known limits of Belfry Cemetery – recommended stage 3 investigation.

The additional stage 2 investigations on site 1 were undertaken on July 26, 2019 by ARA. Mid-1800 artifacts (590) were recovered relating to a farmstead present at the location at that time. As a result, a stage 3 investigation was completed between October 28 and November 5, 2019 to determine the extent of the archaeological site (i.e. farmstead) and characteristics of the artifacts. Given recovery of an additional four (4) Euro-Canadian features during the stage 3 investigation at Site 1, a stage 4 archaeological assessment would be required if the site was disturbed during construction. During detail design, options will be reviewed to the avoid areas that require a Stage 4 archaeological assessment.

In relation to site 2 (south of the known limits of Belfry Cemetery), the strategy of avoiding direct impact on Belfry was opted to prevent the requirement for stage 3 investigation. This will be done by limiting all construction activities within the previously disturbed area of the ROW, providing temporary fencing and "no-go areas" during construction to prevent disturbance within the cemetery, along with the presence of a licensed archaeologist on-site when construction activities are taking place within 10m of the cemetery property. The BAO and the Ministry of Heritage, Sport, Tourism and Culture Industries provided concurrence with this approach on October 17, 2019 and October 24, 2019, respectively (refer to Appendix N-2 for correspondence).

Further archaeological investigation will be undertaken at the detail design stage for lands to be acquired as part of the proposed scheme. The extent of the investigations will be determined during detail design with areas considered disturbed or not disturbed being identified through an initial stage 1 archaeological assessment.

Following detail design and during construction the following best management practices will be adhered to and included in the contract package:

- If previously unknown or unassessed deeply buried archaeological resources are uncovered during construction, the contractor shall immediately notify the CA. Work shall remain suspended within the subject area until otherwise directed by the CA in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the Ministry of Heritage, Sport, Tourism and Culture Industries representative (Laura Hatcher, Heritage Planner; Phone: 416-314-3108) who will confirm the need to engage a licensed consultant archaeologist to carry out any archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.
- If human remains are encountered during construction, the contractor shall immediately notify the CA. Work shall remain suspended within the subject area until

otherwise directed by the CA in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the Ministry of Heritage, Sport, Tourism and Culture Industries representative who will notify the police, coroner and the Registrar of the Bereavement Authority of Ontario.

All archaeological reporting completed during the MCEA process and preliminary design are provided in Appendix L.

8.3.2 Built Heritage and Cultural Heritage Landscapes

A Built Heritage and Cultural Heritage Landscape Assessment was undertaken for the study area by ARA in June 2019. The purpose of the assessment was to identify built heritage resources (BHR) and cultural heritage landscapes (CHL) that hold cultural heritage value or interest.

A BHR is defined in the 2014 Provincial Policy Statement (PPS) as "a building, structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Aboriginal community." The PPS defines a CHL as "a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Aboriginal community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association."

One (1) BHR was identified within the study area as having cultural value or interest: 2914 Sideroad 10 (BHR 1). Three (3) CHLs were identified in the study area: 2659 Line 8 (CHL 1); Belfry Cemetery at 2620 Line 8 (CHL 2), and 2843 Yonge Street (CHL 3).

Preliminary potential impacts were identified including: the possible removal of mature trees that contribute to the character of the historic properties associated with CHLs 1 and 2; and construction activities that have potential to create vibrations that may impact built cultural heritage resources located close the road (CHLs 1, 2 and 3). There is the potential for direct impacts to the pillars (a heritage attribute) of CHL 1 as they are located close to the project location; however, it was noted by the Town following the assessment that the stone pillars should be relocated in 2020 / 2021 to allow for extension of the existing sidewalk on the south side of Line 8 from Line 8 / Noble Drive Intersection to approximately 115m east.

Mitigation measures for built heritage and cultural heritage for the study area are provided in Exhibit 34 and shall be carried through to detail design and tender package. The Built Heritage and Cultural Heritage Landscape Assessment report is provided in Appendix M.

Exhibit 34: Summary of Potential Environmental Effects, Mitigation and Commitments to Future Works

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
Natural Environment			
1.0	Loss of Tree and Vegetation Cover	1.1	Damage to sensitive vegetation beyond that required for construction of the new road can be limited by clearly delineating vegetation protection zones on contract documents and in the field using sturdy fencing, and using appropriate tree clearing practices including felling trees away from retained areas. The landscape planting plan and road design will consider potential impacts to retained vegetation associated with salt spray and other operational impacts and mitigate these impacts to the extent possible.
		1.2	An erosion control strategy will be developed to isolate construction zones from retained vegetation using silt fencing. Silt fencing will be monitored and maintained throughout the construction period to ensure proper function. Areas where temporary disturbance/removal of vegetation is required for construction will be re-vegetated immediately following construction with an appropriate native seed mix and planting of native trees and shrubs to stabilize soils.
		1.3	A planting plan and edge management plan will be developed at detail design in accordance with any specifications from LSRCA or the municipality for compensation of any lost trees and to guard against edge damage due to new woodland edges. Monitoring of survival of planted trees and re-planting will occur as necessary.
		1.4	Timely re-vegetation (maximum 45 days) of exposed soils shall be undertaken for both temporary work areas and final grades; existing vegetation on embankments shall be maintained as long as possible and new slopes shall be stabilized as soon as possible by seeding and mulching.
		1.5	Avoid reusing or disposing of any excess materials (including earth) within the ROW unless specified in the contract.

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
2.0	Wildlife, Species at Risk and Species of Conservation Concern	2.1	All vegetation identified for removal should be assessed for any active nests prior to removal, and in the instance that a nest is encountered, the contractor should consult with the contract administrator to develop a management strategy to avoid interfering with active nesting.
		2.2	If discovered, the contractor shall not destroy active nests (nests containing eggs or young birds) at any time, or inactive nests of protected migratory bird nests during the migratory bird nesting season as identified by Environment Canada's General Nesting Periods of Migratory Birds in Canada for Nesting Zone C2 (April 1 – August 31). If tree clearing is unavoidable during these dates, a pre-clearing nest search will be completed by a qualified biologist and a setback.
		2.3	In the event that a SAR, or potential SAR, is found within the construction area, the contractor will immediately cease all work that could potentially harm the animal and will contact the contract administrator for direction, as these animals are protected under the Ontario Endangered Species Act (2007). The contract administrator or environmental inspector will then contact the MNRF SAR biologist for advice.
		2.4	Advise workers to perform visual survey of machinery and work area prior to commencing work since wildlife may be found basking or hiding on or under equipment, rocks, debris piles, etc.
3.0	Fisheries, Aquatic Ecosystems and Wetlands	3.1	Riparian vegetation clearing should be limited to the extent possible, particularly at the water's edge where vegetation provides overhead cover for fish.
		3.2	Any equipment, machinery, or tools utilized in or immediately adjacent to the water shall be cleaned and maintained in good repair. All machinery shall be inspected for fluid leaks or other potential pollutants.
		3.3	All in-water works shall take place between July 16 to March 14 to protect fish populations during their spawning and nursery periods.

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
		3.4	The footprints of any cofferdams and in-water work areas shall be limited to the greatest extent possible, to minimize potential impacts to fish habitat and fish passage.
		3.5	Prior to completing dewatering of any in-water works areas, stranded fish shall be salvaged by a qualified professional. Any captured fish shall be immediately released back into the watercourse from which they originated.
		3.6	Should a cofferdam or in-water work area become breached, allowing fish to potentially re-enter the site, fish salvage activities shall be repeated.
		3.7	A Licence to Collect Fish for Scientific Purposes (LCFSP) shall be obtained from MNRF Midhurst to permit fish collection activities. All fisheries equipment shall be cleaned and disinfected according to MNRF Best Management Practices (MNR, 2011), prior to and following use.
		3.8	Any dewatering pump intakes that are placed in potential fish-bearing waters shall be fitted with screens to prevent the entrainment or impingement of fish or other aquatic wildlife. All water intake screens must adhere to Fisheries and Oceans Canada's Freshwater Intake End-of-Pipe Fish Screen Guideline (DFO, 1995).
		3.9	If construction activities result in harm to fish habitat, DFO's Fisheries Protection Program shall be notified as soon as possible. Work shall be halted.
4.0	Erosion and Sediment Control	4.1	A comprehensive erosion and sediment control plan will be implemented by the contractor throughout construction in accordance with Ontario Provincial Standard Specification (OPSS) 805.
		4.2	Erosion and sediment control measures will be maintained in an effective, functioning, stable condition. Routine inspections will be required, and repair will be undertaken as required.
		4.3	Adherence to OPSS 804 Construction specification for seed and cover – specifies requirements for seed mixes.

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
Socio-Economic Environment			
5.0	Noise and Vibration	5.1	To minimize construction noise impacts on the surrounding environment adjacent residential / commercial properties, standard mitigation measures and best management practices will be included in the contract package. Specifically, the contractor will be required to keep idling of construction equipment to a minimum and to maintain equipment in good working order to reduce noise resulting from construction activities to adjacent residential and commercial receptors.
		5.2	If complaints regarding construction noise arise during construction, they will be investigated according to the provisions of the MTO Noise Guide (October 2006). The guide states that any initial complaint from the public will require verification that the general noise control measures agreed to are in effect. If not, the contract administrator / Town of Bradford West Gwillimbury will warn the contractor of any problems and enforce its contract.
		5.3	During construction, the Town's noise by-law will be adhered to (By-law 2008-083). This restricts any sound made by construction activities to the hours of 7:00 p.m. to 7:00 a.m. (to 9:00 a.m. on Saturdays) and at all times on Sundays and holidays.
		5.4	Upgrade of the existing backyard fences to closed board 2.6m noise attenuating fences on the north and south side of Line 8 between Noble Drive and Barrie Street.
6.0	Air Quality & Dust Emissions	6.1	The contractor will be required to implement standard mitigation measures for dust control during construction, and steps will be taken as necessary to control dust resulting from the construction works such that it does not affect traffic, enter surface waters, or escape beyond Line 8 or Sideroad 10 to cause a nuisance to residents or businesses.

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
		6.2	The contractor will be required to implement dust suppression methods (water or other suppressant as appropriate) in close proximity to dust sensitive areas (i.e. residential and commercial receptors) to control off-site migration of particulates. It is noted that the Ministry of the Environment, Conservation and Parks (MECP) recommends the use of non-chloride dust suppressants. Other dust control methods include: - On-site vehicle and equipment idling will be discouraged where practical; - Tracking of earth or soil from the site on trucks will be minimized through the use of mud mats located at the site entrance – if this is not effective then the physical removal of earth or soil from vehicles will be implemented; - Vehicles hauling soil, aggregates or other dusty materials will be covered to minimize dust generation; - Construction activities will be scheduled to limit areas of exposed soil and dust generation; and - Exposed sources of fugitive dust will be covered where practical and soil surfaces will be restored and re-vegetated as soon as practical.
7.0	Contaminated Property & Waste Management	7.1	Demolition or any disturbance of any silica-containing roadway materials should be conducted following Part XXIV and recommendations detailed within the Ministry of Labour Guideline, "Silica on Construction Projects", dated April 2011, where specific legislation is not included under the OHSA. Recycling of silica-based materials removed from any work areas should be conducted in accordance with O. Reg. 102/94 and O. Reg. 103/94 under the Ontario Environmental Protection Act.
		7.2	All parties will be advised of the potential for designated substances to be present during construction. Potential designated substances identified will be provided in the contract package.
8.0	Excess Materials Management	8.1	Any temporarily stockpiled soil, debris or other excess materials, and any construction-related materials, will be properly contained (e.g. inside silt fencing) in accordance with OPSS 180. All construction materials, excess materials and debris will be removed and appropriately disposed of following construction.

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
		8.2	All construction-related activities will be controlled to prevent entry of any petroleum products, debris or other potential contaminants/deleterious substances, in addition to sediment as outlined above, to the watercourses as outlined in OPSS 805 and in accordance with a Spills Prevention and Emergency Response Plan. The Plan, as well as appropriate emergency response materials, will be kept on-site throughout construction and all employees made aware of its requirements and response protocols.
9.0	Traffic Management	9.1	Advance road signage notifying motorists of the construction and potential lane closures will be provided prior to the start of construction. Emergency services will be granted priority passage (by on-site traffic control personnel) through all work area.
		9.2	The contractor will take all appropriate measures to ensure access to adjacent residential and commercial properties are maintained throughout the duration of the proposed works.
Cultural Heritage			
10.0	Archaeology	10.1	If previously unknown or unassessed deeply buried archaeological resources are uncovered during construction, the contractor shall immediately notify the CA. Work shall remain suspended within the subject area until otherwise directed by the CA in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the Ministry of Heritage, Sport, Tourism and Culture Industries representative (Laura Hatcher, Heritage Planner; Phone: 416-314-3108) who will confirm the need to engage a licensed consultant archaeologist to carry out any archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.
		10.2	If human remains are encountered during construction, the contractor shall immediately notify the CA. Work shall remain suspended within the subject area until otherwise directed by the CA in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the Ministry of Heritage, Sport, Tourism and Culture Industries representative who will notify the police, coroner and the Registrar of the Bereavement Authority of Ontario.

ID #	Environmental Issue / Concern / Potential Effects	ID #	Mitigation / Protection / Monitoring
		10.3	In relation to site 2 (south of the know limits of Belfry Cemetery), the strategy of avoiding direct impact on Belfry was opted. All construction activities shall be undertaken within the previously disturbed area of the ROW, along with providing temporary fencing and "no-go areas" during construction to prevent disturbance within the cemetery, and having a licensed archaeologist on-site during construction activities when work is being conducted within 10m of the cemetery property.
11.0	Built Heritage and Cultural Heritage Landscapes	11.1	During detail design, cultural heritage resources shall be avoided, where possible, and any construction staging areas be located on lands well away from any of the candidate BHRs and CHLs.
		11.2	During detail design, the removal of mature trees within CHLs 1 and 2 shall be avoided, where possible. For any trees that cannot be saved during construction, the 2:1 replacement of similar trees should be examined as per tree protection best practices.
		11.3	Consideration shall be given to the type of construction techniques and machinery used (i.e. those with reduced vibrations to be selected) where possible, in close proximity to cultural heritage resources (CHLs 1 and 2) to minimize any vibration impacts.
		11.4	Once detail design work has begun, the Town shall give consideration to whether a Heritage Impact Assessment (HIA) report is required to evaluate any additional impact of the proposed design, as well as outline avoidance / mitigation measures to minimize the impact.

9.0 PUBLIC AND STAKEHOLDER ENGAGEMENT

Public (including stakeholders and interested parties) and government review agency consultation is a key feature of the MCEA process. To this end, the study team have ensured that the public and relevant agencies were both informed of the study and given the opportunity to provide input in written and verbal form.

The consultation program was flexible and responsive to stakeholder and project needs. It engaged participants in a meaningful process that sought to consider their knowledge and advice.

Please note that all identifying personal information has been redacted where necessary to ensure the privacy of individual landowners as required under Canadian Law.

9.1 Notice of Study Commencement

The Notice of Study Commencement was first published on November 17, 2016 on the Bradford West Gwillimbury website (https://www.townofbwg.com/Line8EA) and in the Bradford Times newspaper. The notice provided information on the study, the MCEA process, the forthcoming PICs, and an invitation to provide comments. The Notice of Study Commencement is provided in Appendix N-1.

In addition, a study commencement letter was mailed to applicable Indigenous communities, provincial agencies, local municipalities, external agencies, utility companies, and adjacent landowners and residential / commercial developers out on November 14, 2017.

An invitation was provided to adjacent landowners, business owners and developers with the study commencement letter to attend the two (2) proposed stakeholder group meetings to discuss the project and express any concerns they may have. With the study commencement letter that went out to Indigenous communities, provincial agencies, local municipalities, external agencies, and utility companies, an alternative invitation was provided to invite them to the two (2) proposed Technical Advisory Committee (TAC) meetings. The purpose of the TAC meetings was to discuss technical aspects of the proposed design, for example, utility conflicts, drainage, environmental aspects such as archaeology and road design. A copy of each of the study commencement letters that were sent out are provided in Appendix N-1. A response date of December 12, 2016 was provided.

A complete list of Indigenous communities, provincial agencies, local municipalities, external agencies, and utility companies in which received a study commencement letter and TAC invitation is noted in Appendix N-1.

Responses from Landowners, Business Owners and Developers

A total of 41 landowners, business owners and developers provided a response to the Stakeholder Advisory Committee (SAC) meeting invitation with 21 noting they wanted to "volunteer as a member of the Stakeholder Group" and the remaining 20 stating they "would like to be kept informed of the project, but not be a member of the stakeholder group." In addition to the invitation, comments were also provided from landowners, business owners and developers regarding the study area. A summary of comments received are provided below:

- Concerns regarding increased speed of drivers on Line 8;
- Uncontrolled intersection at Line 8 and Northgate Dr. and same issue at Lowes Gate, along with Line 8 and Sideroad 10 intersection;
- Additional traffic noise, pollution and volumes as a result of the proposed scheme;
- Highlighted site distance issue 75m east of Noble Drive;
- Concerns regarding drainage and retention of mature trees;
- Residential / commercial developments in the pipeline adjacent to Line 8;
- Loss of parking area as a result of the potential widening of Line 8;
- Pleased improvements were being made to Line 8;
- Access to technical reporting at the SAC meetings; and,
- Lack of pedestrian crossings and sidewalk facilities.

Responses from Agencies

A total of twelve agencies provided responses to the study commencement letters sent. Exhibit 35 provides the agencies that responded to the letter and TAC invitation, and any supporting comments provided.

Exhibit 35: Response from Agencies following Study Commencement Letter Issue

Agency	Comment Received
Ministry of Transportation Ontario Peter Dorton Senior Project Manager	Email received November 24, 2016 - No concerns relating to the project as it not related to other arterial roads that connect to Highway 400. - No further consultation required with MTO.
Enbridge Gas Distribution Inc. Jamie Rochford	Email received November 28, 2016 - Noted Arnel Mangalino and his group will provide a mark-up review, and the Planning group would manage any gas facility relocations (if required).

Agency	Comment Received
Planning & Design Team Lead	
Chippewas of the Thames First Nation Fallon Burch Consultation Coordinator	Letter received on November 29, 2016 - Stated that the Chippewas of the Thames First Nation have identified no concerns with the project or the information was presented in the Study Commencement notice, and please to remove from mailing list. - Asked that if there are any changes to the project that are a substantive nature that they are kept informed.
Curve Lake First Nations Chief Phyllis Williams	Letter received on November 29, 2016 - Noted the study area us situated within the Traditional Territory of Curve Lake First Nation. - Stated they have not conducted exhaustive research nor have the resources to do so, and as such are not aware of any issues that would cause concern with respect to Curve Lake First Nation's Traditional, Aboriginal and Treaty rights. - Noted that should excavation unearth bones, remains or other such evidence of a native burial site or any Archaeological findings, that they should be notified.
Bell Canada Andrew Fournier Implementation Manager	Email received November 30, 2016 - Confirmed that he is the main contact for this project and to contact further as required.
Lake Simcoe Region Conservation Authority Lisa-Beth Bulford Development Planner	Email received November 30, 2016 - Noted would like to be kept informed of the project, but not be a member of the TAC committee. - Kept apprised of any watercourse, floodplain crossing and natural heritage impacts.
Aamjiwnaang First Nation Sharilyn Johnston Environmental Coordinator	Letter received on December 8, 2016 - Stated that the study area is not within the Aamjiwnaang First Nation's Traditional Territory and are therefore not interested in full consultation in relation to the project at this time. However, should the project have any changes please forward any documentation for consideration.
Rogers Graham McPherson Systems Planner/Designer	Fax received December 12, 2016 - Noted would like to be kept informed of the project, but not be a member of the TAC committee.

Agency	Comment Received
Beausoleil First Nation Susan Copegog Lands Consultation Liaison	Mailed received on December 14, 2016 - Noted would like to be kept informed of the project, but not be a member of the TAC committee. - Requested to be sent information that only pertains to archaeological or cultural impacts.
Ministry of the Environment and Climate Change Chunmei Liu Environmental Resource Planner & EA Coordinator	Email received December 16, 2016 - Acknowledged that the Town of Bradford West Gwillimbury is conducting a Class Environmental Assessment (EA) as a Schedule C project under the Municipal Engineers Association (MEA) Municipal Class EA. - Noted that failure to properly follow the Class EA process is an offence under the *Environmental Assessment Act*. - Requested that the Notice of Completion and Environmental Study Report (ESR) be forwarded to the MOECC when completed.
Hydro One Susan Sun Engineering Officer	Email received January 11, 2017 - Confirmed that Hydro One has high voltage transmission facilities within your study area. - Highlighted require further information on project (as design develops) before providing any meaningful input or approvals. - Noted that the potentially affected transmission corridor may have provisions for future lines or already contain secondary land uses (i.e. pipelines, water mains, parking, etc). - Stated that the integrity of the structure foundations must be maintained at all times, with no disturbance of the earth around the poles, guy wires and tower footings. There must not be any grading, excavating, filling or other civil work close to the structures. - Noted that the proponent will be held responsible for all costs associated with modification or relocation of Hydro One facilities, as well as any added costs that may be incurred due to increase efforts to maintain our facilities.
Chippewas of Georgina Island Dave Mowat Supervisor – Consultation, Lands and Membership	Fax received January 11, 2017 - Asked to be removed from mailing list.

Response forms, emails and letters provided by agencies during the study commencement period are provided in Appendix N-2 and responses provided where applicable.

9.2 Stakeholder Advisory Committee (SAC) Meeting #1

The first SAC meeting was held on July 26, 2017 at the Town's Leisure Centre, 471 West Park Avenue, Bradford, L3V 0J3. Letters were sent on July 4, 2017 to the 21 landowners, business owners and developers who indicated during the study commencement period that they would like to attend the SAC meeting. A copy of the invitation letter sent is provided in Appendix N-1. A total of 10 members of the general public attended the meeting, with no representatives of the development community in attendance. Each person was provided with a stakeholder information package. The information package provided a brief summary of the project, the MCEA process and the anticipated milestone meetings that will occur throughout the study and provided in Appendix N-3. Members of the study team (Planmac Engineering Inc. and the Town) were both in attendance at the meeting.

Information regarding the project was displayed on boards. Members of the stakeholder group had the opportunity to review the information boards, ask questions and provide input to the study team, in a one-on-one setting. At approximately 6:30 p.m. a formal presentation was made to describe the purpose of the meeting and to provide a summary of the various information boards on display. After the presentation, members of the group were provided with an opportunity to voice any comments or concerns regarding the study, in a question and answer forum. A copy of the presentation slides is provided in Appendix N-3.

Questions and concerns were raised in relation to a number of issues and included the following:

- Conversion of use of a private septic tank to municipal sanitary sewer as part of the proposed scheme;
- Concerns regarding potential impacts to Belfry Cemetery;
- Will the proposed scheme address the existing flooding issues just east of the Sideroad 10 intersection;
- Will the study team consider aspects of the 6th Line reconstruction project which are like the options being considered for Line 8?;
- Presence of a high-pressure gas line on the north side of Line 8; and,
- Installation of new sidewalks / multi-use trail and pedestrian crossings as part of the proposed scheme.

For a complete list of questions and answers provided at the SAC meeting please refer to the "Stakeholder Meeting Summary Report" provided in Appendix N-2. Following the question and answer session a summary of next steps was provided to the attendees, including what would be presented at PIC #1.

Three (3) comment forms and two (2) emails were received following the SAC meeting. The redacted versions of the comment forms / emails and correspondence are provided in Appendix N-2.

9.3 Technical Advisory Committee Meeting #1

TAC Meeting #1 was held at the Town's Engineering Office, 305 Barrie Street, Bradford, L3Z 2A9 on September 15, 2017. Invitation letters were sent out to the following organizations requesting their presence:

- Bell Canada
- Rogers Cable
- Stacey Electric Company Limited
- County of Simcoe
- Lake Simcoe and Region Conservation Authority (LSRCA)
- Hydro One
- Alectra Utilities (formerly Powerstream)
- Enbridge Gas Distribution
- Ministry of Natural Resources and Forestry (MNRF)
- Vianet Communications

The letters were sent out on September 1, 2017 and the letter to Vianet Communications on September 13, 2017. The letters sent are provided in Appendix N-1.

The LSRCA provided notice following receiving of the letter that they would not be able to attend due to a scheduling conflict, but were helpful in providing watercourse, floodplain, and stormwater management information for the study area; this is provided in Appendix N-2.

Members of the study team (the Town and Planmac) were both in attendance at the meeting. The meeting began with introductions followed by a presentation of the Line 8 Class process by Planmac as shown in Appendix N-3. Following the presentation, an open discussion was held; the main points raised are noted below:

- Planmac noted that it is important to receive feedback from the TAC group on any future relocation and/or expansion plans that may have an impact on the future road and intersection improvements. To that end, each member of the TAC committee agreed to keep the EA team apprised of any new developments and/or infrastructure plans moving forward.

- The Town advised that the MCEA and design phase is expected to take approximately two (2) years to complete. Property acquisition and utility relocations would then occur in 2020 / 2021. Following which the capital construction contract for the road improvements would occur in 2022/2023, subject to budget approval.
- Rogers provided a hard copy plot of their existing utility plant to Planmac at the meeting. Planmac noted they would review and forward a copy of the overall utility composite plan prepared to-date (based on a SUE quality level B investigation) to each utility company along with a request to confirm its accuracy and completeness.
- Each utility company was asked by the Town / Planmac to keep the EA team apprised of all future utility relocation and / or replacement work so that the composite plan may be updated.

Following the above noted discussions, Planmac, prior to meeting adjournment, noted that the next TAC meeting would be held prior to PIC#2. The TAC #1 meeting notes and attendees are provided in Appendix N-2.

9.4 Council Presentation #1

A presentation to Council was provided by Planmac on November 7, 2017 outlining the MCEA process, project progress thus far, and the content of the presentation boards to be displayed at the upcoming PIC#1 on December 12, 2017. The presentation boards were well received by Council and were content with the PIC proceeding on the suggested date.

9.5 Public Information Centre #1

The first PIC was held at the Town's Library located at 425 Holland Street West, Bradford, on December 12, 2017, between the hours of 5:30 p.m. and 9:00 p.m.

A Notice of PIC #1 was sent to the same Indigenous communities, provincial agencies, local municipalities, external agencies, and utility companies outlined in Appendix N-1, along with members of the general public. A copy of the Notice of PIC #1 was also posted in the Bradford Times on November 20, 2017 and provided on the Town website. The Notice of PIC #1 sent out is provided in Appendix N-1. Correspondence received before PIC #1, following receiving the notice, is provided in Appendix N-2 and redacted where pertaining to members of the general public.

The purpose of PIC #1 was to introduce the study and present the problem and opportunity statement, alternative solutions to the problem or opportunity and the preliminary preferred solution(s). The PIC was an informal drop-in format, during which applicable study material and display boards were available for viewing. The display board material is provided in Appendix N-3. Representatives of the study team were

on hand to answer individual questions in a one-on-one format relating to the project and the MCEA process.

At approximately 5:30 p.m. the public session of the PIC commenced. A total of 37 individuals signed the sign-in sheet. Some attendees may not have signed the sign-in sheet and therefore actual attendance is estimated to be approximately 40. At the end of the PIC, ten comment sheets were submitted. Following the PIC, a further nine (9) comment forms were submitted electronically, six (6) emails were received (with no comment form) pertaining to the material viewed at the PIC, and one (1) letter. Appendix N-2 provides all correspondence received during / following PIC#1 and redacted from members of the general public.

Exhibit 36 below summarizes the comments received during / following PIC #1 and responses provided to developers and members of the general public via letter and email. A template of the response letter sent to each of the members of the general public who provided a comment form for PIC#1 is provided in Appendix N-1.

Only one (1) comment was received from an external agency, excluding developers, following PIC #1: the Chippewas of the Thames First Nation. A letter was provided to the study team, dated December 21, 2017 noting that they had no concerns with the project, or the information presented at PIC #1.

Exhibit 36: Comments and Responses following PIC#1

Comment Item #	Question / Comment	Response
1	Member of the General Public (Comment Form) - Will there be traffic lights installed at the Line 8 / Sideroad 10 as part of the proposed scheme? - Concerns with regards to existing traffic noise levels on Line 8.	- The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic. - A noise assessment will be undertaken prior to PIC #2 to determine if noise barriers or other noise mitigation measures would be warranted based upon future traffic flows / noise levels in the area.
2	Member of the General Public (Comment Form) There are existing tile drainage outlets that drain into 8th line and should be kept clear when working.	Drainage improvements throughout the Line 8 corridor are being studied and will be implemented as part of the road reconstruction strategy.
3	Member of the General Public (Comment Form) Would like to be added the Stakeholder Group.	Added to contact list.
4	Member of the General Public (Comment Form) Line 8 is one of those routes, however, due to the traffic on Line 8 I am using the 10th Sideroad to the 6th Line then to Simcoe Road, Marshview Boulevard to get to Newmarket because the 8th Line, Dissette Street is too busy. Finally, I feel the population projection of 50,500 by 2031 is underestimated. More people are going to want to move to BWG than is being projected.	The Preliminary Preferred Alternative presented at PIC #1 provides additional capacity, as well as improving roadway operations and safety improvements. Population growth targets are provided by the provincial government, through the Growth Plan for the Greater Golden Horseshoe (May 2017).
5	Member of the General Public (Comment Form) - Agrees with proposed solution (expanding to 4/5 lane road). - The intersection of 8th and 10th Lines is already approaching dangerous levels of high	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.

Comment Item #	Question / Comment	Response
	volume traffic and has no traffic control beyond two (2) east / west stop signs.	
6	Member of the General Public (Comment Form) Another concern is the possibility of losing land to this project, even though I am assured this won't happen. I imagine this project will require a long time to complete. It is a great concern the lack of lights at the 10th Sideroad.	Property requirements have not been confirmed at this phase of the Class EA process, however where possible, impacts to private property will be minimized and carefully reviewed during the design phase. The EA study will identify the improvements required at Sideroad 10 / Line 8.
7	Member of the General Public (Comment Form) - What provisions will be made for sound and safety? - Will there be an issue with property expropriation? - Have considerations been made regarding the potential 400 / 404 Link?	- A noise assessment will be undertaken prior to PIC #2 to determine if noise barriers or other noise mitigation measures would be warranted based upon future traffic flows / noise levels in the area. As noted in the Problem / Opportunity Statement pedestrian safety deficiencies will be reviewed and addressed during detail design. In relation to vehicle traffic, the Preliminary Preferred Alternative was assessed as most beneficial in terms of driver safety due to the improved roadway operations via provisions of additional capacity and reduced congestion. - Property requirements have not been confirmed at this phase of the Class EA process, however where possible, impacts to private property will be minimized and carefully reviewed during the design phase. - This project only pertains to the extent of the Line 8 and Sideroad 10 Improvements study area and therefore considerations within this project have not been made to the 400 / 404 link.
8	Member of the General Public (Comment Form) - Traffic is very heavy.	- It is likely that intersection improvements will be required to manage traffic.

Comment Item #	Question / Comment	Response
	- Smell from tractor trailer exhausts are very strong – health concerns. - Making left or right turn out of driveway is very challenging. - Worried about Town taking frontage; if driveway is gets moved then I will have to move septic, tree removal, pave new driveway.	- The alleviation of traffic congestion will help to reduce the idling of such farming equipment due to improved traffic flow and therefore reduce exposure of air pollutants to pedestrians and adjacent properties. - The detail design will consider potential for intersection improvements. For properties that front on Line 8, the additional capacity will provide greater gaps in the traffic flow thus improving access into and out of private driveways. - Property requirements have not been confirmed at this phase of the Class EA process, however where possible, impacts to private property will be minimized and carefully reviewed during the design phase.
9	<u>Member of the General Public (Comment Form)</u> - 8th and 10th Sideroad needed traffic lights two (2) years ago. Combination of the hill to the north, traffic volumes, frequent left turns, and transport trucks makes this intersection an accident waiting to happen. Not sure how well transport trucks could navigate a roundabout. Perhaps a slip lane from northbound 10th Sideroad to eastbound 8th Line could be considered if this is adopted – keeping right-turning traffic out of the intersection. - Four (4) lanes and traffic lights at 8th Line and Professor Day. People frequently pass left-hand turning traffic on the shoulder. Left-turns difficult with high volume.	- The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic. - Your comments regarding providing four (4) lanes and traffic lights at 8th Line and Professor Day; expansion of the western part of the intersection at 8th Line and Barrie to four (4) lanes; four (4) lanes between Reagens and 8th Line; and four (4) lanes between 10th Sideroad and Professor Day Drive have been acknowledged and will be considered during the MCEA process and detail design stage.

Comment Item #	Question / Comment	Response
	- Expand western part of the intersection at 8th Line and Barrie to four (4) lanes. Hopefully section between Barrie and Taucar Gate could be kept at 2 or 3 lanes to help homeowners there after the intersection expansion – might not be feasible if highway link happens. - Four (4) lanes between Reagens and 8th Line. Not a huge deal but might as well finish it. - Four (4) lanes between 10th Sideroad and Professor Day Drive. Not a huge issue now but probably needed for future growth.	
10	<u>Member of the General Public (Comment Form)</u> - Please have consideration for pre-inspections of properties on the south side of Line 8 i.e. foundations, swimming pools. - Save as many mature trees as possible particularly some large mature trees on the south side (where land is not required) (expropriation).	- Construction operations are not anticipated to impact existing structures. Notwithstanding, this will be reviewed during the design phase and appropriate measures included in the contract tender documentation. - Tree removal will be minimized wherever possible and will only occur where determined mandatory for the proposed works. - Property requirements have not been confirmed at this phase of the Class EA process, however where possible, impacts to private property will be minimized and carefully reviewed during the design phase.
11	<u>Member of the General Public (Comment Form)</u> - Re. traffic lights at 8th Line and 10th Sideroad, this intersection gets worse and worse especially with aggressive trucks heading west on 8th Line and turning left, south on 10th Sideroad.	- The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic. - In relation to the "hill north of the 8th Line" opportunities to improve sight lines for vehicles between Sideroad 10 to Line 8 will be considered based on current geometric

Comment Item #	Question / Comment	Response
	- The number of vehicles on these roads keep increasing, heaven help us if 400 is in trouble! - The hill north of the 8th Line reduces visibility especially for vehicles exceeding the speed limit. - Lights should be installed before one of us is seriously injured.	standards. Furthermore, the proposed improvements to the Line 8 / Sideroad 10 intersection, determined by the EA process, will improve roadway operations and safety.
12	<u>Member of the General Public (Comment Form)</u> - One (1) light is needed at every rural intersection for safety reasons. My car was almost hit at Sideroad 10 and Line 11. In any fog there is real danger of going on any Bradford intersections because of missing lights. - More stop lights are needed as more drivers come into the area. In Cookstown a light is needed at the plaza and Home Hardware as the huge traffic from Honda needs to be broken up so people are less likely to be killed.	- As part of the detail design of the preferred design concept, a review of all intersections within the study area will be undertaken to ensure traffic operations, capacity and safety are addressed. - Public safety is of key importance to the Town with pedestrian and vehicular safety being a main factor in this project.
13	<u>Member of the General Public (Comment Form)</u> The intersection of County Road 10 and 8th Line has become a very busy intersection because the 8th Line is used as a means of avoiding the Main Street. Very busy with truck traffic – in summer the cottage weekend traffic, if you need to turn left it is a game of roulette. You would take more chances because you wait to get a break in traffic.	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.

Comment Item #	Question / Comment	Response
14	Member of the General Public (Comment Form) There will be too much traffic with the industry with the Retirement Home at the corner of 10th and 8th. Then there is Bob Fallis Arena where traffic is busy all the time.	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.
15	Member of the General Public (Comment Form) Must we wait for someone to get hurt in an accident before we do something??? This area at the 8th Line and 10th Sideroad has become a high traffic area already! How congested will it be when the new Retirement Home on the corner opens up?? Many residents and employees will be using this intersection along with all the people who use it now. Congestion will reign! Please reconsider and install traffic lights now!!!	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.
16	Member of the General Public (Comment Form) - It is hard to believe that the committee has not noted the traffic at the 8th and 10th Sideroad and the real danger there. There is a light at on the 8th and Summerlyn which is not nearly as busy, how was that passed and the 8th and 10th Sideroad not slated until 2021. - People are using alternate routes to travel in the area because it is difficult to turn safely at the 8th and 10th.	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.
17	Member of the General Public (Comment Form) It doesn't make any sense to have lights on the 8th at residential streets and not have a light at a	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.

Comment Item #	Question / Comment	Response
	main intersection if the Middletown and the 8th. 2021 is too far away. Please don't wait until someone is killed.	
18	Member of the General Public (Comment Form) We definitely need a stop light at this intersection, at least a 4 way stop.	The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic.
19	Member of the General Public (Comment Form) - Regarding traffic lights at 10th and 8th the new seniors building will add a lot of traffic at this corner (workers, visitors, patients, ambulances, etc.). - The new developments along 8th use the intersection frequently to get to the 400, shopping area, etc. - Factory workers in the area, typically arrive and leave at the same time, creating volume of traffic. - Churchgoers user this intersection at least on Sundays.	- The EA study will identify the improvements required at Sideroad 10 / Line 8. It is likely that intersection improvements will be required to manage traffic. - The Preliminary Preferred Alternative presented at PIC #1 provide additional capacity necessary to accommodate future 2041 traffic growth and increased traffic volume, as well as improved roadway operations and safety improvements. The expanded roadway will also accommodate additional external, local, commercial/industrial and bypass traffic.
20	Chippewas of the Thames First Nation (Rochelle Smith, A/ Consultation Coordinator) (Letter) - In our screening of your correspondence we have identified no concerns with your project or the information that you have presented to us at the time. - We ask that if there are any changes to your project that are of a substantive nature that you keep us informed.	- Comments acknowledged.

Comment Item #	Question / Comment	Response
21	Member of the General Public (Email) - I am writing to express my support for Alternative 6. - The residents of this Town need this east-west thoroughfare to supplement Holland Street West and to carry the increased traffic that comes with our increasing population. - The reconstruction of Line 8 will also create an alternate route for trucks and other through-traffic to access Highway 400 (including the new employment lands) without congesting our downtown core. - Understandably, there are a few property owners that will be negatively affected by the widening of Line 8, but I think it is irresponsible to put their needs before the needs of the rest of the Town. You can't stand in the way of progress. - As for the intersection of Line 8 and 10th Sideroad, I believe that it is in need of immediate repair.	Thank you for your comment. We will ensure it is included in the Environmental Assessment Report that will be created for the Line 8 and Sideroad 10 EA.
22	Member of the General Public (Email) This is regarding lights at the 8th line and 10th side road. This is a very busy intersection now and once the residence is filled it will be chaos. There are a lot of heavy trucks on these two (2) roads and waiting until 2021 or until someone gets killed or hurt at this intersection, to put lights at this intersection. might be too late. It is better to be safe than sorry. Once someone is killed or maimed	Thank you very much for taking the time to provide your comments and concerns. We will ensure that your comments are added into the Line 8 and Sideroad 10 Environmental Assessment Report created for this project.

Comment Item #	Question / Comment	Response
	is too late. Maybe now is the time to think about putting lights in.	
23	Member of the General Public (Email) Over the last year it has become more and more difficult turning left from Line 8 onto southbound Middletown. The traffic flow from the north is almost continuous esp. in the morning and cars coming north do not signal whether they are turning onto the 8th until the last minute. With the building of the Senior's center at that corner I expect the traffic flow to increase and I urge you to consider putting a traffic light at that corner.	Thank you very much for taking the time to provide your comments and concerns. We will ensure that your comments are added into the Line 8 and Sideroad 10 Environmental Assessment Report created for this project.
24	Humphries Planning Group Inc. (Hesham Mohamed) (Email) - Noted they are representing the owners of Bradvit Holdings Ltd. - Stated they were unable to attend PIC#1 and would appreciate receiving any information provided at that time.	PIC#1 slides were provided on February 13, 2018. Noted if anything else is required to let the study team know.
25	R-CHAD General Consulting (Raman Chaudhari, President) (Email) - We would like to know that as part of Environmental Assessment Study for road widening of 8th Line (and/or Barrie Street), is anyone performing Environment Impact Study (EIS) in view of the nearby Lake Simcoe Conservation area along Barrie Street. - As part of our development, we need EIS and so if someone is performing such study then	The environmental assessment which is being completed for the Town is being conducted for the entire Line 8 / Sideroad 10 corridor and not specific to only 300 Barrie Street. Unfortunately, there is no ability to incorporate a separate EIS on your behalf. The EA process requires an independent traceable assessment and cannot be carried out in parallel with a singular development. It must include the entire transportation corridor. As the developer of 300 Barrie Street you will be required to complete an EIS report independent from our Line 8 EA EIS report. Cost sharing cannot be

Comment Item #	Question / Comment	Response
	we can save our cost or share the cost. We will greatly appreciate your expedited response.	accommodated with your property for the same reasons as noted in this response to ensure a traceable unbiased public process.
26	<u>SCS Consulting Group Ltd. (Email)</u> - Representing Lormel Homes. - It is our understanding that the preferred alternative is a 4-5 lane cross-section with a minimum ROW of 32m. Please confirm that this ROQW can be accommodated on Lormel's frontage without additional land acquisition. - It is our understanding that traffic controls are contemplated at the intersection of Professor Day Drive and 8th Line with either a traffic signals or a round-about. We wish to inform you that we do not support the round-about option. - There are some grading challenges on the north side of 8th line, please provide input as to how you will deal with the grade difference without acquiring additional lands. - Will any temporary easements be required for construction? - What is the construction timing for the work? - There are utility poles on the north side of 8th Line, is the intention to burry these or relocate? Our client is proposing units with frontages on 8th line and it would be unfortunate to have poles in the way.	1. The final configuration and cross section will be confirmed post PIC#1 and as part of the alternative evaluation. This work will be undertaken following receipt of all public comments from the PIC and into spring 2018. We should be able to report back on findings which will be presented publicly following the Town's review in Spring/Summer 2018. 2. The decision on a traffic signal intersection or roundabout control intersection will be made as part of the alternative evaluation process similar to what we have outlined in response to item 1 above. 3. The proposal to address grade differences can be addressed with retaining wall, filling and property acquisition, roadway profile grade adjustments. This will be developed further as outlined in item 1 above. 4. This has not been developed in full detail although will be addressed as outlined in item 1 above. 5. This is of course subject to receipt of necessary approvals. Preliminary timelines are offered as follows (subject to change as the project develops): • Class EA completion 2018; • Detail design 2019 / initiation of property / utility relocations; • Property / Utility Relocation Completion in 2019/2020; and

Comment Item #	Question / Comment	Response
	- There are sight-line issues at Noble/8th Line, what is being proposed (if anything) to mitigate this? - We understand that the preliminary design will be available for review at the 2nd PIC meeting and, as a result, not all questions can be answered at this time. We would appreciate you forwarding any information as it becomes available as we wish to protect our client's interest for development along this portion of 8th Line.	• Construction start 2020/2021. Construction may proceed in several phases over multiple years 6. See response to item 1 above. Utility conflicts that arise from the preferred design will be addressed by relocations. 7. Please provide your input on these issues. The plan is to address any issues with the design development. Please feel free to follow up with us anytime for further input.

9.6 Community Liaison Group

A meeting was held on November 6, 2018 between the project team, members of council, and members of the general public. The purpose of the meeting was to provide an overview of the project, goals and opportunities, work completion to date, proposed design alternatives, and schedule and key milestones.

A presentation was provided by the Town's Capital Projects Department. A copy of the presentation slides is provided in Appendix N-3. Comments received from the attendees included the following:

- Enquiry on whether Belfry Cemetery would be impacted. Informed that the design would avoid the cemetery.
- One (1) attendee asked if Innisfil's projected growth was captured in the traffic data. The project team noted that it was.
- Enquiry of whether Line 9 was being looked at as part of the project. Informed that Line 8 was the focus of this assignment.
- Concern with "overbuilding" if the Highway 400-404 Connecting Link was to be built but acknowledged the usefulness of construction being staged (i.e. 2020, 2030 and 2040 that could be restricted).
- Concern with potential multi-use trail on north side of Line 8 for those residents reversing out of their property (i.e. potential for conflict and collision). Roughly 16 properties east of Lowes Gate would not want the trail for this reason noted a member of council.
- Member of council noted they were not in favour of the roundabout at Line 8 / Barrie Street / Yonge Street signalized intersection.

9.7 Stakeholder Advisory Committee (SAC) Meeting #2

The second SAC meeting was held on May 8, 2019 at the Town's Leisure Centre. Letters were sent on April 18, 2019 to 26 landowners, business owners and developers. A copy of the invitation letter sent is provided in Appendix N-1. A total of 11 attendees were present, including one (1) representative of a local housing developer.

Members of the project team (Planmac Engineering Inc. and the Town) were both in attendance at the meeting.

The purpose SAC Meeting #2 was to:

- provide an update on the Class EA study process;
- present the alternative design concepts for the preferred solution;

- present the preliminary preferred design concept for road and intersection improvements;
- present background study findings relating to noise mitigation and stormwater management;
- explain next steps;
- summarize tentative timelines for completion of the MCEA, detail design, utility relocation and construction; and,
- receive input and respond to questions.

Information regarding the project was displayed on boards. Members of the stakeholder group had the opportunity to review the information boards, ask questions and provide input to the study team, in a one-on-one setting. A copy of the presentation slides is provided in Appendix N-3.

Questions and concerns raised during SAC #2 included the following:

- Construction schedule;
- Property acquisition requirements;
- Impact upon utilities;
- If Belfry Cemetery would be impacted by the proposed widening;
- Requirements for tree felling at certain properties;
- The look of the proposed 2.6m sound barrier; and,
- Pedestrian facilities to be provided as part of the proposed scheme.

No comment forms were received following the SAC meeting, although two (2) emails were received: one (1) from a consultant, acting on behalf of a developer, and a further email from another developer. The nature of the first email was to obtain a copy of the SAC #2 presentation slides and the second email to gain further understanding of property acquisition requirements, access accommodation and utility impacts. The emails and correspondence are provided in Appendix N-2.

9.8 Technical Advisory Committee (TAC) Meeting #2

TAC Meeting #2 was held at the Town's Engineering Office, on May 15, 2019. Invitation letters were sent out to the same organizations as that of TAC Meeting #1. The letters were sent out on April 18, 2019 and are provided in Appendix N-1. Enbridge Gas provided notice following receiving the letter that they would not be able to attend due to a scheduling conflict but asked if they could connect with the Town following the meeting to discuss potential conflicts; this is provided in Appendix N-2. Conversations were held between both parties following the meeting.

Members of the project team (the Town and Planmac) were both in attendance at the meeting. The meeting began with introductions followed by a presentation by Planmac providing an update on the project, schedule and preliminary preferred design concept as provided in Appendix N-3. Following the presentation, an open discussion was held; the main points raised are noted below:

- Discussions regarding the proposed drainage strategy and the opportunity for low impact development stormwater control measures;
- Planmac advised on the preliminary schedule including the timing of utility relocations (between 2020 and 2023); and
- Confirmation of Vianet assets.

The TAC #2 meeting notes and attendees are provided in Appendix N-2.

9.9 Public Information Centre #2

PIC #2 was held at the Town's Leisure Centre on May 22, 2019 between the hours of 5:30 p.m. and 9:00 p.m. A notice of PIC #2 was sent to Indigenous communities, provincial agencies, local municipalities, external agencies, and utility companies, along with members of the general public. A copy of the notice of PIC #2 was also posted in the Topic and provided on the Town website. The notice of PIC #2 sent out is provided in Appendix N-1. Correspondence was received before PIC #2, following receiving the notice, by one (1) member of the general public and a redacted email version is provided in Appendix N-2.

The purpose of PIC #2 was to give attendees the opportunity to provide comments on the preliminary preferred design concept and provided an update on next steps and timelines to construction completion. The PIC was an informal drop in format, during which applicable study material and display boards were available for viewing. The display board material is provided in Appendix N-3. Representatives of the study team were on hand to answer individual questions in a one-on-one format.

A total of 14 individuals signed the sign-in sheet. At the end of the PIC, six (6) comment sheets were submitted. Following the PIC, two (2) emails were received (with no comment form) pertaining to the material viewed at the PIC. Appendix N-2 provides all correspondence received during / following PIC #2 and redacted from members of the general public.

9.10 Public Information Centre #3

The purpose of PIC#3 was to:

- Provide an update on the MCEA process after the final evaluation and selection of the ultimate preferred design concept;
- Present the interim and ultimate preferred design concept;
- Summarize the Town's phasing plan to move forward with the proposed Line 8 and Sideroad 10 Improvements;
- Provide an update on the timing of intersection upgrades; and,
- Answer questions based upon the Province's August 15, 2019 announcement of the proposed Highway 400-404 Connecting Link.

The PIC was held at Bradford West Gwillimbury Leisure Centre on November 21, 2019, between 5:30 p.m. and 9:00 p.m. A Notice of PIC #3 was sent to Indigenous communities, provincial agencies, local municipalities, external agencies, and utility companies, along with members of the general public. A copy of the notice of PIC #2 was posted on the Town website. Similar to the prior (2) PICs, PIC#3 PIC was an informal drop in format, during which applicable study material and display boards were available for viewing. The display board material is provided in Appendix N-3.

A total of 12 individuals signed the sign-in sheet and one (1) comment sheet was submitted during the PIC. Following the PIC, no further comments or emails were received. Appendix N-2 provides all correspondence received during / following PIC #3 and redacted from members of the general public.

10.0 NEXT STEPS

10.1 Future Commitments

In completion of the MCEA process and preliminary design stage the next steps for the project are as follows:

- Undertake and complete detail design for the whole proposed scheme and finalize property requirements;
- Preparation of contract tender documentation incorporating all commitments and mitigation items;
- Continue property acquisition including OLS legal surveys and reference plans, and negotiations and agreements with property owners;
- Undertake required utility relocations; and,
- Construction of proposed scheme in line with proposed phasing discussed in Section 7.2.

10.2 Permit and Approval Requirements

Stage 1 archaeological assessment for lands to be acquired for construction will be completed and submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries for review and concurrence.

As described in Section 8.3.1, a stage 4 archaeological assessment would be required if site 1, located on the north side of Line 8 between 2580 Line 8 and 2604 Line 8, was disturbed during construction. During detail design, options will be reviewed to the avoid areas that require a stage 4 archaeological assessment.

LSRCA permitting under Ontario Regulation [O.Reg] 179/06 ("Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation") will be sought as part of the project. The permit shall be pursued during detail design.

In relation to approvals for stormwater, wastewater and potable water, an application for an Environmental Compliance Approval (ECA) shall be submitted to the MECP.

Approvals shall be designed by utility companies for required relocations to accommodate construction. This shall be undertaken during the detail design stage and prior to the release of tender documentation.