Design and Construction Report

Highway 11 / Penetanguishene Road (formerly Simcoe County Road 93) Bridge Replacement and Interchange Reconstruction / Detail Design and Class Environmental Assessment Study (GWP 2306-16-00)

Ontario Ministry of Transportation

60724032

September 2026

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Highway 11 / Penetanguishene Road Bridge Replacement
GWP 2306-16-00
Detail Design and Class Environmental Assessment Study
Design and Construction Report

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Jon Newman, P.Eng. Project Manager Manager, Transportation Planning and Design AECOM	Thomas Visca Environmental Planner Ontario Ministry of Transportation	Linda Fischer Head, Environmental Delivery Ontario Ministry of Transportation

The Public Record

This Design and Construction Report has been prepared to document the recommended improvements, consultation undertaken, and potential environmental issues and mitigation measures associated with the Detail Design and Class Environmental Assessment (Group 'B') study for the replacement of the Penetanguishene Road (Simcoe County Road 93) Overpass at Highway 11 and the associated interchange improvements.

The Design and Construction Report is available on the project website at Hwy11-CR93.ca for a 30-day public and agency comment period starting **September 28, 2026**, and ending **October 29, 2026**.

To obtain additional information or provide comments please contact the Project Team:

- **Sherry Li, P.Eng.**
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  Central Transportation Infrastructure Management Division
  Ministry of Transportation
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  AECOM Project Manager
  105 Commerce Valley Drive West, 7th Floor
  Markham, Ontario L3T 7W3
  Telephone: 905-242-1765
  Email: projectteam@Hwy11-CR93.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. If you have any accessibility requirements in order to participate in this project, please contact one of the MTO Project Team members listed above.

A request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or

remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

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

The request should be sent in writing or by email to the following and copied to the Ministry of Transportation Project Engineer listed above and to:

- **Minister of the Environment, Conservation and Parks**
  777 Bay Street, 5th Floor
  Toronto, Ontario M7A 2J3
  Email: minister.mecp@ontario.ca

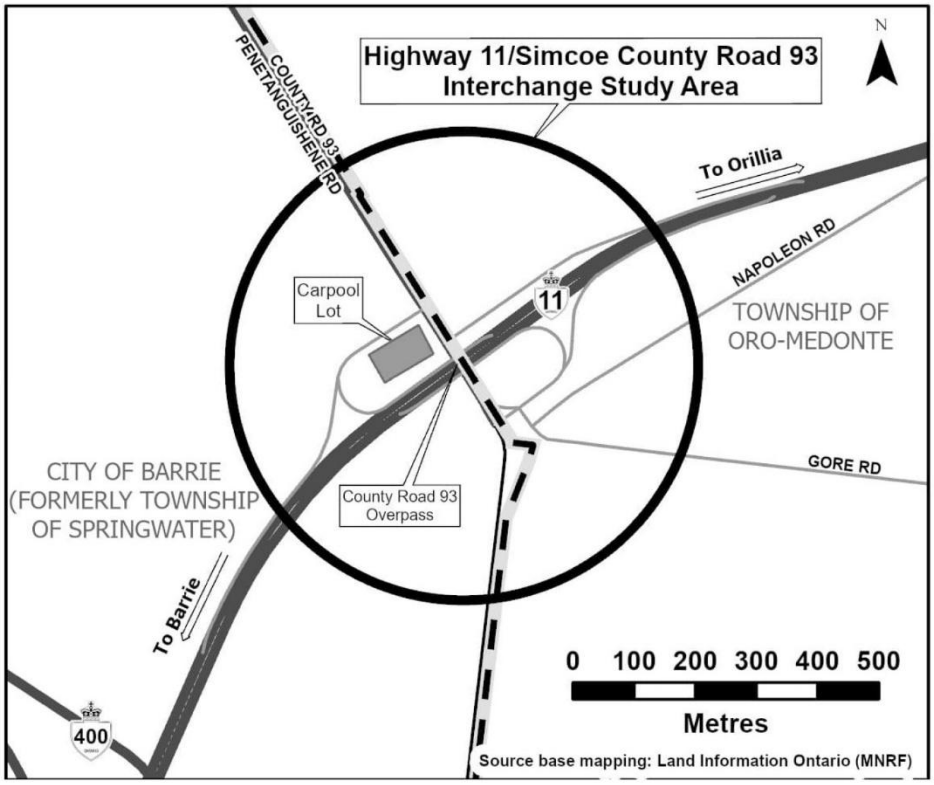
and

- **Director, Environmental Assessment Branch**
  Ministry of Environment, Conservation and Parks
  135 St. Clair Avenue West, 1st Floor
  Toronto, Ontario M4V 1P5
  Email: EABDirector@ontario.ca

Ontario Government Notice
Notice of Completion – Design and Construction Report
Highway 11 / Penetanguishene Road (formerly Simcoe County Road 93) Bridge Replacement and Interchange Reconstruction (G.W.P. 2306-16-00) Detail Design and Class Environmental Assessment Study

The Project

The Ontario Ministry of Transportation (MTO) has retained AECOM Canada ULC (AECOM) to undertake a Detail Design and Class Environmental Assessment (EA) Study for the replacement of the Penetanguishene Road (formerly Simcoe County Road 93) Overpass at Highway 11 and the associated interchange improvements. This project also includes the reconstruction of the interchange ramps as well as modifications to the existing carpool lot, shifting of the Highway 11 horizontal alignment, drainage improvements, new traffic signals at the west ramp terminal and roadside safety improvements. The project is located within the Township of Oro-Medonte, the County of Simcoe, and as a result of a recent municipal boundary adjustment, is now located within the City of Barrie (formerly Township of Springwater). The Recommended Plan for the above noted improvements was established through the Preliminary Design and EA Study (Group 'B') completed by the Ministry in 2022 and as documented in the *Highway 11 / Simcoe County Road 93 Overpass and Interchange Improvements Transportation Environmental Study Report* (Morrison Hershfield, Nov. 2022).



The Process

This study is following the approved planning process for a Group 'B' in accordance with the *MTO Class Environmental Assessment (Class EA) for Provincial Transportation Facilities* (amended 2000). **A Design and Construction Report (DCR)** has been prepared to document the Detail Design process for the Project including the Recommended Plan, consultation process, potential environmental effects and associated mitigation

Comments

The DCR is available on the project website at **Hwy11-CR93.ca** for a 30-day comment period starting September 28, 2026 and ending October 29, 2026. Comments can be submitted to the following members of the Project Team during the 30-day period:

Sherry Li, P. Eng., Project Manager,
Ministry of Transportation, Central Region
Project Delivery Office (Simcoe-York West)
4th Floor, 159 Sir William Hearst Avenue
Toronto, Ontario M3M 0B7
Telephone: 437-830-0716
Email: projectteam@Hwy11-CR93.ca

Jon Newman, P. Eng., Project Manager,
AECOM Canada Ltd.
105 Commerce Valley Drive West, 7th Floor
Markham, Ontario L3T 7W3
Telephone: 905-242-1765
Email: projectteam@Hwy11-CR93.ca

Ontario Government Notice
Notice of Completion – Design and Construction Report
Highway 11 / Penetanguishene Road (formerly Simcoe County Road 93) Bridge Replacement and Interchange Reconstruction (G.W.P. 2306-16-00) Detail Design and Class Environmental Assessment Study

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e., requiring a comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and Treaty Rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for a comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently review the request. The request should be sent in writing or by email to the following and copied to the Ministry of Transportation Project Manager listed above and to:

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

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

This notice issued September 28, 2026.

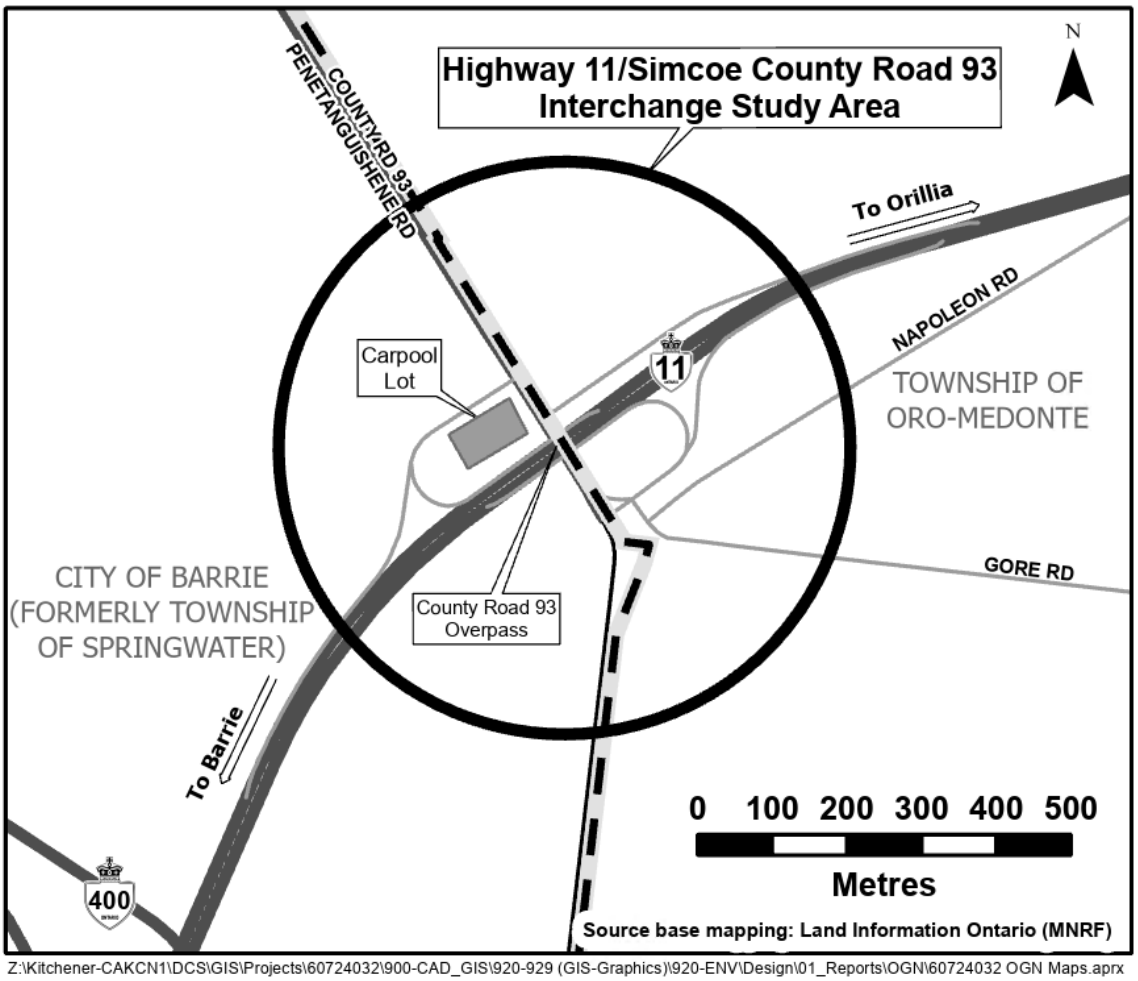
Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members listed above.

Executive Summary

AECOM Canada ULC (AECOM) was retained by the Ontario Ministry of Transportation (MTO) to undertake a Detail Design and Class Environmental Assessment (EA) Study for the replacement of the Simcoe County Road 93 Overpass at Highway 11 and the associated interchange improvements. This project also includes the reconstruction of the interchange ramps as well as modifications to the existing carpool lot, shifting of the Highway 11 horizontal alignment, drainage improvements, new traffic signals at the west ramp terminal and roadside safety improvements. The project is located within the Township of Oro-Medonte, the County of Simcoe, and as a result of a recent municipal boundary adjustment, is now located within the City of Barrie (formerly Township of Springwater).

The project Study Area is illustrated in **Figure ES-1**.

Figure ES-1: Project Study Area



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This study followed the approved planning process for a Group 'B' Project in accordance with the *MTO Class EA for Provincial Transportation Facilities (amended 2000)*. Construction is anticipated to start in the Spring of 2027.

The Recommended Plan for the above noted improvements was established through the Preliminary Design and EA Study (Group 'B') completed by the Ministry in 2022 and as documented in the *Highway 11/Simcoe County Road 93 Overpass and Interchange Improvements Transportation Environmental Study Report (Morrison Hershfield, November 2022).*

Consultation was an important part of this undertaking. Opportunity to provide input was made available to affected municipalities, the public, external agencies, key stakeholders, and Indigenous communities throughout the duration of the project. The consultation process included the distribution of a Notice of Study Commencement and the hosting of a project website for the duration of the study. The project team reviewed all comments received and provided responses where necessary. Additional discussions were scheduled, as required, to address specific stakeholder concerns.

Measures have been included to mitigate potential impacts and it is expected that this project will not result in significant adverse effects provided that the mitigation as identified is implemented during construction.

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Appendices

Appendix A **Consultation**

- Notice of Study Commencement & Sample Letters
- Notice of Completion - Design and Construction Report and Sample Letters

Appendix B **Contract Drawings**

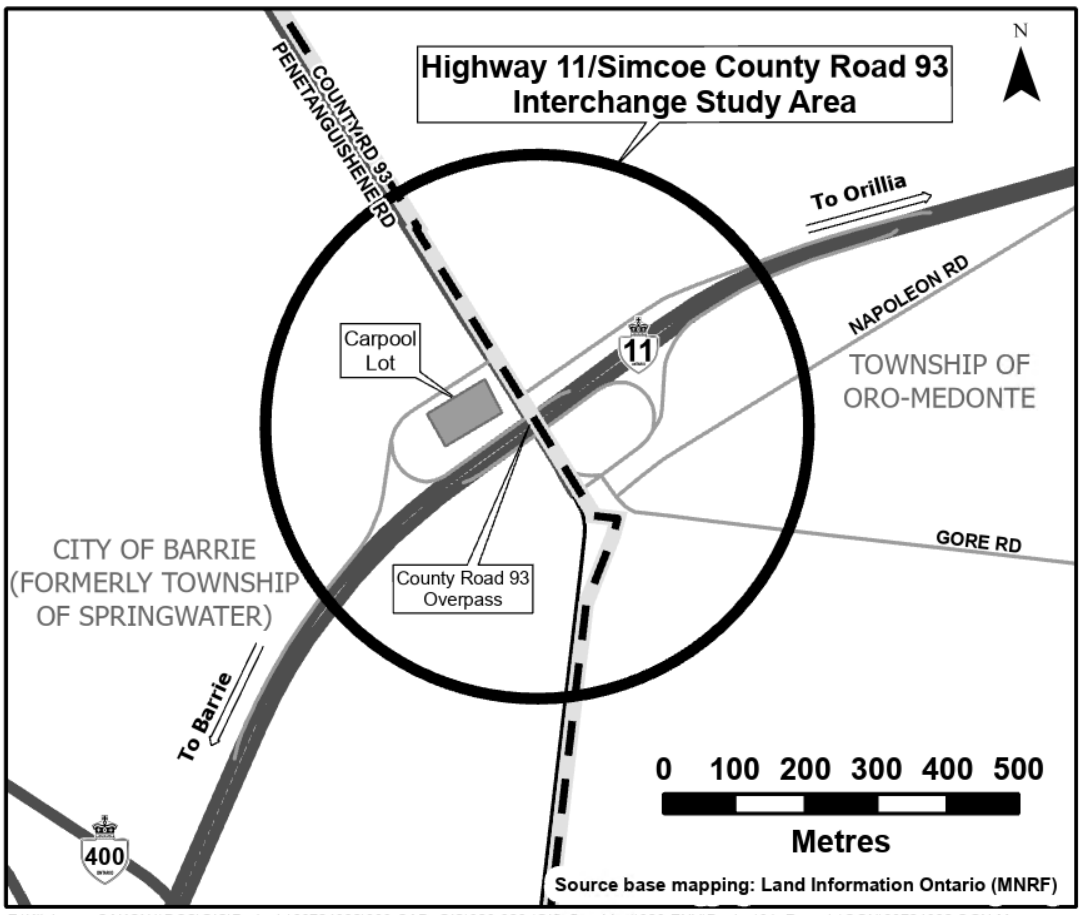
- New Construction, Removals, and Landscape Drawings

1. Project Overview

1.1 Study Overview and Location

The Ontario Ministry of Transportation (MTO) has retained AECOM Canada ULC (AECOM) to undertake a Detail Design and Class Environmental Assessment (EA) Study for the replacement of the Penetanguishene Road (formerly Simcoe County Road 93) Overpass at Highway 11 and the associated interchange improvements. This project also includes the reconstruction of the interchange ramps as well as modifications to the existing carpool lot, shifting of the Highway 11 horizontal alignment, drainage improvements, new traffic signals at the west ramp terminal and roadside safety improvements. As illustrated in **Figure 1**, the project is located within the Township of Oro-Medonte, the County of Simcoe, and as a result of a recent municipal boundary adjustment, is now located within the City of Barrie (formerly Township of Springwater).

Figure 1: Project Study Area



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The Recommended Plan for the above noted improvements was established through the Preliminary Design and EA Study (Group 'B') completed by the Ministry in 2022 and as documented in the *Highway 11/Simcoe County Road 93 Overpass and Interchange Improvements Transportation Environmental Study Report* (Morrison Hershfield, November 2022). This study followed the approved planning process for a Group 'B' Project in accordance with the *MTO Class EA for Provincial Transportation Facilities (amended 2000)*.

1.2 Objectives and Scope of Study

The objectives and scope of this study is to:

- Confirm existing conditions within the Study Area;
- Identify the improvements associated with the replacement of the Penetanguishene Road Overpass at Highway 11 and the associated interchange improvements.
- Prepare the Detail Design of the Recommended Plan including a construction staging strategy;
- Identify potential impacts and develop mitigation measures to minimize or avoid potential environmental impacts;
- Define commitments to future work by the Contractor during construction; and
- Conduct consultation throughout the study with potentially interested and affected stakeholders regarding the project related activities noted above.

2. The Environmental Assessment Process

2.1 Federal Impact Assessment Act

The Impact Assessment Act (2019) establishes a federal environmental assessment process focused on major projects that have a greater potential to have significant adverse effects on areas within federal jurisdiction. The types of activities to which the Act applies ("designated projects") are identified in the regulations.

The proposed improvements associated with this project are not listed as a "designated project" under the Act and the work proposed is not taking place on Federal lands. Approval from the Impact Assessment Agency of Canada (IAAC) is therefore not required for this undertaking.

2.2 Ontario Environmental Assessment Act

The Ontario Environmental Assessment Act (OEAA) provides for the protection, conservation, and wise management of the environment in Ontario. The purpose of the OEAA is to help protect and conserve Ontario's environment by requiring that projects subject to the Act follow a planning process leading to environmentally sound decision-making. The term "environment" is broadly defined and includes the built, natural, socio-economic and cultural environments. The planning and design of Provincial infrastructure projects are required to comply with the OEAA.

The Class Environmental Assessment (Class EA) process is a planning process approved under the OEAA that provides a streamlined process that must be followed for projects or activities within a defined "class". Projects and activities that are defined within a "class" are generally ones that are recurring, carried out routinely and have predictable environmental effects that can usually be mitigated. The Ministry of Transportation's Class Environmental Assessment for Provincial Transportation Facilities (amended 2000) is an approved planning document under the OEAA that establishes the appropriate Class EA process to be completed for groups of projects and activities. Project groupings include the following:

- Group "A" – Projects involving new facilities;
- Group "B" – Projects involving major improvements to existing provincial transportation facilities;
- Group "C" – Projects involving minor improvements to existing provincial transportation facilities; and

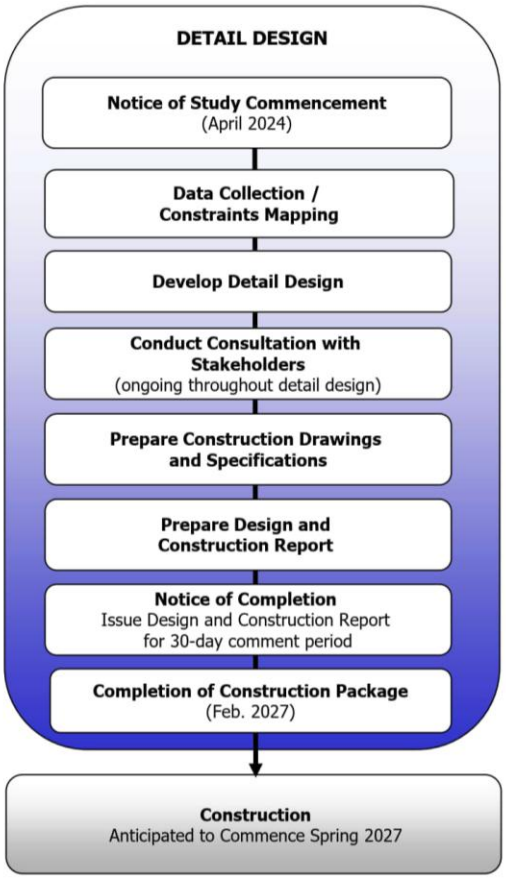
- Group “D” – Activities that involve operation, routine maintenance, administration, and miscellaneous work for provincial transportation facilities. These activities are approved under the Environmental Assessment Act subject to compliance with applicable environmental legislation other than the Environmental Assessment Act.

Projects that are identified in the Class EA can proceed to implementation without further approval under the Act provided that the approved Class EA planning process is followed.

Amendments to the Class EA were approved in December 2023 and February 2024, and the Class EA was renamed the *Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways (2024).* Since the subject Study was underway at the time of the amendments, it was determined that the Study would be completed following the Class EA (amended 2000) as opposed to transitioning to the new 2024 Class EA process.

The current undertaking is following the planning process for a Group ‘B’ project. The study process, as illustrated in **Figure 2**, provides opportunity for public and external agency input at key stages.

Figure 2: Study Process



2.3 Purpose of Design and Construction Report

A Design and Construction Report (DCR) is prepared near the end of the Detail Design process as per the MTO Class EA (2000) and focuses on final design and construction related items. It documents the detail design and Class EA process completed and includes the following:

- A description of the project and its purpose;
- An overview of the consultation undertaken;
- A description of the Recommended Plan and associated construction staging;
- Anticipated environmental effects and mitigation measures; and,
- Commitments to monitoring associated with the implementation of the project.

3. Consultation

3.1 Overview

Consultation is an integral part of the study process. At the project start a Communication and Consultation Plan was prepared to detail the planned engagement strategy and to demonstrate that the notification requirements of the MTO's Class EA process are being fulfilled. Throughout the course of the study, opportunities for input were provided at key project milestones including issue of the following two formal notices:

- Notice of Study Commencement
- Notice of Completion

A Project Contact List was developed at the project start and updated, as required, throughout the study. The purpose of this list was to ensure that potentially affected and interested stakeholders were kept informed regarding the project. The Project Contact List included Members of Parliament, regulatory agencies, municipalities, emergency service providers, transit authorities, interest groups, local businesses, and Indigenous communities as well as adjacent property owners, businesses and interested members of the public.

In developing the contact list consideration was given to the key contacts and comments received during the preliminary design study that preceded this project and as documented in the *Highway 11/Simcoe County Road 93 Overpass and Interchange Improvements Transportation Environmental Study Report (Morrison Hershfield, November 2022).*

3.2 Notice of Study Commencement

A Notice of Study Commencement with a copy of the Ontario Government Notice (OGN) was issued the week of April 29, 2024, via direct mail to all those on the Project Contact List including agencies, Indigenous communities, and local residents / businesses and supplemented with an email. The purpose was to announce the commencement of the Detail Design and Class EA process for the project. With the closure of Metroland Media and no local newspapers available the notice was posted on the corresponding online website http://www.simcoe.com as a Big Box Ad for a 2-week period.

3.3 Project Website

A project website, Hwy11-CR93.ca was created and made live on May 2, 2024, to disseminate information and engage with stakeholders regarding the work proposed. The website provided an overview of the study, project schedule, contact information for the Project Team, and included an electronic comment form to submit comments directly to the Project Team via email. The website was updated at key milestones throughout the duration of the project.

Please refer to **Appendix A** for copies of the notification materials.

Copies of the environmental technical reports prepared in support of this Detail Design assignment are available upon request.

3.4 Consultation with Indigenous Communities

The following Indigenous communities were engaged as part of the Project:

- Williams Treaty First Nations:
  - Alderville First Nation
  - Curve Lake First Nation
  - Hiawatha First Nation
  - Mississaugas of Scugog Island First Nation
  - Beausoleil First Nation
  - Chippewas of Georgina Island First Nation
  - Chippewas of Rama (Mnjikaning) First Nation
- Council of Wendat Nation
- Kawartha Nishnawbe First Nation

Of the above noted communities contacted, comments were received from Alderville First Nation, Council of Wendat Nation, Hiawatha First Nation, and Chippewas of Georgina Island First Nation.

Indigenous Consultation was also undertaken as part of the Stage 1-4 archaeological assessment completed during the project. Notification of the work and fieldwork strategy was presented to Indigenous community representatives prior to the commencement of the fieldwork. Wendat First Nation and Kawartha Nishnawbe First Nation participated as field monitors for this project.

3.5 Consultation with External Agencies and Interest Groups

As part of this Detail Design and Class EA study, the Project Team consulted with appropriate federal and provincial ministries and agencies, municipalities, emergency services providers, interest groups, and school boards.

3.5.1 Municipalities

Throughout the project, key staff at the affected municipalities were forwarded notifications regarding the project. In response to the Notice of Commencement the following municipal comments were received:

- **Township of Oro-Medonte:** The Township expressed interested in participating and provided a primary contact for the project as well as an updated contact for the Municipal Clerk.
- **County of Simcoe**: The County advised of their interest in the project noting their earlier involvement during the preceding Preliminary Design phase including comments on the preferred options for the interchange. The County noted that a draft cost sharing agreement exists with the MTO and that the County is awaiting execution as regards providing a larger span for the structure over Penetanguishene Road. The County also expressed their desire to continue to be involved as the project proceeds.
- **City of Barrie:** At the project start, the Study Area was initially located within the Township of Oro-Medonte, the Township of Springwater, and the upper tier municipality of the County of Simcoe. However, as the project progressed a municipal boundary shift was completed and in effect as of January 1, 2026 which resulted in the City of Barrie replacing the Township of Springwater on the west side of Penetanguishene Road. The boundary shift also resulted in a change to the reference of the municipal corridor (i.e., County Road 93) within the Study Area to Penetanguishene Road.

In addition to the above, the Project Team hosted two virtual Municipal Advisory Committee (MAC) Meetings as well as meetings with key stakeholders and other informal discussions as follows:

Municipal Advisory Committee Meeting #1

The first meeting occurred early in the detail design process on May 15, 2024, and included key staff from the Township of Oro-Medonte, Township of Springwater, City of

Barrie, and the County of Simcoe. The purpose was to introduce the project and to discuss a number of design items with the affected municipalities in the early stages of the project. An overview of the project was provided that included a discussion of the Study Area, study background, recommended improvements, traffic staging, planned closures/detours, project schedule, utility and property impacts as well as the planned public engagement strategy for the project. Notable items of discussion included modifications to Penetanguishene Road to accommodate a future widening of the highway to four lanes by the County of Simcoe as well as potential impacts to the Holy Cross-St. Nektarios Greek Orthodox Church retaining wall and entrance. Municipal servicing was also discussed, with the municipalities advising that there are no immediate plans for a servicing crossing (i.e. watermain) under Highway 11 at the subject location.

Municipal Advisory Committee Meeting #2

The Project Team hosted a second MAC Meeting on June 17, 2025 with representatives from the County of Simcoe, Township of Oro-Medonte, Township of Springwater, and the City of Barrie in attendance. Key topics of discussion related to the work proposed; maintaining access for local residents and businesses; anticipated staging and detours; and a shift in construction start from 2026 to 2027.

City of Barrie Meeting

The Project Team met with the City of Barrie on January 12, 2026. The City confirmed the recent municipal boundary shift, in effect as of January 1, 2026, noting that Penetanguishene Road within the project limits is now fully within the City of Barrie and no longer within the Township of Springwater. The City highlighted that County Road 93 is to now be known as Penetanguishene Road. It was clarified that the Township of Oro-Medonte and the County of Simcoe will continue to remain as key stakeholders.

Key topics discussed during the meeting included the horizontal and vertical alignment; a potential speed reduction on Penetanguishene Road to 50 kilometres per hour by the City of Barrie; the City’s interest in implementing a multi-use path on Penetanguishene Road in the future; and a potential Cost-Share Agreement.

Following the meeting, the City informed the Project Team of their intent to install municipal water and wastewater servicing infrastructure within Penetanguishene Road to facilitate development west of the study area.

Stakeholder Meeting (May 22, 2025)

The Project Team hosted a Stakeholder Meeting on May 22, 2025, with representatives from two key local companies with facilities located within the Study Area that included Napoleon Home Comfort Barrie and Dufferin Construction. The Project Team provided a

project overview via a short slide presentation. Key topics discussed related to potential access concerns during construction, impacts at the Penetanguishene Road / Gore Road Intersection, staging and detours, truck turning movements, and the Project Schedule.

3.5.2 External Agencies and Interest Groups

The following government ministries, agencies and interest groups were consulted during the study:

- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Agriculture, Food and Agribusiness
- Ministry of Citizenship and Multiculturalism (MCM)
- Ministry of Natural Resources (MNR)
- Metrolinx
- Ontario Trucking Association
- County of Simcoe LINX Transit
- Barrie Cycling Club
- Sno Voyageur Club
- Orillia District Snowmobile Club
- Ontario Federation Snowmobile Clubs
- Simcoe County Federation of Agriculture
- Oro Agricultural Society
- Nottawasaga Valley Conservation Authority (NVCA)
- Barrie Farmer's Market
- Burl's Creek Event Grounds
- Springwater-Elmvale Farmer's Market
- Ontario Federation of Agriculture
- Simcoe County Christian Farmers Association
- Oro-Medonte Chamber of Commerce
- Township of Springwater Chamber of Commerce
- Georgian College-Barrie Campus

Key agency comments received during the study and the associated response provided by the Project Team are summarized below:

- **Ministry of Natural Resources (MNR):** The MNR acknowledged receipt of the notice and advised that while they have not competed a screening of natural heritage or other resource values for the project, they were providing

information to guide the Project Team in identifying and assessing natural features and resources as required by applicable policies and legislation. The following standard areas of interest were referenced: natural heritage; natural hazards, Fish and Wildlife Conservation Act; Public Lands Act & Lakes and Rivers Improvement Act; and Oil, Gas and Salt Resources. The information was reviewed and the various resources and applicable information were incorporated into the project as required.

- **Ministry of the Environment, Conservation and Parks (MECP):** The MECP provided a letter outlining standard Areas of Interest to be addressed. These included: Planning and Policy; Source Water Protection; climate change; air quality, dust and noise; ecosystem protection and restoration; species at risk; surface water; groundwater; excess materials management; contaminated soils; servicing, utilities, and facilities; mitigation and monitoring; consultation; and the Class EA process. The MECP also provided direction for issue of the Notice of Completion including the email address to submit the final notification, the 30-day comment period and the steps associated with an Environmental Assessment Act Section 16 Order. The information provided by the MECP was reviewed and the areas of interest were addressed, as appropriate, in EA documentation.
- **Ministry of Citizenship and Multiculturalism (MCM):** The MCM identified their interest in the project as it relates to its mandate of conserving Ontario's cultural heritage, which includes archaeological resources (including land and marine), built heritage resources (including bridges and monuments), and cultural heritage landscapes. The Ministry also expressed their expectations under the Class EA including identification of existing environmental conditions and sensitivities, potential environmental impacts and associated measures to mitigate potential negative impacts. The agency referenced the preceding Preliminary Design and EA Study (Group 'B') completed by the Ministry in 2022 and as documented in the *Highway 11 / Simcoe County Road Overpass and Interchange Improvements Transportation Environmental Study Report* (Morrison Hershfield, Nov. 2022). The agency provided project related comments noting that while some cultural heritage resources may have already been formally identified, others may be identified through assessment. The MCM referenced the St. 1 Archaeological Assessment completed in support of the 2022 TESR and acknowledged that a St. 2 AA had been initiated for the current project. They also identified their expectations as regards documentation of heritage resources in the DCR to be prepared for the project.

- **Elected Officials:** The following elected officials were consulted during the study:
  - Member of Parliament – Doug Shipley, Barrie-Springwater-Oro-Medonte
  - Member of Provincial Parliament – Doug Downey, Barrie-Springwater-Oro-Medonte

  No comments were received during the process.

3.5.3 Emergency Services

The following emergency service providers were consulted during the study:

- County of Simcoe Paramedic Services
- County of Simcoe Emergency Planning
- Ontario Provincial Police – Huronia West Detachment
- Ontario Provincial Police – Barrie Detachment
- Ontario Provincial Police – Orillia Detachment
- Township of Springwater Fire Department
- Township of Oro-Medonte Fire Department
- Royal Victoria Regional Health Centre
- Orillia Soldiers Memorial Hospital

In response to the Notice of Commencement three comments were received. The Township of Oro-Medonte Fire Department and the Ontario Provincial Police provided updated contact information for the primary contact moving forward. The Royal Victoria Regional Health Centre advised that while they had no specific comments initially, they would like to be kept informed as the detailed design and schedule develop noting their interest in all activity that may impact access to the hospital and the movement of emergency vehicles. Updates were made to the project Contact List to reflect comments received.

3.5.4 School Boards and Transportation Service Providers

The following school boards and transportation service providers were consulted during the study:

- Simcoe Muskoka Catholic District School Board
- Conseil scolaire de district catholique Centre-Sud
- Conseil scolaire Viamonde

- Simcoe County Student Transportation Consortium
- Ontario Trucking Association
- County of Simcoe LINX Transit

No correspondence was received from these groups during the process.

3.5.5 Public

Project notifications were issued by mail to area residents and businesses. No public comments were submitted regarding the project.

4. Existing Conditions

All significant features within the Study Area were identified to determine areas of environmental concern / constraint, establish the potential for impact resulting from the works proposed and to identify areas where mitigation may be required to minimize impacts. The data collected was grouped into the following categories:

- Natural Environment;
- Socio-economic Environment;
- Cultural Environment; and
- Transportation Conditions.

This inventory was established through the collection of information from primary and secondary sources, field visits, drawing review, consultation with agencies and the public as well as through completion of the following investigations and supporting documentation:

- Terrestrial Ecosystems Existing Conditions and Impact Assessment Report
- Fish and Fish Habitat Existing Conditions and Impact Summary (via email)
- Phase I Environment Site Assessment
- Phase II Environmental Site Assessment
- Due Diligence Sampling Memo
- Designated Substance Survey 548 Penetanguishene Road
- Designated Substance Survey Penetanguishene Road Overpass at Highway 11
- Hydrogeological Investigation Report
- Noise Report
- Assessment of Snow-Drift Potential Baseline Report
- Cultural Heritage Evaluation Report
- Stage 1-3 Archaeological Assessment
- Stage 4 Archaeological Assessment
- Landscaping Drawings

4.1 Natural Environment

A *Terrestrial Ecosystems Existing Conditions and Impact Assessment Report* (AECOM, July 2026) was prepared for the project in accordance with the *Environmental Reference for Highway Design* (ERD; MTO, 2013) and the *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance* (MTO, 2014). A background review was completed, prior to field investigations, to obtain information on known natural heritage features and species records including Species at Risk (SAR) and Species of Conservation Concern (SOCC) within the Study Area. Recent guidance from the Ministry of Environment and Conservation and Parks (MECP) and Ministry of Natural Resources (MNR) recommends conducting independent background information screenings rather than requesting information from the agencies. As such, information requests were not submitted to these agencies.

Background information screenings were completed in accordance with guidance as provided on the Natural Heritage Information webpage (Government of Ontario, 2024) and the *Client's Guide to Preliminary Screening for Species at Risk* (MECP, 2019a).

Existing field data collected within the Study Area was reviewed and used to gather information about the natural heritage features within the project limits. As part of the 2022 TESR, field reconnaissance, fish and fish habitat surveys and Ecological Land Classification (ELC) were completed on November 15, 2018, and May 21, 2019, by Morrison Hershfield (MH). As part of the current undertaking AECOM completed supplementary field investigations in accordance with the ERD (MTO, 2013) to confirm and/or update the terrestrial existing conditions data as identified by MH through the preceding 2022 TESR.

As part of Detail Design, structure surveys/nest sweeps were undertaken at the overpass on May 21, 2024 with structure surveys (interior/exterior) completed for vacant buildings on June 27 and 28, 2024. Field investigations including an Ecological Land Classification and detailed plant inventory were completed on June 27, 2024 and on June 2, 2025. Bobolink and Eastern Meadowlark Grassland surveys were completed at 540 Penetanguishene Road on May 27, June 10, and June 24, 2025. All field work was completed in accordance with the ERD (MTO, 2013). Incidental wildlife observations were also recorded during the field surveys in the event of visual or auditory confirmation or through detection of other evidence of wildlife presence (e.g., tracks, scat, signs of foraging, etc.).

The following sub-sections detail the existing natural environmental features present within the Study Area.

4.1.1 Physiography, Topography and Drainage

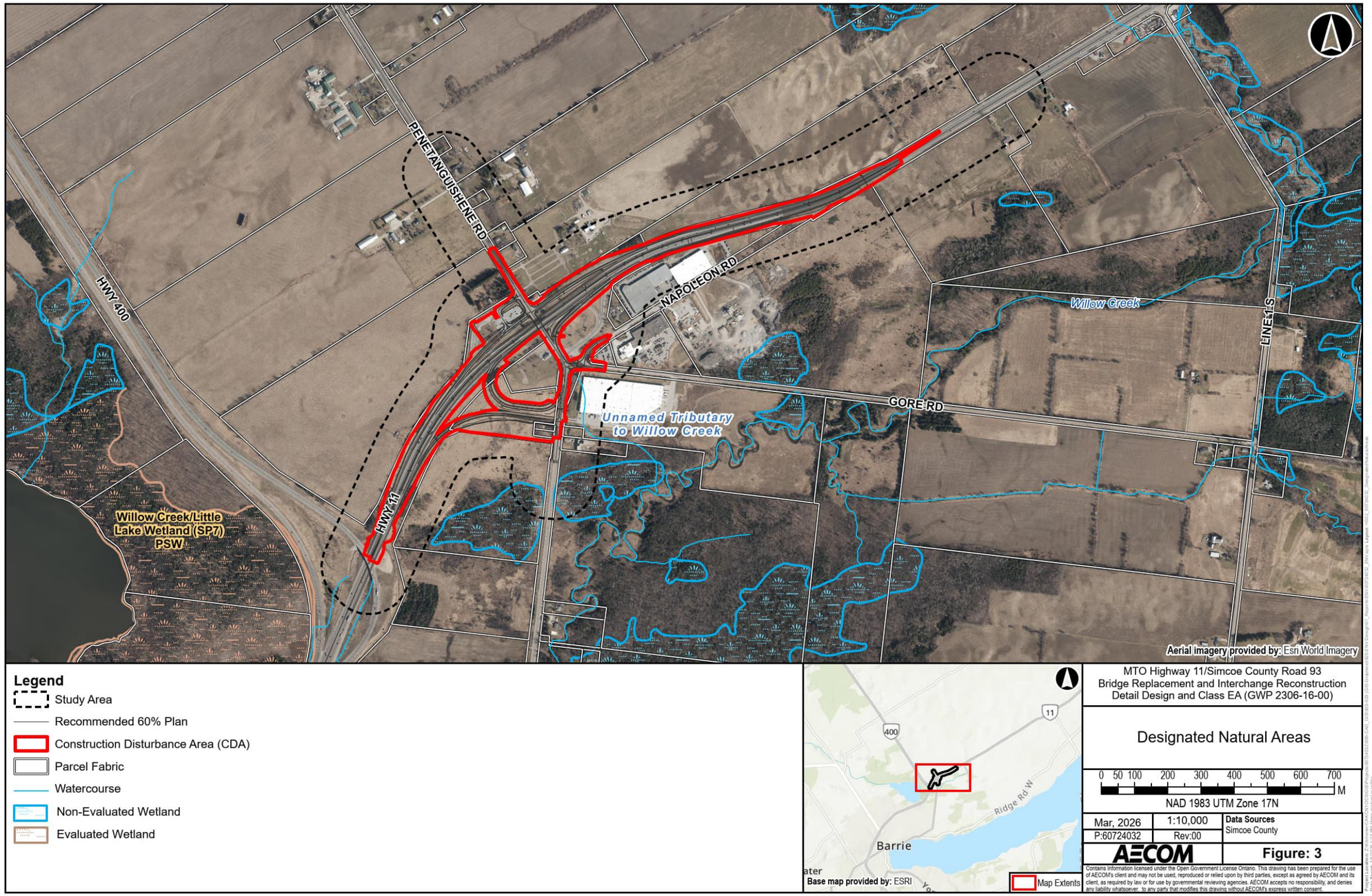
As detailed in the Hydrogeological Investigation Report completed by AECOM for this project, the project Study Area is located entirely within the Simcoe Uplands physiographic region, as described by Chapman and Putnam (1984). The majority of the physiographic landforms within the Study Area are situated in drumlinized Till Plains, with Sand Plains identified in the small portion of the Study Area towards the southeast.

Ground surface topography is relatively flat, with a subtle decline in a south to southeasterly direction. Ground surface elevations within the Study Area range between approximately 236 and 269 metres above sea level based on a review of available aerial photography. Drainage across the Study Area was noted to follow the surface topography, dipping southeast along a small tributary flowing towards Willow Creek.

4.1.2 Designated Natural Areas

Natural features and areas identified for protection in the Provincial Policy Statement, 2024 (PPS) and other applicable legislation are collectively referred to as Designated Natural Areas (e.g., significant wetlands, Significant Wildlife Habitat, etc.). Designated Natural Areas may also be identified by the associated planning authority (e.g., province, municipality). It was confirmed that there are no Provincially Significant Wetlands (PSWs) within the boundaries of the Study Area. However, there are two PSWs in proximity that include the Willow Creek/Little Lake PSW complex located approximately 150 metres from the western limits of the Study Area and the Dalston PSW complex found approximately 170 metres from the eastern limits of the project. Unevaluated wetlands that may be hydraulically connected to the Willow Creek/Little Lake PSW complex also occur in the southwest portion of the Study Area. Designated Natural Areas in proximity to the Study Area are illustrated in **Figure 3**.

Figure 3: Designated Natural Areas



4.1.3 Vegetation Communities and Plants

Vegetation communities within the Study Area were either confirmed based on the Ecological Land Classification for Southern Ontario (Lee et al., 2008), as identified previously in support of the 2022 TESR, or reclassified using the Southern Ontario Ecological Land Classification System (Lee et al., 1998).

The 2022 TESR delineated 14 vegetation communities during their 2018/2019 field investigations. During the current Detail Design assessment, it was determined that agricultural lands largely represent the Study Area with several Commercial and Institutional (CVC), Residential (CVR), Cultural Green Space – Saint James Cemetery (CGL) and Transportation and Utilities – Highway (CVI) communities identified in all quadrants adjacent to the interchange. Vegetation communities within the MTO ROW are generally limited to remnant thickets, hedgerows and meadows surrounded by agriculture. Most of the plant species recorded within the Study Area had a low to moderate sensitivity to disturbance.

No rare vegetation communities or plant species were observed; however, the Butternut tree was noted as having potential to occur within the Study Area. One additional SAR plant record, Black Ash, was identified in the vicinity of the Study Area through a review of secondary sources, but the species was not observed during the field investigations.

Vegetation communities identified within the Study Area are summarized as follows and mapped on **Figure 4**:

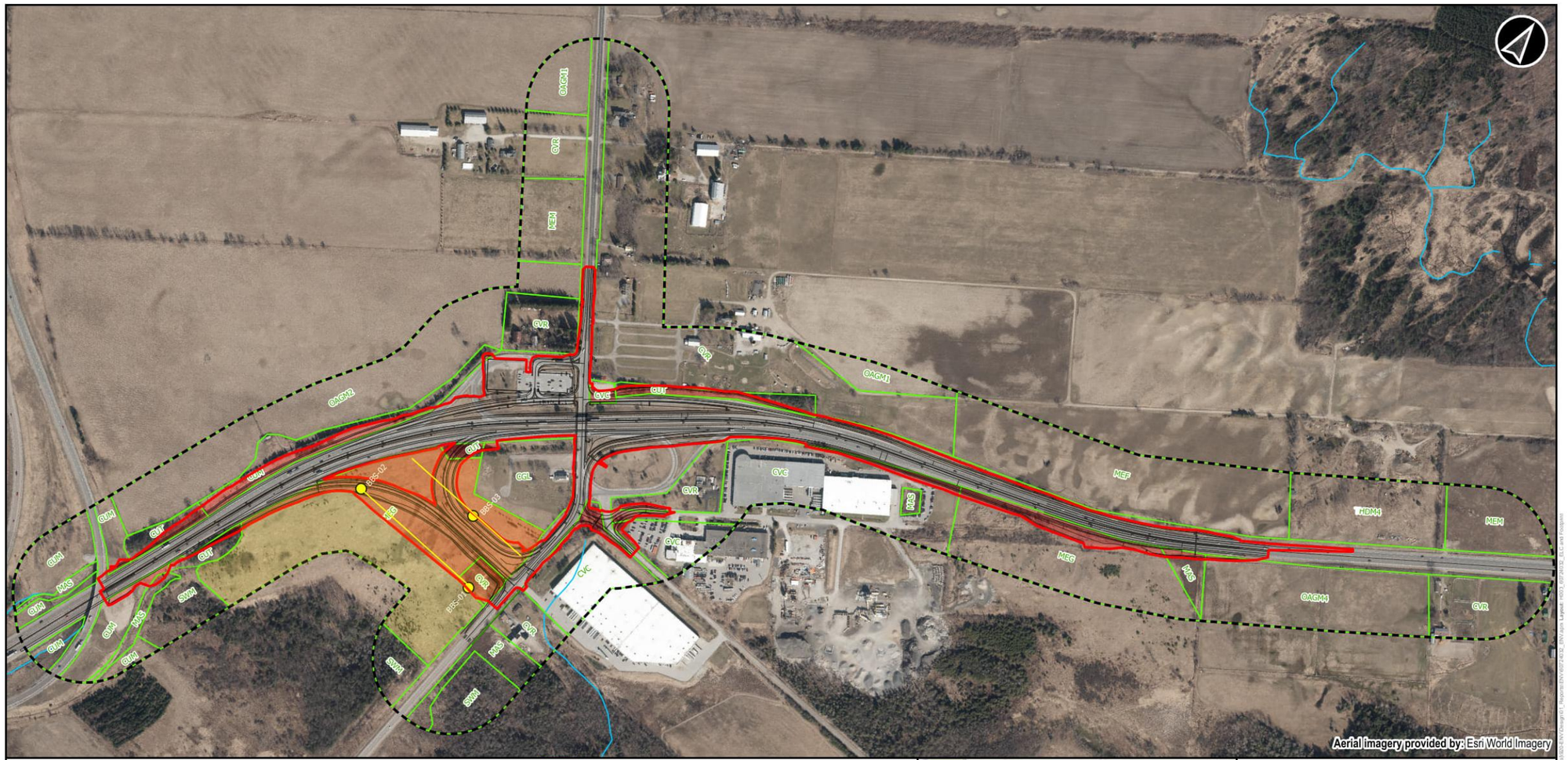
- **Mixed Meadow (MEM)**
  This community type consists of an open, herbaceous meadow dominated by a mixture of graminoids and forbs, with limited shrub and tree cover (generally <25%). Vegetation is typically composed of a combination of native and non-native species, often establishing on previously disturbed or cleared lands such as abandoned fields, utility corridors, or rights-of-way.
- **Forb Meadow (MEF)**
  This community type is an open meadow ecosystem dominated by herbaceous broad-leaved plants (forbs), with graminoid species present but not dominant. Tree and shrub cover is sparse to absent (generally <25%), and the structure is characterized by a dense and often diverse herbaceous layer.
- **Graminoid Meadow (MEG)**
  This community was typically dominated by grass species, have tree cover less than or equal to 25%, and shrub cover less than or equal to 25%. A total of 25 plant species were recorded, of which 10 (40%) were native and 14 (56%) were non-native and/or invasive. The remaining species (4%) was a Goldenrod

species only identified to genus due to a lack of identifiable characteristics present at the time of survey. This community was subject to more detailed investigations as the proposed Construction Disturbance Area (CDA) is located largely within it. There was minimal canopy and sub-canopy cover within this community, consisting of a small population of Trembling Aspen, Eastern Red Cedar, American Elm, and Scots Pine. The understory/shrub layer of this community was equally minimal, consisting of some Red Raspberry and Staghorn Sumac. The ground layer had the most coverage of all the vegetation layers within the community, and was dominated by Kentucky Bluegrass, Smooth Brome, Perennial Ryegrass, and Orchard Grass.

- **Cultural Meadow (CUM)**
  This vegetation type is comprised of a combination of species which prefer disturbed sites and are relatively resilient. Species observed included Canada Goldenrod, Tall Goldenrod, New England Aster, Wild Carrot, Knapweed, Bull Thistle, Smooth Brome, Reed Canary Grass and Kentucky Bluegrass.
- **Cultural Thicket (CUT)**
  This vegetation type is comprised of a dense thicket of shrub and early successional tree species that commonly establish on recently disturbed or cutover sites and are tolerant of open, high-light conditions. Species observed included Scots Pine, Staghorn Sumac, Tartarian Honeysuckle, Riverbank Grape. This community was located on both the north and south side of Highway 11. The CUT communities observed within the Study Area were often observed to contain portions of Mature Scots Pines along in linear formation presumably planted for wind protection.
- **Dry-Fresh Deciduous Regeneration Thicket (THDM4)**
  This community type consisted of a dense, early successional thicket dominated by deciduous shrubs and regenerating deciduous trees located on the north side of Highway 11. Shrub cover is typically greater than 25%, while the tree canopy is generally sparse or composed of young saplings of dogwoods.
- **Annual Row Crop (OAGM1)**
  This code represents land used for cultivating various crops, including grains, vegetables. Managed through practices such as crop rotation. This community was common within the Study Area.
- **Perennial Cover Crop (OAGM2)**
  This code represent land used for cultivating various crops, such as hay productions. Managed through practices such as mowing for pastures and hay production. This community was common within the Study Area as many hay fields were observed on Penetanguishene Road.

- **Open Pasture (OAGM4)**
  This code represents land used for cultivating various crops, such as hay productions and or use by livestock. Managed through practices such as mowing for pastures and hay production. This community was common within the Study Area. Pastures for horses were observed on the south side of Highway 11.
- **Residential (CVR)**
  This code describes land that has been developed for residential housing features.
- **Commercial (CVC)**
  This code describes land that has been developed for commercial buildings and features.
- **Transportation and Utilities (CVI)**
  This code describes land that has been developed for institutional buildings and features.
- **Greenland (CGL)**
  This code describes land that has been developed for green and open space features.
- **Mixed Swamp (SWM)**
  This community was identified within the southwest portion of the Study Area within the large forest tract that expands south. This vegetation community is a mineral or organic wetland community characterized by a mixed canopy of deciduous and coniferous tree species such as Red Maple and Eastern White Cedar with neither group clearly dominant. Tree cover typically exceeded 25%, and the community is defined by seasonally inundated or permanently saturated soils. This community was identified within the southern portion of the Study Area with the large forest tract.
- **Shallow Marsh (MAS)**
  This community was observed as a depression / ditch line that borders Highway 11 and the SWM vegetation community along the southwest boundary of the CDA. Small inclusions of this community were also noted along the drainage feature that flows from the highway interchange to Willow Creek and surrounding the two small stormwater ponds adjacent to the commercial building on Gore Road. The vegetation in this community is comprised a mix of grasses, forbs, and shrubs. The shrub layer accounted for less than 5% of the total cover, with species such as Staghorn Sumac, Common Elderberry and Tartarian Honeysuckle identified. Prominent grass and forb species included Reed Canary Grass, Narrow-leaved Cattail, Broad-leaved Cattail, Watercress, Wool-grass, Common Rush and Path Rush.

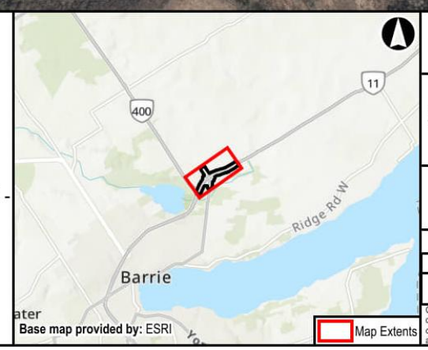
Figure 4: Survey Locations and SAR/SOCC Habitat



Legend

- Study Area
- Construction Disturbance Area (CDA)
- Proposed Design
- Breeding Bird Survey
- Grassland Transects
- Eastern Meadowlark (Confirmed Nesting) & SWH Candidate SOCC (Monarch)
- Vegetation Removal Area
- Watercourse

- ELC Communities
- CUM - Cultural Meadow
- SWM - Mixed Swamp
- MAS - Swallow Marsh
- MEG - Graminoid Meadow
- MEM - Mixed Meadow
- MEF- Forb Meadow
- THDM4 - Dry-Fresh Deciduous Regeneration Thicket OAGM1 - Annual Row Crop
- OAGM2 - Perennial Cover Crop
- OAGM4 - Open Pasture
- CVR - Residential
- CVC - Commercial
- CGL - Green Land



MTO Highway 11/Simcoe County Road 93
Bridge Replacement and Interchange Reconstruction
Detail Design and Class EA (GWP 2306-16-00)

Survey Locations & SAR/SOCC Habitat

0 50 100 200 300 400 M
NAD 1983 UTM Zone 17N

Mar, 2026	1:6,500	**Data Sources** Simcoe County
P:60724032	Rev:00	
AECOM		**Figure: 4**

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In summary, the updated review completed by AECOM during Detail Design determined that all vegetation communities identified within the Study Area are common throughout Ecoregion 6E and none are considered significant. No SAR, SOCC or locally rare plants were observed.

Invasive and Noxious Plant Species

The presence of regulated invasive species, particularly in proximity to roadways and areas subject to disturbance, highlights the potential for further spread if appropriate mitigation measures are not implemented. Under the Invasive Species Act, 2015, project proponents are legally required to prevent the spread of listed invasive species and may be obligated to carry out removal or control activities as part of their duty of care.

Invasive and noxious weeds species were predominantly observed within cultural vegetation communities such as cultural meadows, cultural thickets, Mixed Meadow, Forb Meadow and Graminoid Meadow. Canada thistle, Field Sow-thistle and Coltsfoot were the only noxious plant species, as defined by O.Reg. 248/14 of Ontario's Weed Control Act, identified within the Study Area. Invasive Phragmites, a species regulated under the Invasive Species Act, was observed in various wetlands and roadside ditches throughout the Study Area. No plant species designated as hazardous were observed.

4.1.4 Wildlife and Wildlife Habitat (including Species at Risk)

The TESR (2022) reported a total of 18 SAR and 11 SOCC with potential to occur within the Study Area with a total of 14 bird species observed during the 2018/2019 field investigations. All species listed were considered common to the region, and no SAR or SOCC species were noted during the preceding field observations. Additionally, no herpetofauna or mammalian species were observed during the field investigations.

The current Detail Design review determined that there was limited potential to support wildlife habitat within the MTO ROW due to habitat fragmentation and high noise and traffic levels from the highway. It was also determined that the infrastructure associated with existing Highway 11 Bridge at Penetanguishene Road acts as a barrier to animal movement and that generally, it is mostly disturbance tolerant species that are expected to occur within the MTO ROW. Significant species or wildlife habitat would likely be present in the greater landscape where more naturalized communities occur. Vegetation communities identified within the Study Area are likely to support habitat for a variety of wildlife species. Birds are of particular interest due to the tendency of several species, including those protected under the MBCA and SARA, to nest on human-made structures. Additional details are provided in the subsections that follow.

Breeding Birds

A total of 27 bird species were observed during breeding bird surveys or incidentally during other field investigations completed by AECOM and most were considered common throughout Southern Ontario. Species observed included the Brown-headed Cowbird, Song Sparrow, and one SAR, the Eastern Meadowlark. No bird nests were observed during field investigations in either 2024 or 2025. In addition, no birds listed on Schedule 1 of the Migratory Birds Regulation, 2022 were observed during field investigations.

Structure Surveys

SAR bird and bat structure assessments were completed to determine the likelihood of occupancy. An assessment of habitat for SAR bats, Barn Swallow and Chimney Swift was completed for the exterior and interior of three vacant anthropogenic structures present within the study area. One structure was noted to provide suitable nesting surfaces for Barn Swallow; however, no historical evidence of nesting was observed. It was also determined that the buildings exhibited minimal to no evidence of bat use. In addition, the Highway 11 Bridge at Penetanguishene Road and the vegetated area within the ROW surrounding the structure was inspected for the presence of bird nests. No active nests or historical evidence of nesting was observed during inspection of the overpass and suitable nesting surfaces (i.e., flat ledges, protruding objects) were limited. However, a nesting Chipping Sparrow was observed in the northeast quadrant of the overpass structure. Chipping Sparrow are not listed as a SAR or SOCC species, however it is a migratory bird protected under the MBCA.

Vegetated areas and man-made structures within the CDA represent potential habitat for birds protected under the MBCA, including Barn Swallow (a migratory bird species designated as Threatened under Schedule 1 of SARA). Structure surveys did not identify suitable chimneys for nesting Chimney Swift nor any other evidence of nesting birds on or within any of the anthropogenic structures within the Study Area.

Incidental Wildlife Observations

Incidental wildlife observations were documented on June 27 and June 28, 2024. Small mammals observed in grassy and shrubby areas included the Eastern Chipmunk and Meadow Vole. Avian species observed included American Robin, Red-winged Blackbird, and Song Sparrow. Two SAR birds were observed during incidental investigations that included the Chimney Swift and Barn Swallow. Both migratory birds are designated as Threatened under Schedule 1 of SARA. Both observations were incidental, and no evidence of active nesting or denning sites were identified. No incidental observations of wildlife were documented during surveys completed on May 27, June 6, or June 24, 2025.

Terrestrial Species at Risk

SAR are defined as species that are provincially designated as Endangered or Threatened on the PSO List (O. Reg. 60/26) of the Species Conservation Act as well as migratory birds that are federally designated as Endangered or Threatened under Schedule 1 of the SARA. These species, as well as their habitat, are afforded protection under the SCA and/or under Schedule 1 of SARA.

The 2022 TESR, noted that the Study Area provided potential habitat for nine SAR that included the Bank Swallow, Barn Swallow, Bobolink, Butternut, Eastern Meadowlark, Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat. To determine a probability of occurrence based on the updated existing conditions, AECOM completed a revised SAR habitat assessment as part of the current undertaking.

A total of 20 SAR were identified within the vicinity of the Study Area based on a review of the background information sources. Of the SAR identified, 13 SAR had a high or medium potential to occur based on the candidate habitat present within the Study Area that included: Eastern Meadowlark, Bobolink, Barn Swallow, Red-headed Woodpecker, SAR bats (six total), Black Ash, Butternut and Blanding's Turtle.

Species targeted surveys confirmed that the MEG vegetation community within the Study Area provides confirmed nesting habitat for the Eastern Meadowlark, a migratory bird designated as Threatened under Schedule 1 of SARA.

Migratory and resident tree roosting bat SAR include Eastern Red Bat, Hoary Bat, Silver-haired Bat, Little Brown Myotis, Northern Myotis and Tri-colored Bat. Eastern Red Bat, Hoary Bat, Silver-haired Bat are migratory bats that are provincially designated as Endangered under the under the PSO List of the SCA. Little Brown Myotis, Northern Myotis and Tri-colored Bat are resident bats provincially designated as Endangered under the PSO List of the SCA and federally under Schedule 1 of SARA.

The SAR assessment determined that the Study Area does not provide suitable hibernation features for resident SAR bats. Trees in the CUT communities and hedgerows throughout the CDA do not provide the preferred tree size (DBH > 20 centimetres), species composition or density to support the preferred maternity roosting conditions. It was also found that many of the trees were intentionally planted for use as a snow drift/wind barrier for the existing highway and have been subject to ongoing maintenance and disturbance. The SAR assessment concluded that based on the low density of preferred candidate maternity roost trees (i.e., small tree size), species composition, fragmented and regularly disturbed treed areas within the CDA, the Study Area provides low suitability habitat for bat SAR, particularly for maternity roosting functions. While the area may be used for foraging or movement, it does not represent a limiting habitat resource within the broader landscape, where more suitable forested habitats are available.

Significant Wildlife Habitat

The 2022 TESR identified three Special Concern species as having potential habitat within the Study Area: Grasshopper Sparrow, Monarch Butterfly, and Snapping Turtle. An additional 10 Species of Conservation Concern (SOCC) were identified in the vicinity of the Study Area through the review of the background information sources. The 2022 TESR identified the following SWH:

- Rare Vegetation Communities and Specialized Habitat for Wildlife
- Habitat for Species of Conservation Concern
- Significant Animal Movement Corridors

The 2022 TESR identified candidate amphibian breeding (woodland & wetland) SWH based on the presence of SWM and MAS communities, which are candidate ecosites associated with this SWH category, as well as documented occurrences of an indicator species (Western Chorus Frog) within the PSW complexes adjacent to the Study Area. However, field verification and ecosite delineation completed for the current assessment determined that the extent of MAS and SWM communities within the Study Area is smaller than previously mapped in the 2022 TESR and that the refinement of the CDA has reduced the footprint within these communities and the potential for impact. The current assessment determined that vegetation communities within the Study Area have been fragmented by existing road infrastructure and as such, amphibian movement through the Study Area is more likely to occur via the existing Willow Creek/Little Lake PSW crossing, which provides a more continuous linkage between habitat areas and will be maintained throughout and post-construction. A record for Snapping Turtle was identified through the background review; however, the species was not observed during past or recent field investigations although targeted surveys were not completed. The MAS vegetation community within the CDA was determined not to provide suitable turtle overwintering SWH.

Records of Grasshopper Sparrow were noted during the background review within the Study Area. However, as Grasshopper Sparrows were not detected, there is no SWH present for this SOCC that is anticipated to be impacted based on the proposed works.

The MEG community within the study area was identified as Candidate SWH for the Monarch Butterfly. During the field investigations completed in support of the 2022 TESR and subsequent field investigations completed by AECOM in 2024 and 2025, no incidental observations of Monarch were recorded. Given that no targeted surveys were completed, it was determined that only candidate SWH for the Monarch Butterfly is present within the CDA.

4.1.5 Fish and Fish Habitat

As part of Detail Design, AECOM completed a fish and fish habitat assessment for the Highway 11 bridge replacement and interchange improvements proposed. Given that the Morrison Hershfield Fish and Fish Habitat Impact Assessment Report (dated September 2020) prepared in support of the preceding 2022 TESR is less than 10 years old additional data was not obtained from the MNR or NVCA. The Detail Design aquatic field survey was completed on June 27, 2024 and did not identify any significant changes from the habitat documented in the Preliminary Design Fish Report prepared in support of the preceding 2022 TESR.

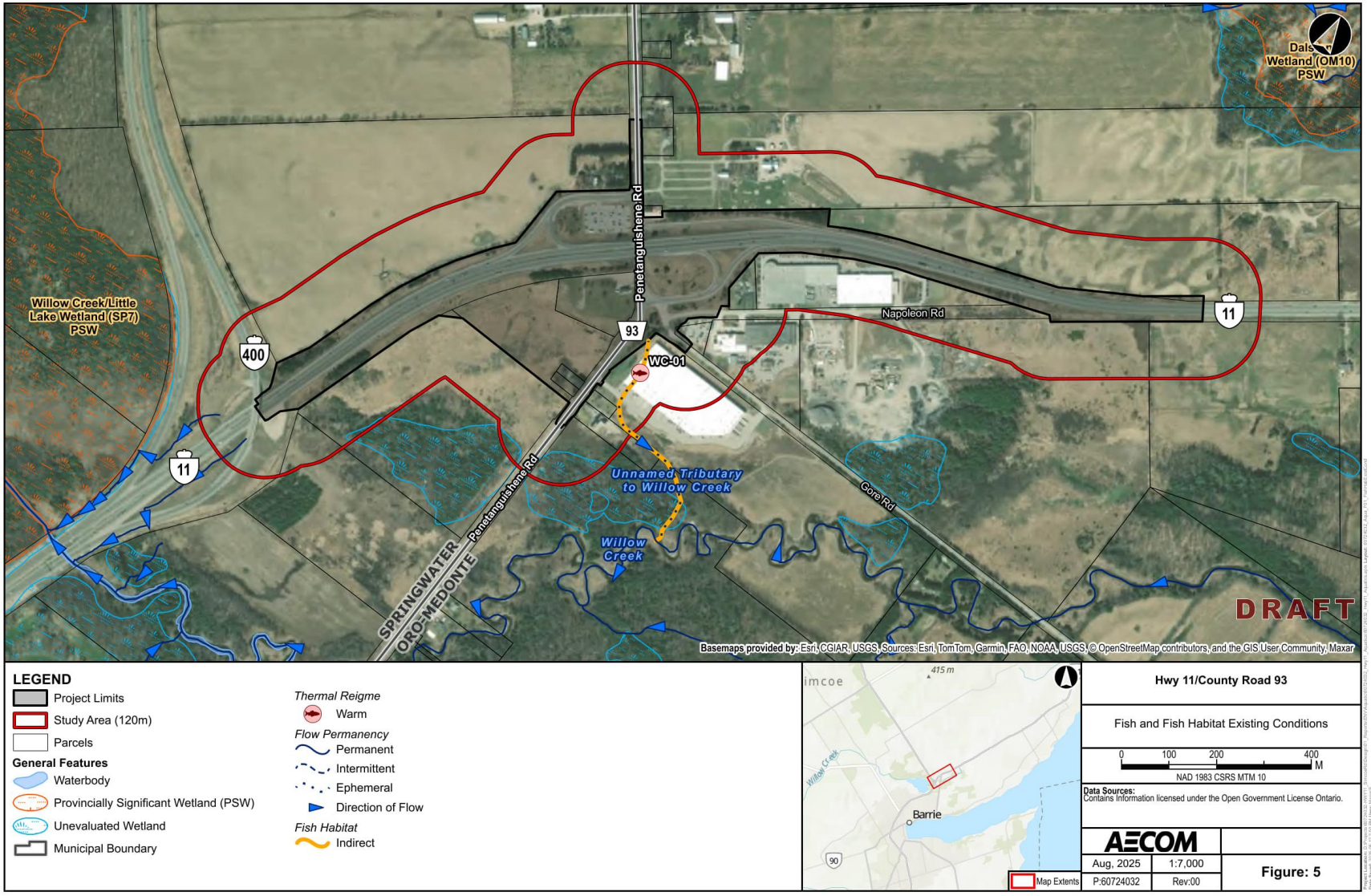
The field work determined that one watercourse crossing is present within the Study Area. As illustrated in **Figure 5**, the Unnamed Tributary to Willow Creek is located south of Penetanguishene Road and conveys flow from the highway interchange downstream to Willow Creek, a warmwater feature. The watercourse was observed to be a drainage feature with numerous rock check dams along a downstream slope with a grass lined bottom indicating that it provides flow during storm events and during the spring freshet. It was determined that the downstream gradient, rock check dams, and ephemeral flows prevent fish from using the drainage feature and that the subject watercourse provides indirect habitat with no sensitive or significant habitat features observed. No aquatic Species at Risk (SAR) were identified based on the background review and field investigations.

As per Step 1 of the 2025 Fisheries Protocol the preparation of a formal Updated Fish and Fish Habitat Impact Assessment Memo was not required given that no project activities are proposed within 30 metres of direct fish habitat. Additionally, updates to the Fish and Fish Habitat Existing Conditions Excel Spreadsheet were also deemed unnecessary since the Detail Design field survey did not identify any significant changes from the habitat documented in the Preliminary Design Fish Report.

4.1.6 Waste and Contamination

A Contamination Overview Study (Morrison Hershfield, 2019) was completed during the preceding Preliminary Design and summarized in the 2022 TESR. As part of the current Detail Design phase, AECOM completed a Preliminary Site Screening for 3 properties in support of property acquisition that included 540, 546 and 548 Penetanguishene Road. The screenings concluded that were no significant concerns in terms of soil and/or groundwater contamination identified for the subject properties, however, a Phase I ESA was recommended for one of the properties based on historical land use and site observations.

Figure 5: Existing Watercourse Crossings



A Phase I Environmental Site Assessment (ESA) was subsequently completed for the vacant property at 548 Penetanguishene Road in accordance with Ontario Regulation ("O. Reg.") 153/04 to assess potentially contaminating activities and identify areas of potential environmental concern ("APEC") based on the former operations and usage of the subject property. Currently, the property is vacant with three existing structures that include a single storey residence and two rear sheds with a driveway that extends east/west along the south side of the property to Penetanguishene Road. The investigation conducted as part of the Phase I ESA included a review of historical site records and Environmental Risk Information Service (ERIS) report; contact with regulatory agencies; site walk-through; photographic log of the Phase I ESA Property; and preparation of a Phase I ESA Report. The report recommended that a Phase II ESA be completed for the subject property.

The objective of the Phase II ESA was to assess the presence or absence of potential contaminants of concern and the extent of any contamination in soil and groundwater. The report concluded that no further assessment is required.

4.1.7 Designated Substance Survey (DSS)

A Designated Substance Survey (DSS) was conducted for the vacant residential structures to be demolished within the study area and the Highway 11 bridge on June 28th and July 31st, 2024.

The DSS was conducted in accordance with Ontario Regulation 490/09, Designated Substances, as amended by Ontario Regulation 148/12 ("O. Reg. 490/09"), Ontario Regulation 189/19 [amending O. Reg. 490/09 (Designated Substances)] ("O. Reg. 189/19"), and Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, as amended by O. Reg. 479/10 ("O. Reg. 278/05") of the Ontario Occupational Health and Safety Act ("OOHSA").

The purpose of the DSS was to identify the presence of any hazardous materials or designated substances that may be present at affected structures and provide recommendations for the safe removal of the substances prior to construction.

4.1.8 Excess Soil

During Detail Design it was estimated that there would be approximately 20,000 m^3 of surplus material. It was determined that the excess material would be reused on site in the form of berm construction that would be less than 2 metres in height.

Given the excavation quantities and the planned reuse of the soil on site, the need to file a Notice in the Registry or prepare the reports associated with O. Reg. 406/19

(i.e., Assessment of Past Uses, Sampling and Analysis Plan, and Soil Characterization Report) would not be required.

As opposed to preparation of formal reports associated with O. Reg. 406/19, but as a matter of due diligence, an environmental soil sampling and testing program was completed to confirm that the soil intended for future on-site reuse is not impacted or contaminated. The results have been documented in an Excess Soil Due Diligence Memo for consideration by the contractor.

4.1.9 Groundwater

A hydrogeological investigation was undertaken by AECOM with the intent of characterizing the local physical and hydrogeological setting, quantifying potential dewatering requirements for construction, assessing possible impacts to local water wells, structures / infrastructure, and groundwater-dependent environmental features, and to recommend appropriate monitoring and mitigation measures, as required. This assessment was completed in accordance with Part III of O. Reg. 63/16 (as amended) for both a Water Taking Report and Discharge Report. The hydrogeological investigation Study Area included the site and a 500 metres radius.

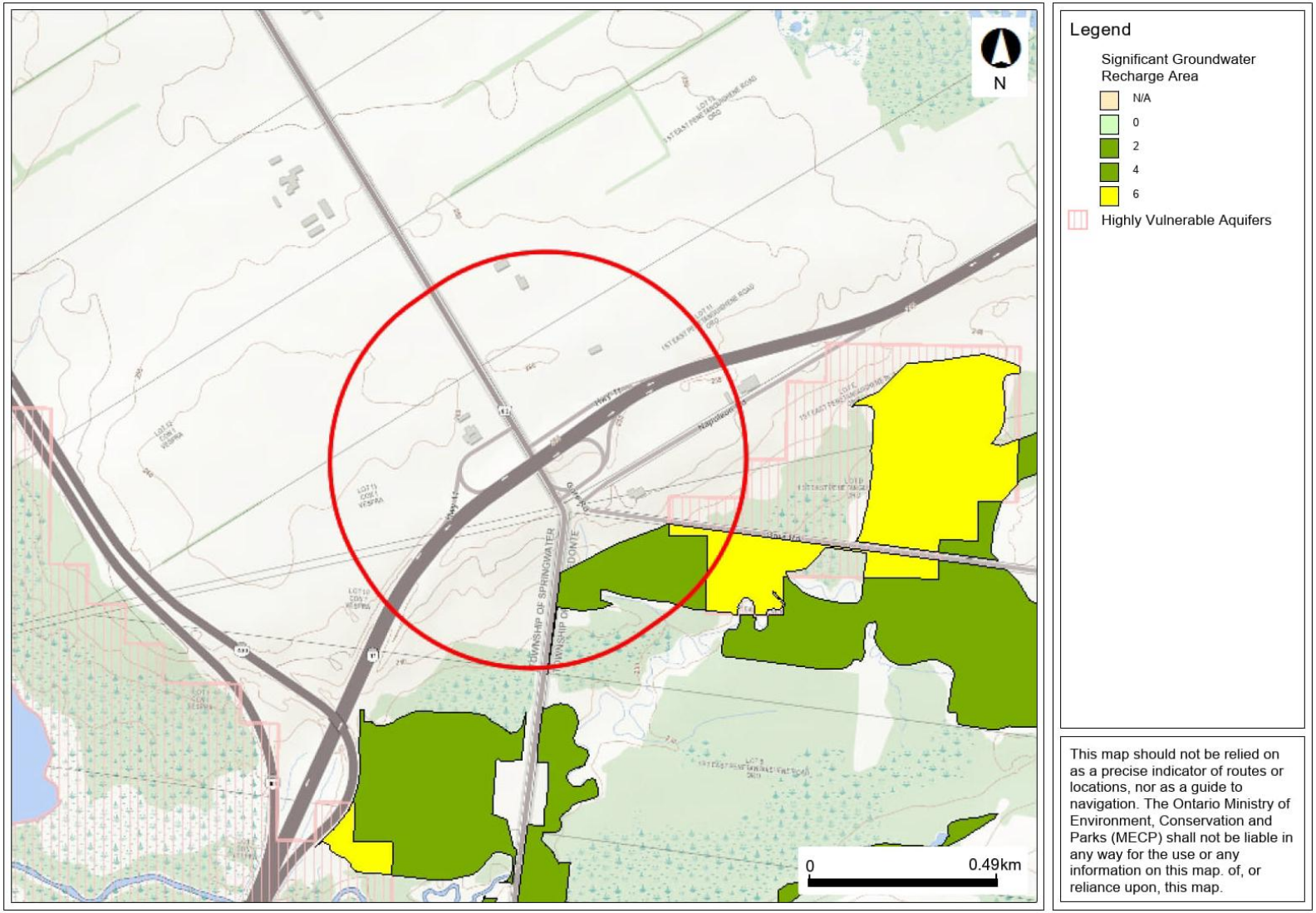
Boreholes and monitoring wells were advanced as part of this project in the area of the overpass; however, the groundwater table was not encountered during drilling and as such, no groundwater quality sampling was completed.

4.1.10 Source Protection

The Study Area is located within the Nottawasaga Valley Source Protection Area (NVSPA). A review of MECP's *Source Protection Information Atlas* indicates that the Project is not situated within an identified Wellhead Protection Area, (including WHPA-E - Groundwater Under Direct Influence, Q1 or Q2), Intake Protection Zone (IPZ), Issue Contributing Area (ICA), or an Event Based Area (EBA). The Study Area includes lands that have been delineated as a Highly Vulnerable Aquifer (HVA) and Significant Groundwater Recharge Area (SGRA); however, as illustrated in **Figure 6,** these areas do not encompass the construction area of the project.

The results of the assessment were documented in a Hydrogeological Investigation Report (AECOM, August 2026) that provided a summary, interpretation, and discussion of the assessment results, in sufficient content and detail to serve as technical support for registration of dewatering activity on MECP's EASR system, in accordance with O. Reg. 63/16 (as amended).

Figure 6: Source Protection Information



4.2 Socio-Economic Environment

4.2.1 Land Use

The project is currently located within the Township of Oro-Medonte and the County of Simcoe as well as the City of Barrie (formerly the Township of Springwater) given a recent municipal boundary change effective January 1, 2026. Land on the west side of Penetanguishene Road within the Study Area was initially within the Township of Springwater, but midway through the project following the boundary adjustment it is now within the City of Barrie. Land on the east side of the corridor continues to remain within the Township of Oro-Medonte and the County of Simcoe.

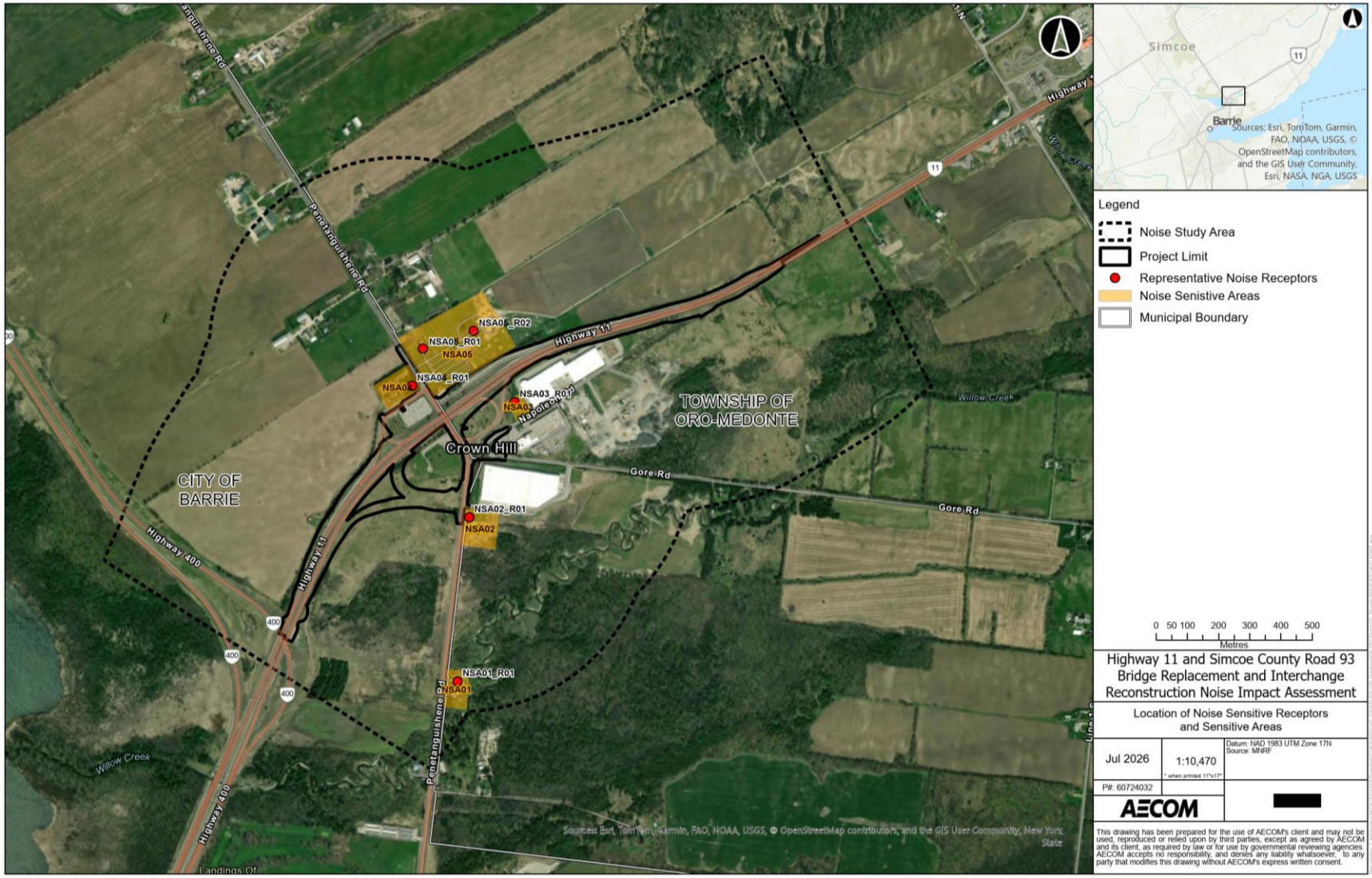
The MTO existing carpool lot is located in the northwest quadrant of the interchange with agricultural lands to the north. Land use in the northeast quadrant consists of the Crown Hill Martial Arts studio at 605 Penetanguishene Road in the former Dalston-Crown Hill United Church with Chappell Farms situated further northwest at 607-609 Penetanguishene Road. Land use in the southwest quadrant consists of the Greek Orthodox Church and cemetery and agricultural lands. A vacant residential lot is also present on the west side of Penetanguishene Road that was acquired by MTO with the existing structures to be demolished. Land use in the southeast quadrant of the interchange consists primarily of industrial/commercial uses that include the Napoleon Home Comfort manufacturing plant and related logistic facility, Wolfe Steel manufacturing, a Dufferin Construction concrete plant, and Sarjeant Asphalt. To the south are two residential homes surrounded by rural lands.

To incorporate lands defined through the Barrie-Oro-Medonte-Springwater Boundary Adjustment Act, 2025, the City of Barrie completed an Official Plan Amendment to Official Plan 2051 in May 2024 to guide the long-term planning, servicing and development of the new lands. The County of Simcoe has also made adjustment to their Official Plan (February 2023) to reflect the boundary shit.

4.2.2 Noise

A traffic noise analysis and a construction noise assessment were completed as part of this undertaking in accordance with the MTO Environmental Guide for Noise (MTO Guide 2022) and documented in a Noise Impact Assessment Report. Relevant guidelines from the Ontario Ministry of the Environment, Conservation, and Parks (MECP), and the local municipal noise control bylaw were also considered in the assessment. For this assessment, the area of investigation was defined as the area within 600 metres perpendicular to the edge of project pavement, extending longitudinally 100 metres along the alignment from the end of project pavement, as illustrated in **Figure 7**.

Figure 7: Location of Noise Sensitive Receptors and Sensitive Areas



The Traffic Noise analysis was completed in accordance with the MTO Guide 2022 with "noise impact" defined as the difference between the "No Project" and the "With Project" noise levels during the subject year of assessment (Horizon Year), which is typically 10-years post-construction. The horizon year of 2041 was used as the basis of the assessment. Where the future noise level with the proposed improvements in the Outdoor Living Area (OLA), associated with a receptor, results in equal or greater than 5 dB increase over the future noise level without the proposed improvements or the projected noise level is equal to or greater than 65 dBA, the following must occur:

- noise control measures must be investigated within the right-of-way; and
- if a minimum attenuation of 5 dB can be achieved in the OLA averaged over first row receivers, the feasibility of the selected measures within the right-of-way are to be investigated.

With respect to construction noise Section 7.5 of the MTO Guide 2022 indicates that Noise Sensitive Areas (NSA) must be identified and the potential noise impacts of construction equipment on the NSAs must be determined and appropriate mitigation measures recommended.

Land uses classified as "Traditional NSAs" by the MTO Guide 2022 consist of the following associated with Outdoor Living Areas (OLAs): Private homes such as single family residences; townhouses; and multiple unit buildings (i.e. apartments with OLAs for use by all occupants) as well as hospitals and nursing homes for the aged where there are OLAs for patients. Land uses that do not qualify as noise sensitive by the MTO Guide 2022 consist of apartment balconies above ground floor, cemeteries, commercial and industrial.

For the current project adjacent land use is primarily agricultural, with rural residences, located north and south of Highway 11. Noise sensitive areas present within the study area are detailed in **Table 1** and illustrated in **Figure 7**.

Table 1: Assessed Representative Noise Sensitive Locations

NSA	Representative Receptor	Front Row Receptors Represented	Description
NSA01	NSA01_R01	2	499 Penetanguishene Road
NSA02	NSA02_R01	2	559 Penetanguishene Road
NSA03	NSA03_R01	1	18 Napoleon Road
NSA04	NSA04_R01	1	600 Penetanguishene Road
NSA05	NSA05_R01	1	629 Penetanguishene Road
NSA05	NSA05_R02	1	609 Penetanguishene Road

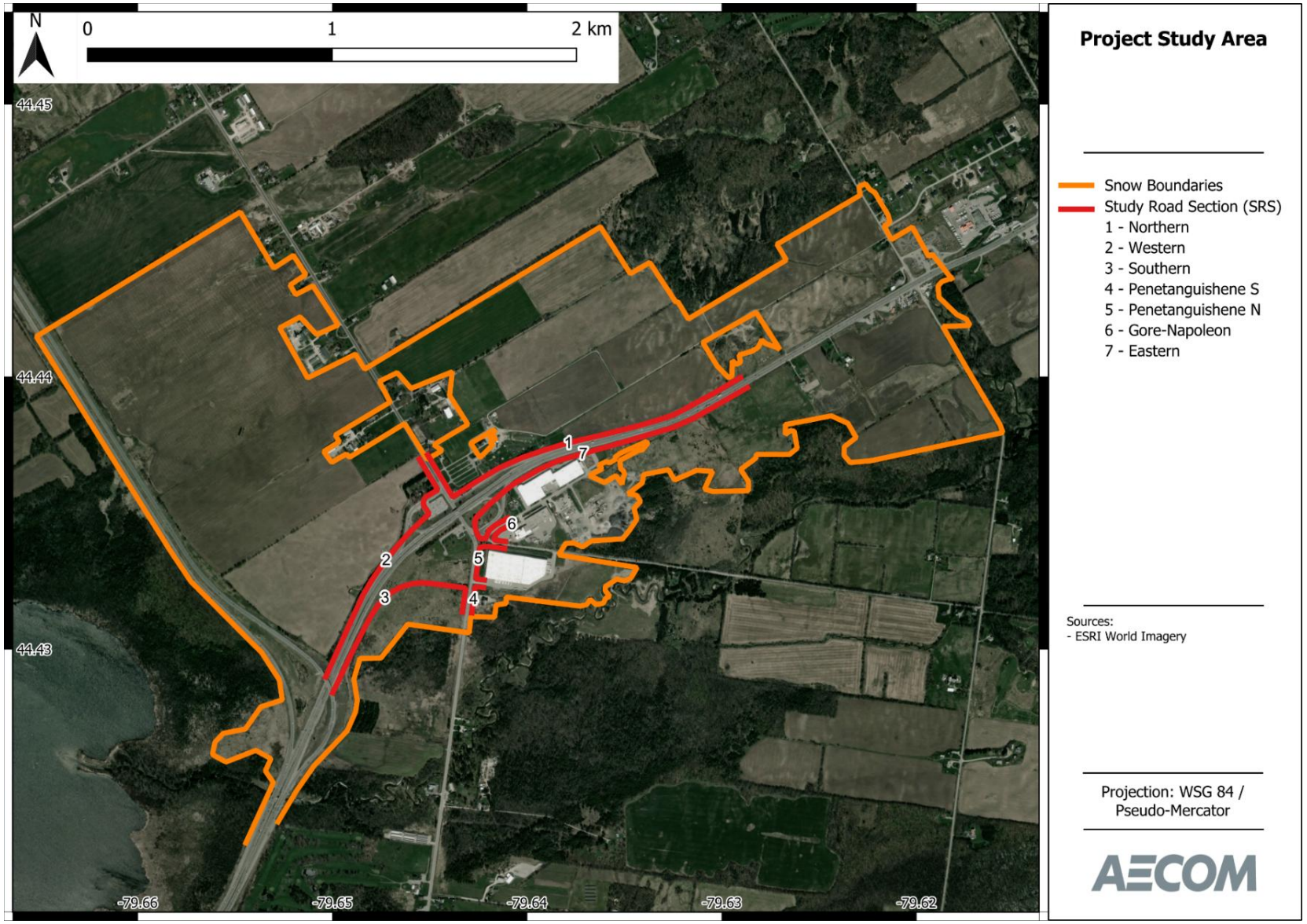
4.2.3 Snow-Drift Assessment

As part of this project, an Assessment of snow drift potential was completed and documented in a Snow-Drift Potential Baseline Report (AECOM, August 2026). The assessment included a meteorological analysis of snow and wind, an estimation of drifting snow and associated risk in accordance with applicable guidelines. The report also included recommendations for appropriate mitigation measures to address the identified risks.

As illustrated in **Figure 8**, the subject of the assessment, the Study Road Section (SRS), included the 3 kilometre-long section of Highway 11 located east of the intersection with Highway 400 up to the intersection with Line 1. The central element of the study, the Highway 11 / County Road (CR) 93 Bridge, is located 900 metres east of the Highway 400 / Highway 11 intersection. The part of the SRS located west of Penetanguishene Road is located within the City of Barrie.

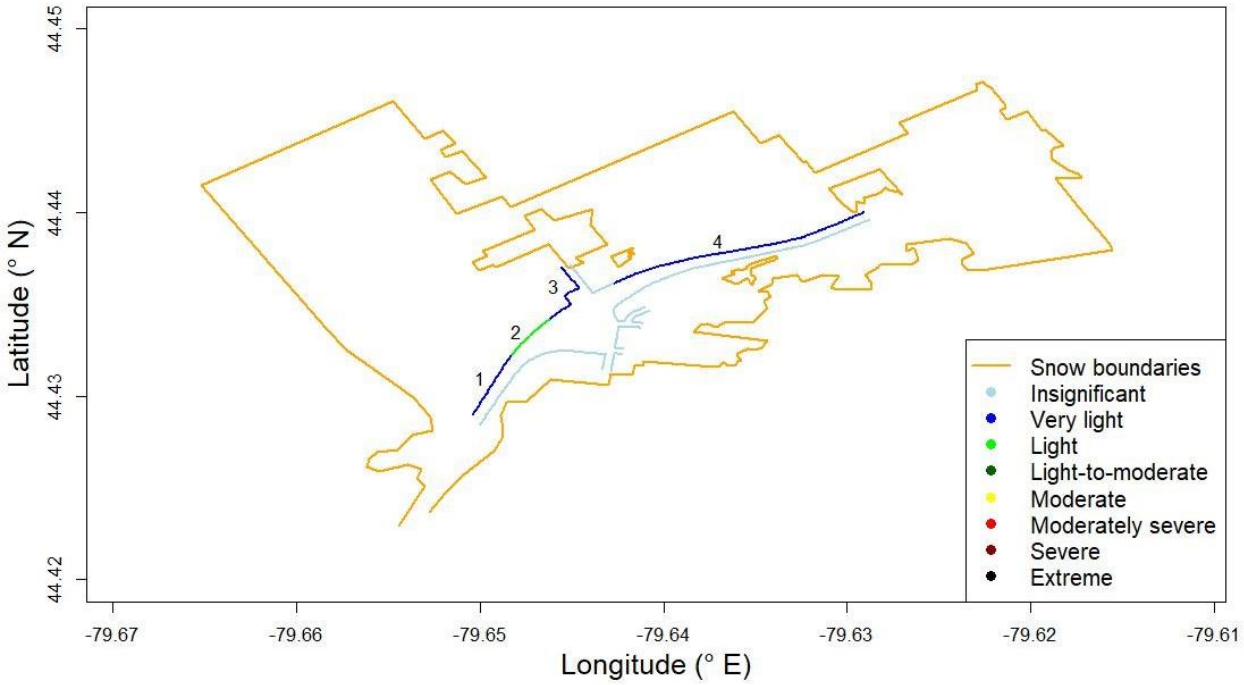
The Study Area included the SRS and the surrounding area that is the source of potential snowdrift. The SRS consisted of exterior road banks (pointing toward the countryside, from where the bulk of the snow can potentially drift over the road). As illustrated in **Figure 8**, the SRS was separated into seven segments by Highway 11, Penetanguishene Road, and other smaller roads. Two meteorological stations, Barrie-Oro and Shanty Bay were used in this study to determine snowfall potential and wind patterns. The assessment did not include modelling of snow transport, but rather a characterization of potential transport of snow by wind based on available wind and snow statistics for the Study Area.

Figure 8: Snow Boundaries and Study Road Sections



As illustrated in **Figure 9**, four segments were identified with a non-insignificant risk.

Figure 9: Snowdrift Risk Along the Right-of-Way



The risk and length of these segments of non-insignificant risk are summarized in **Table 2**. This information was used to prepare recommendations on the dimensions and position (length, setback distance, height) of the snow barriers needed to mitigate these risks.

Table 2: Identified Segments of Non-Insignificant Risk

Segment #	Risk	Length (m)
Segment #1	Very light	380
Segment #2	Light	270
Segment #3	Very light	400
Segment #4	Very light	1,170

4.3 Cultural Environment

4.3.1 Archaeological Resources

Previous archaeological assessments were undertaken within the Study Area and vicinity that included a Stage 1 assessment by A.M. Archaeological Associates (2020)

completed to inform the preceding Preliminary Design and associated TESR in 2022. The assessment included approximately 118 hectares from the Highway 11 and Highway 400 interchange north 2.55 kilometres and east and west along Penetanguishene Road approximately 630 metres. The assessment determined that portions of the Study Area require further archaeological assessment.

During the current Detail Design phase it was determined in consultation with the MCM, that an additional Stage 1 was necessary to fulfill the requirement for additional archival cemetery research and a mapping review for the St. James Crown Hill Cemetery.

As part of this undertaking, AECOM conducted a Stage 1-3 archaeological assessment. Based on the Stage 1 background research compiled by AECOM, it was determined that there is a low potential for unmarked burials to exist beyond the known cemetery property limits and that the existing fence represents the legal limits of the cemetery. It was therefore determined that the likelihood of encountering unmarked burials is low.

AECOM conducted a Stage 2 archaeological assessment of 546-548 Penetanguishene Road, between November 18, 2024 and October 29, 2025. The St. 2 AA concluded that several locations did not contain sufficient cultural heritage value or interest to warrant further archaeological investigation and should therefore be considered cleared of archaeological concerns. However, a Stage 3 level of assessment was completed for one location found to contain sufficient cultural heritage value and interest to warrant further study prior to any land altering activities. The St. 1-3 assessment concluded that a Stage 4 mitigation of development impacts was required for one localized area. The proposed Stage 4 field strategy was discussed and confirmed in advance with representatives of the engaged Indigenous Communities. The site was subsequently removed through the Stage 4 excavation and as such, archaeological concerns are considered addressed for this project.

4.3.2 Built Heritage and Cultural Heritage Landscapes

A Cultural Heritage Assessment Report (CHAR) was completed by Unterman McPhail Associates in 2020 as part of the preceding Preliminary Design and Class EA Study (Group ‘B’) undertaken by the Ministry in 2022. The assessment was conducted to identify all known and potential built heritage resources (BHRs) and cultural heritage landscapes (CHL) located within or adjacent to the area of potential impact.

The CHAR had recommended that a Heritage Impact Assessment be completed for 605 Penetanguishene Road, the Dalston-Crown Hill United Church located in the northeast quadrant of the interchange. However, during Detail Design, the alignment was modified to avoid the affected property, and it was therefore determined that a

Heritage Impact Assessment would not be required given that no impacts were anticipated to the heritage attributes of the property.

The Preliminary Design CHAR also identified 543 Penetanguishene Road (alternate address to 548 Penetanguishene Road) as a potential built heritage resource. A Cultural Heritage Evaluation Report (CHER) was subsequently completed for the property at 548 Penetanguishene Road as part of the current Detail Design project to determine its cultural heritage value or interest (CHVI) in accordance with Ontario Regulation 9/06 (O. Reg. 9/06) and Ontario Regulation 10/06 (O. Reg. 10/06). The CHER examined the property as a whole, its relationship to its surroundings, as well as its individual elements and landscape features.

The Subject Property, as illustrated in **Figure 10**, is located on a rectangular parcel, approximately 0.09 hectares in size and contains a one-storey wood-frame house that was built between 1951-1968. The property is owned by MTO and is not currently designated or listed on the City of Barrie's Municipal Heritage Register.

Figure 10: View of Subject Property Looking West from Penetanguishene Road (taken October 2025)



Based on the results of the review, including evaluation utilizing O. Reg. 9/06 and O. Reg. 10/06, the CHER concluded that the subject property does not have CHVI at the local level and is not considered a Provincial Heritage Property. No further heritage reporting is recommended.

4.4 Transportation and Other Infrastructure

4.4.1 Road Network

Highway 11 is a provincial highway extending through the Study Area in a north-south direction. Within the Study Area, Highway 11 is a divided highway consisting of two northbound and two southbound through lanes. Highway 11 crosses over Penetanguishene Road at the existing Highway 11 / Penetanguishene Road interchange. Access between Highway 11 and Penetanguishene Road is provided by interchange ramps in each quadrant.

Penetanguishene Road, extends generally north-south through the Study Area and passes beneath Highway 11. The roadway was formerly under the jurisdiction of the County of Simcoe and has since been transferred to the City of Barrie. Penetanguishene Road provides an important arterial connection between Barrie and communities to the north and provides access to Highway 11 through the existing interchange.

Gore Road and Napoleon Road are local roads within the Study Area that intersect Penetanguishene Road in the vicinity of the Highway 11 interchange. Portions of both roads are being reconstructed as part of the project to accommodate the proposed interchange configuration and associated grading, drainage and access modifications.

The surrounding road network also includes local roads and entrances serving residential, commercial, institutional and agricultural properties within the Study Area.

4.4.2 Penetanguishene Road Bridge

The existing Highway 11 / Penetanguishene Road overpass was constructed in 1950 and carries the northbound and southbound lanes of Highway 11 over Penetanguishene Road. The structure consists of a single-span reinforced concrete rigid frame supported on spread footings, with a clear span of approximately 15.6 metres between the abutment faces. Retaining walls are located at the four corners of the structure.

The structure has an overall width of approximately 32.7 metres and accommodates two Highway 11 through lanes and one speed-change lane in each direction. The northbound and southbound bridge decks were constructed as a single structure without a median expansion joint. The structure is skewed approximately 4 degrees relative to Penetanguishene Road. Existing vertical clearance beneath the structure varies from approximately 5.15 metres at the south end to 4.77 metres at the north end.

The existing overpass was rehabilitated in 1992; however, due to the age and condition of the structure, replacement of the existing overpass is required as part of the Highway 11 / Penetanguishene Road interchange improvements.

4.4.3 Utilities / Servicing

The following existing utilities are located within the project limits and require relocation:

- **Bell:** Existing overhead and underground infrastructure located on Penetanguishene Road (east of Highway 11).
- **Hydro:** Existing overhead and underground infrastructure located on Penetanguishene Road (east of Highway 11).
- **Enbridge:** Existing underground infrastructure is present on Penetanguishene Road (east of Highway 11).

There are no existing municipal services present within the Study Area.

5. The Recommended Plan

5.1 Design Details

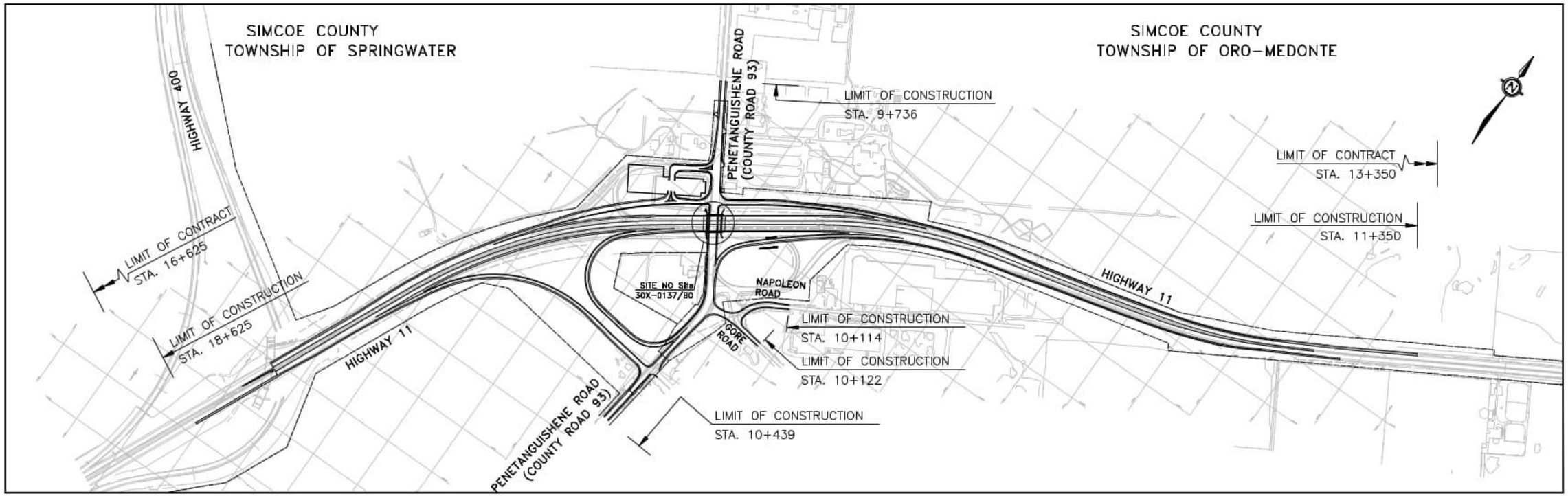
As mentioned in the previous sections, the purpose of this project is to replace the Highway 11 Overpass at Penetanguishene Road and to reconfigure the interchange ramps. The project includes the reconstruction of the Highway 11 approach lanes to accommodate a proposed grade raise of about 1.6 metres at the overpass crossing and a proposed horizontal shift of about 10 metres towards the west. Also included are modifications to an existing carpool lot and roadside safety improvements.

The scope of work for this contract is generally outlined as follows:

- A new longer, single span, overpass structure to replace the existing Highway 11 rigid frame overpass structure that is in its end of service life and to accommodate the future widening of Penetanguishene Road to 4 lanes under the bridge. A cost sharing agreement will be prepared with the City of Barrie.
- Modifications to the existing interchange to a Parclo A4 (east) / Diamond (west).
- New ditch drainage, storm sewers, curb and gutter, culverts, and stormwater management ponds.
- Incorporation of City of Barrie municipal servicing infrastructure, including a new 750 millimetre diameter sanitary sewer and twin 300 millimetre diameter watermains along Penetanguishene Road, coordinated with the interchange works.
- New traffic signals at west ramp terminal and provisions for future signals at east ramp terminal.
- Shifting the horizontal alignment of Highway 11 approximately 10 metres to the west to avoid adjacent property impacts and accommodate future widening.
- New roadside safety improvements including installation of TL-5 median barrier.
- Reconstruction of the carpool lot to accommodate the reconfiguration of the interchange and maintain the existing number of stalls.
- An upgrade of the existing illumination, the installation of additional illumination, and the provision of temporary illumination for staging, detours, and construction.

Figure 11 provides an overview of the Recommended Plan and the works proposed. New construction drawings and the Landscape Plan are included in **Appendix B**.

Figure 11: Recommended Plan



5.1.1 City of Barrie Servicing Infrastructure

As indicated, a municipal boundary shift resulted in land on the west side of Penetanguishene Road within the current Study Area being part of the City of Barrie. As the project progressed, the City subsequently advised MTO of their intent to install municipal servicing to facilitate development west of the interchange in the boundary expansion area. Following discussion between the MTO and the City it was agreed that municipal water and wastewater servicing infrastructure will be installed within Penetanguishene Road as part of the current project. At present, it is understood that servicing infrastructure will be constructed within the existing ROW; however, it will not be connected at this time but rather capped at both ends for future use. The MTO continues to work with the City to confirm details in advance of construction.

5.2 Construction Staging

Construction staging will be required to facilitate replacement of the Highway 11 / Penetanguishene Road overpass, reconstruction of the interchange ramps, and reconstruction of portions of Highway 11, Penetanguishene Road, Gore Road and Napoleon Road. Construction of the project is anticipated to extend over five construction seasons. A detailed staging plan has been developed to maintain traffic through the interchange during construction while providing sufficient work areas for construction of the proposed works.

Four lanes of traffic will generally be maintained on Highway 11 during peak periods. Traffic will be shifted through a series of temporary configurations as construction progresses, including temporary ramp closures and modifications to ramp terminal operations.

Penetanguishene Road will generally remain open to traffic; however, temporary full closures will be required for specific construction activities. During these closures, signed detour routes will be provided via Georgian Drive, Duckworth Street, Highway 400 and Forbes Road.

Construction of the interchange will also require staged modifications to access to the MTO carpool lot and temporary changes to traffic operations at the east and west ramp terminals. Access will be maintained or temporarily redirected as required by the applicable stage.

A summary of the principal traffic staging changes and anticipated traffic impacts is provided in **Table 3**.

Table 3: Summary of Construction Stages with Traffic Impacts

Construction Stage	Key Traffic Configuration/ Ramp and Road Changes	Anticipated Traffic Diversion / Impacts
Stage 3A	■ Closure of the Highway 11 N-W off ramp (in advance of Penetanguishene Road)	■ Traffic that would usually exit via this ramp would be diverted to the Highway 11 N-E/W loop off ramp instead. This impacts westbound traffic that would regularly continue on Penetanguishene Road or turn into the carpool lot.
Stage 3B	■ Closure of the Highway 11 N-E/W off ramp (loop ramp after Penetanguishene Road)	■ The southbound traffic on Highway 11 that exits onto Penetanguishene Road is being directed to the newly constructed N -E/W directional off ramp (formerly the N-W ramp, that was closed in 3A). This eliminates the former configuration with two off ramps for southbound traffic and brings all exiting traffic onto one off-ramp. It impacts traffic that would access the carpool lot as it removes the direct access previously held. In addition, southbound traffic can now turn left at the new N-E/W ramp compared to only allowing right turns at the old configuration.
Stage 4 Part 1	■ Access to the carpool lot on the west, from Penetanguishene Road is now right in, right/left out. Westbound left turns to access the lot are restricted. ■ The Highway 11 E/W-S on ramp has moved into alignment with the N-E/W off ramp forming a four-legged intersection. ■ The carpool lot can be accessed from the Highway 11 E/W-S on ramp as a right in-right out access.	■ With the Highway 11 E/W-S on-ramp closed, the carpool lot is now accessed via the newly built west ramp terminal. ■ Traffic from the N-E/W off-ramp experiences additional delays to complete through and left turning movements.
Stage 4 Part 3	■ Everything remains the same as Stage 4 Part 1 on the west side of Highway 11. ■ The east ramp terminal intersection will operate as one lane E-W with flagging in operation on the EB lane.	■ All directions will experience an increase in delays due to the single lane operation along eastern end of Penetanguishene Road.
Stage 4 Part 2 and 4	■ Everything remains the same as Stage 4 Part 1 on the west side of the Highway 11. ■ At the east ramp terminal intersection, the channelized right turn is removed. Southbound left and right turning traffic will have a shared lane.	■ With the channelized southbound right turn removed at the Penetanguishene Road / East ramp terminal intersection, southbound right turns will experience increased delays.
Stage 5A	■ The existing Highway 11 S-E/W off ramp is closed. The new S-E/W ramp is built and opened. Northbound traffic will now exit via the new off-ramp.	■ The new ramp moves exiting traffic further east along Penetanguishene Road, with most of this traffic originally destined westbound on Penetanguishene Road. Additionally, it will reduce the levels of vehicular friction for southbound vehicles turning left vehicles from Gore Road.
Stage 5B Part 1	■ Requires full closure (weekend) of Penetanguishene Road at the new west ramp terminal intersection.	■ A signed detour will be in place to guide traffic to and from Highway 11 to Penetanguishene Road.
Stage 5B Part 2-3	■ The intersections of Gore Road/Napoleon Road and Gore Rd and Penetanguishene Road have been realigned. ■ The existing Highway 11 E/W-N ramp is closed. The new E/W-N ramp terminal intersection is fully operational.	■ Although the alignment of the Gore Road/Napoleon Road/ Penetanguishene Road intersection has changed, the amount of traffic accessing Gore Road/ Napoleon Road didn't. However, the traffic patterns changed for vehicles that would access/exit Highway 11 and turn onto Gore Road. It is no longer an option to turn out from Gore Rd and access the on-ramp immediately and vice versa.
Stage 8	■ The T-intersection at the E/W-N ramp is closed. The W-N loop on-ramp is open. ■ The new E-N directional on-ramp opens on Penetanguishene Road.	■ Westbound traffic that was previously turning left at the T intersection to go northbound will now continue westbound to the new W-N on-ramp.

5.3 Carpool Lot

The existing carpool lot in the southwest quadrant of the interchange will be relocated westerly to accommodate the highway alignment shift and new interchange configuration. The existing carpool lot has 157 parking stalls and eight accessible parking stalls, for a total of 165 stalls. The relocated carpool lot has 161 parking stalls and eight accessible parking stalls, for a total of 169 stalls. Access to the carpool lot will be provided from Penetanguishene Road and Ramp E/W-S.

5.4 Structure

The proposed Penetanguishene Road overpass on Highway 11 is a single span post tensioned girder type rigid frame structure with 25.0 metres clear span between the abutment faces. The new structure will have a 3° skew to the centerline of Penetanguishene Road with 32.8 metres total width of the deck. The new structure will have concrete barrier walls on each side of the deck with a concrete median along the centre line of Highway 11. The existing horizontal alignment of Highway 11 will be shifted to the west by approximately 10.0 metres to facilitate the construction of the new structure in stages keeping traffic lanes open during construction.

5.5 Property

The property required for the construction of the proposed works has been purchased by the MTO. The MTO is seeking Permission To Enter and Construct (PTEC) for the Contractor from affected property owners for the duration of the contract, to complete minor grading and driveway modifications on these properties.

5.6 Utilities

The Project Team has consulted with all utility companies within the right-of-way and identified any potential conflicts between the Project and utilities. Utility relocation designs are currently ongoing. A summary of the utility conflicts is summarized in **Table 4**.

Table 4: Project Conflicts with Utilities

Utility Name	Existing Plant	Location	Conflict
Bell	Overhead, Underground	Penetanguishene Road (east and west of Highway 11), and MTO Carpool Lot	Relocation required: 2 Bell poles and guy pole in conflict with proposed east ramp terminal, includes Bell FOC dip. Pedestal to be relocated. Bell MH collar adjustment.
Hydro	Overhead	Penetanguishene Road (east of Highway 11)	Relocation required: Hydro pole and street lighting service pole in conflict with Penetanguishene Road grading.
Enbridge	Underground	Penetanguishene Road (east of Highway 11)	Relocation required in vicinity of Gore Road / Napoleon Road intersection.

Source: Design Synopsis (AECOM, August 2026)

5.7 Illumination

Illumination will be maintained at Highway 11/ Penetanguishene Road during construction. Partial conventional LED lighting system will be provided at the interchange, and full LED illumination of the commuter parking lot.

5.8 Traffic Signals

New traffic signals will be installed at Highway 11 West Ramp Terminal (N-E/W) and Penetanguishene Road. The signals are owned and maintained by MTO.

5.9 Drainage Improvements

As part of this undertaking, AECOM completed a drainage analysis with key objectives that included: a hydrologic and hydraulic assessment of the proposed drainage system; an evaluation of the adequacy of the proposed culverts and road drainage infrastructure including a new storm sewer system; identify opportunity(s) to implement stormwater management measures; and develop and Erosion and Sediment Control Plan (ESCP) that conforms with the project requirements. The results of the assessment were summarized in a Drainage and Stormwater Management Design Report (AECOM, September 2026).

The subject Study Area falls under the jurisdiction of the Nottawasaga Valley Conservation Authority (NVCA) although it is located outside the NVCA's regulated area. The drainage review determined that peak flows from the Highway 11 / Penetanguishene Road interchange is conveyed by existing culverts, storm sewer system and side ditches, which ultimately discharge southerly to Willow Creek which is regulated by the Nottawasaga Valley Conservation Authority (NVCA).

Drainage improvements to be completed as part of this undertaking include the replacement of the existing culverts and storm sewers, the construction of a new storm sewer system, side ditches, the implementation of Stormwater Management (SWM) measures that will provide water quality control of runoff and the development of an erosion and sediment control plan (ESCP) to address potential issues from clearing of vegetation, topsoil stripping and earth grading that leaves exposed soils vulnerable to wind and water erosion.

As illustrated in **Figure 12**, the proposed Stormwater Management Plan (SWM) plan consists of two SWM Ponds, one enhanced grass swale and flat bottom grassed swales. The flat bottom grassed swales will be located downstream of the SWM Ponds to provide additional quality treatment of runoff. Flows will be diverted to the SWM facilities using flat bottom grass swales. The proposed SWM facilities are designed to provide water quality and quantity control for the 2-year and up to the 100-year design storms to ensure there are no negative downstream impacts to the existing conveyance system and adjacent properties. As feasible, runoff from Highway 11 and Penetanguishene Road will be directed to the proposed SWM facilities. The proposed SWM ponds will provide water quality treatment of runoff and will provide to some extent quantity control of peak flows. SWM ponds have been designed as per the MECP design manual.

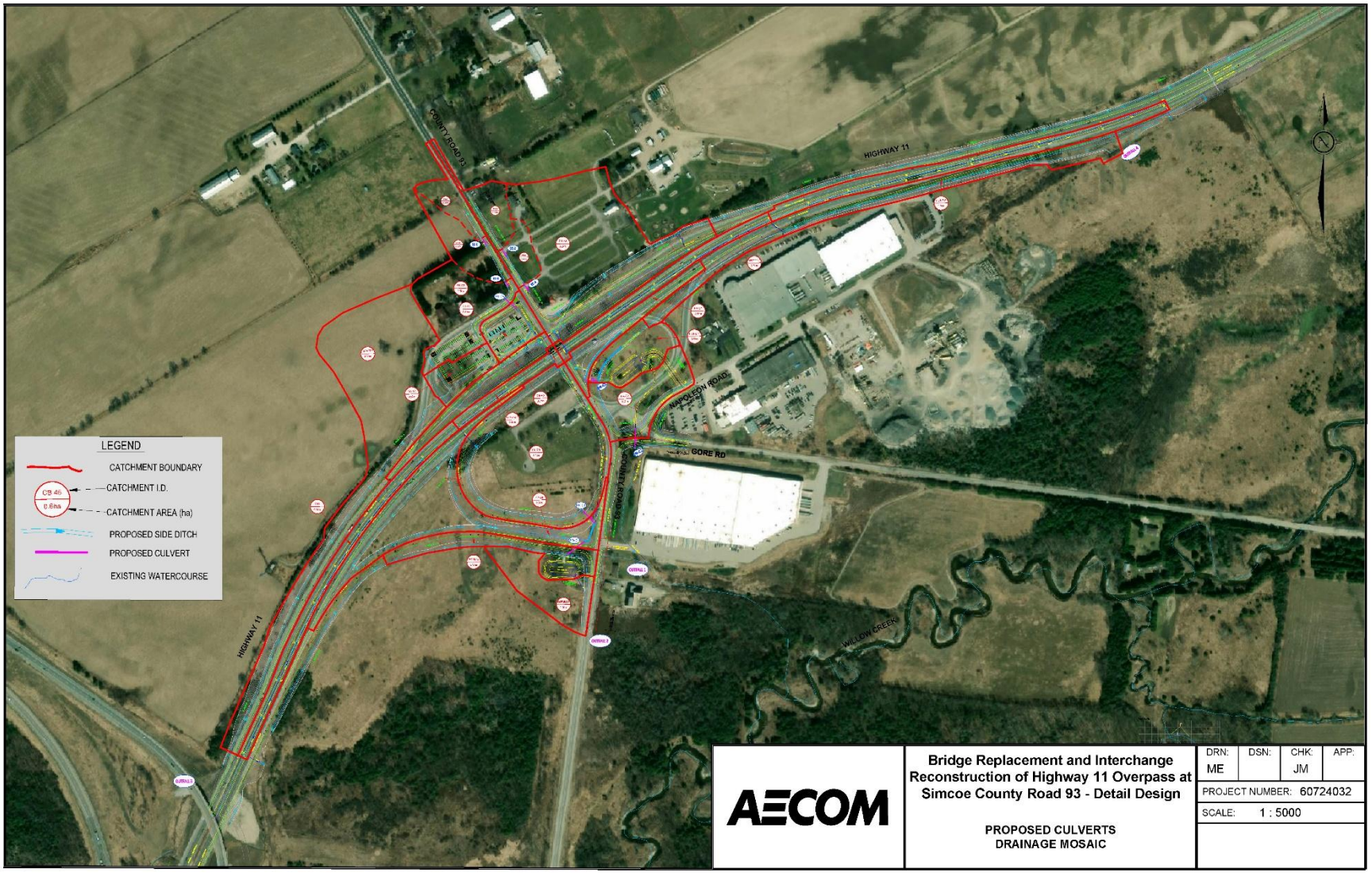
SWM Pond 1 will be located at the south-west quadrant of the Penetanguishene Road and S-E/W Ramp and will provide water quality and quantity control of runoff for an area of 10.14 hectares with a percentage of imperviousness of 35% (actual 10% imperviousness). This pond will discharge to the side ditch that runs southerly to Willow Creek along the west side of Penetanguishene Road. SWM Pond 2 will be located to the east of Penetanguishene Road and just south of E/N Ramp.

SWM Pond 2 will be located east of County Road 93 just south of E/N Ramp. This pond will provide water quality and quantity control of runoff for an area of 7.90 hectares with a percentage of imperviousness of 35% (actual 14% imperviousness) and will discharge to a channel located to the south of the pond that will ultimately discharge south to Willow Creek.

SWM Facility 3 consists of an enhanced swale that will be located on the south side of Highway 11 approximately at Station 10+900 and will provide treatment for an area of 2.54 hectares with an imperviousness of 21 percent (%). It will provide water quality treatment of runoff, and to some extent, peak flow control and will discharge easterly to the Highway 11 south side ditch.

Flat bottom grassed swales will assist in reducing flow velocities and to promote sedimentation. The proposed swales will be positioned along the edge of pavement to intercept surface runoff and direct flow towards catch basins, channeling the pre-treated runoff into the storm sewer network. From there, the flow will be conveyed to downstream stormwater management SWM facilities and the enhanced grassed swale in the east. Ultimately, the treated stormwater will be discharged into a local watercourse, ensuring compliance with municipal drainage standards and minimizing environmental impact.

Figure 12: Proposed Stormwater Management Pond Locations



Source: Drainage and Stormwater Management Design Report (AECOM, August 2026).

West of the Highway 11 / Penetanguishene Road overpass, the proposed drainage system will consist of catch basins and storm sewers. This network will be extended in comparison to existing infrastructure to enhance conveyance capacity. Runoff collected along the median will be directed to a proposed culvert (PR-C6), which ultimately discharges to proposed SWM Pond 2. East of the Highway 11 / Penetanguishene Road overpass, the proposed catch basin and storm sewer system will redirect flow along the westbound lane of Highway 11 toward the median where it will be conveyed to a ditch adjacent to the northbound lane, that will ultimately channel the runoff toward the proposed enhanced grassed swale (SWM Pond 3), located east of the overpass.

North of the Highway 11 / Penetanguishene Road overpass, surface drainage will be managed through a network of proposed culverts and storm sewers along Penetanguishene Road. A culvert proposed at the carpool lot access road (PR-C7) will convey runoff toward the adjacent ditch on Penetanguishene Road. Additionally, a new storm sewer system will divert flow away from the proposed carpool lot, towards a storm sewer system that crosses Penetanguishene Road and Highway 11, ultimately discharging into SWM Pond 1.

South of the Highway 11 / Penetanguishene Road overpass, the existing storm sewer system on Penetanguishene Road will be replaced with a proposed catch basin and storm sewer network that conveys runoff to SWM Pond 2. This pond will discharge through a proposed culvert (PR-C5) located south of Penetanguishene Road, ultimately directing flow southward toward Willow Creek. The existing centerline culverts on Napolean Road (ExCu-5) and Gore Road (ExCu-4) will be replaced with a proposed culvert (PR-C2). This culvert will collect roadway runoff and channel it through an existing ditch that outlets southward to Willow Creek. A proposed new culvert (PR-C4) will convey flow across the proposed W-N Ramp to a proposed new culvert (PR-C5) crossing the proposed S-E/W Ramp to SWM Pond 2.

The proposed storm sewer system and catch basin spacing have been designed to a have sufficient capacity to convey the minor (10-year) and major (100-year) design storm flows while meeting the applicable MTO flow spread criteria for Highway 11 and Penetanguishene Road.

A temporary drainage system will be required during staging and construction where existing drainage systems will be impacted by construction work. Temporary drainage will be required along Highway 11 to maintain the existing flow patterns and minimize traffic disruptions from potential flooding during construction. This is critical to avoid ponding issues associated with traffic shifts required during construction.

6. Environmental Impacts, Mitigation Measures and Commitments

This section presents an overview of the potential temporary and permanent impacts to the natural, socio-economic and cultural environments, as well as transportation effects associated with the design and construction of the Recommended Plan. The environmental protection and mitigation measures proposed prior to, during and post construction to avoid or minimize the impacts including commitments to future work are also identified. A summary of mitigation, protection and future commitments is presented in **Table 8** at the close of the report.

6.1 Natural Environment

The Construction Disturbance Area (CDA) as referenced in this section refers to the project limits including the proposed MTO ROW and lands southwest of the existing Highway 11 Bridge at Penetanguishene Road (formerly Simcoe CR 93) that MTO has acquired to construct the proposed on/off ramps.

Work proposed within the MTO ROW has been planned to largely avoid sensitive features (e.g., wetland features and forested areas) that exist adjacent to the ROW. The potential impacts associated with the proposed undertaking include the loss or degradation of vegetation cover, loss of confirmed SAR grassland bird nesting habitat, and disturbance to local wildlife (including SAR and SOCC) through noise or possible mortality during construction. Impacts overall are not expected to be significant and can be minimized through application of standard mitigation.

6.1.1 Erosion and Sediment Control

The excavation, placement, and grading of earth material has the potential to result in the release of sediment into roadside drainage and adjacent watercourses or waterbodies. Effective erosion and sedimentation control will be achieved throughout the project with stringent construction supervision, monitoring of the site, and maintenance of control works throughout their operational life.

Recommended Mitigation

The following Ontario Provincial Standard Specifications (OPSS), Standard Special Provisions (SSP), and Operational Constraints (OC) will be applied to this project:

- OPSS 802 – Construction Specification for Topsoil
- OPSS 803 – Construction Specification for Vegetative Cover

- OPSS 804 – Construction Specification for Temporary Erosion Control
- OPSS 805 – Construction Specification for Temporary Sediment Control
- SSP 805F01 – Timing Constraints for Temporary Sediment Control Measures
- SSP 804F02 – Timing Constraints for Temporary Erosion Control Measures
- OC - Erosion and Sedimentation Control

6.1.2 Vegetation and Designated Natural Areas

Vegetation communities to be impacted primarily consist of anthropogenic landscapes (i.e., roads, paved properties) with mowed lawns and disturbed roadside vegetation. The largest amount of vegetation removal will occur within the MEG vegetation community on the MTO acquired property that will facilitate ramp construction and marginal removal of other communities. Vegetation within the MEG community consists of a mix of native and non-native species characteristic of disturbed areas. The area of naturalized vegetation communities affected by vegetation clearing is summarized in **Table 5**. Approximately 7.6 hectares (19.2%) of vegetation communities are expected to be removed to accommodate the works proposed.

Other potential impacts can relate to incidental intrusion into adjacent areas and the potential for fill/sediment runoff as well as oil, gasoline, grease and other construction related materials entering vegetation communities adjacent to the proposed ROW.

Table 5: Summary of Vegetation Community Impacts

ELC Vegetation Code	ELC Description	Total Area (ha) in Study Area	Total Impacted Area (ha)	Total Impacted Area (%)
MEG	Graminoid Meadow	16.7	5.57	33.4
MEF	Forb Meadow	7.23	0.12	1.7
THDM4	Dry-Fresh Deciduous Regeneration Thicket	3.39	0.18	5.3
CUM	Cultural Meadow	4.84	1.10	24.6
CUT	Cultural Thicket	1.08	0.38	35.2
MAS	Shallow Marsh	1.67	0.18	10.8
OAGM4	Open Pasture	4.69	0.09	1.9
Total	**-**	**39.6**	**7.61**	**19.2**

A total of 13 of the 64 plant species (20%) recorded within the Study Area were non-native and/or invasive species such as phragmites. During construction there is the potential for the spread of invasive species as a result of vegetation clearing, grubbing, grading, and the movement of construction equipment; however, mitigation will assist in keeping impacts to a minimum.

Overall, potential impacts to vegetation communities outside the existing MTO right-of-way and designated areas are anticipated to be insignificant provided avoidance and mitigation measures are implemented during construction.

Recommended Mitigation

The following construction specifications will be employed to support avoidance or minimizing impacts:

- Refer to Landscaping Drawings for vegetation restoration.
- OC – Tree Removals
- OPSS 201 – Construction Specification for Clearing, Close Cut Clearing, Grubbing and Removal of Surface and Piled Boulders
- OPSS 801 – Construction Specification for the Protection of Trees
- OPSS 802 - Construction Specification for Topsoil
- OPSS 803 – Construction Specification for Vegetative Cover
- OPSS 804 – Construction Specification for Temporary Erosion Control
- OPSS 805 – Construction Specification for Temporary Sediment Control
- OC - Control of Emerald Ash Borer Infestation and Management of Host Trees

Invasive Species Prevention

- NSSP – Invasive and Noxious Vegetation Disposal and Burial
- OPSS 180 – General Specification for the Management of Excess Materials

6.1.3 Wildlife and Wildlife Habitat (Including Terrestrial SAR)

Vegetation communities present within the Study Area provide a variety of habitats for various wildlife, including SOCC and/or birds protected under the MBCA. Trees, shrubs and dense ground cover provide breeding and nesting habitat for common species tolerant to disturbance from human activity associated with the surrounding extensive road network and development. Migratory birds may use human-made structures, isolated trees and shrubs, and suitable ground cover for nesting.

Potential impacts to wildlife and wildlife habitat as a result of the proposed works may include the loss and fragmentation of confirmed and candidate grassland bird SAR Habitat, the disturbance or displacement of breeding birds or destruction of active nests, and / or the loss of and/or damage to candidate SWH for SOCC and wildlife habitat.

Species targeted surveys confirmed that nesting habitat for the Eastern Meadowlark, a migratory bird designated as Threatened under Schedule 1 of SARA is present within

the Study Area. Earlier in the project approximately 3.97 hectares (40%) of confirmed nesting habitat (i.e., MEG vegetation community) for the Eastern Meadowlark was ploughed to conduct archeological and geotechnical investigations of the subject property that will ultimately accommodate the construction of the proposed interchange infrastructure. At the time of the impact protections fell under the ESA and this activity was registered accordingly. MTO is developing a compensation habitat to offset this impact.

Vegetation removals (i.e., trees, shrubs, and ground cover) within the MTO ROW has the potential to disturb or displace nesting birds, including species protected under the MBCA and/ or SARA, and destroy their active nests if activities are conducted during the breeding bird season (April 1 to August 31). Although no nests of MBCA and/ or SARA protected species, were identified on, under or in structures likely affected by construction activities, there is potential for future nesting. The proposed overpass structure replacement and anthropogenic structure removal may result in the disturbance or displacement of birds protected under the MBCA and destruction of their nests.

While the MEG community has been identified as candidate SWH for the Monarch butterfly (SOCC), the majority of it will be retained (67.6 %) and since there is the abundance of Common Milkweed within the surrounding landscape, this SWH is not considered a constraint to the works proposed.

During construction there is the potential for temporary disturbance to area wildlife resulting from lighting, noise, and vibration as well as the potential for incidental wildlife injury or mortality. Given the proximity of PSWs and unevaluated wetlands there is also the potential to impact SAR/ SOCC turtles during construction activities.

An Advanced Clearing Contract (ACC) is proposed as part of this project to facilitate tree removal in spring 2027 before the onset of the wildlife active season (April 1) thereby reducing potential encounters with area wildlife. Overall, the potential to impact area wildlife is expected to be minimal provided the avoidance and mitigation measures as identified are implemented during construction.

Recommended Mitigation

The following avoidance and mitigation measure will assist in minimizing impacts:

- OC – Migratory Bird Protection – General
  - Bird Nesting Preventative Measures are recommended for the overpass structure & existing vacant structures at 548 Penetanguishene Road.
- OC – Wildlife Protection - General
- OC – Prevention of Wildlife Harassment

- OC – Protection of Species at Risk
  - **SAR Birds:** The ploughed portion of 540 Penetanguishene Road shall be maintained as fallow to keep the area incompatible for nesting grassland birds and minimize overall wildlife use. Any future maintenance of the ploughed area shall be completed outside of the breeding bird season (April 1 to August 31).
  - **SAR Bats:** All tree removal within potentially suitable bat habitat shall occur outside of the bat maternity roosting window (April 1st to Nov. 30th). Construction activities shall be limited to daylight hours (i.e., 7 am to 7 pm) to reduce the amount of noise and light disturbance to nocturnal species (e.g. bats). The Contractor shall avoid the use of high-pressure sodium and Light-emitting Diode (LED) lights immediately adjacent to woodlands. If construction at night cannot be avoided, lighting shall be pointed away from areas to shield any corridor illumination and reduce light spill into suitable SAR bat habitat.
  - **Stockpile Nesting:** In order to prevent Bank Swallow from nesting in stockpiles of soil, overburden or other similar materials, all slopes created by stockpiling material in the Project Limits shall be maintained at 1:1 or flatter for the duration of the overall bird nesting period from April 1 to August 31. Alternatively, exclusion methods such as geotextiles, plastic covers or tarps can be used to cover stockpiles to prevent nesting.
  - **Amphibian/Reptile Exclusion Fencing:** If construction within the MAS vegetation community (western limit of CDA) cannot avoid the turtle and snake active season (April 1 to October 30), the Contractor shall notify the CA and the Environmental Officer to determine if temporary wildlife exclusion fence (i.e., heavy-duty geo-textile or double row silt fencing) is warranted along the CDA where it abuts the MAS vegetation community. If required, the temporary wildlife exclusion fence shall be installed prior to April 1 of any given year and shall be maintained in accordance with the *Best Management Practices for Reptile and Amphibian Exclusion Fencing* (MECP, 2021).

6.1.4 Fish and Fish Habitat

As indicated, work proposed includes bridge replacement, ramp reconstruction, and drainage improvements. No in water work is proposed. Activities within 30 metres of the watercourse may involve vegetation clearing, excavation, grading, and use of industrial equipment. These activities have the potential to result in sedimentation or disruption of indirect fish habitat if not properly managed.

Recommended Mitigation

All works shall follow MTO Routine Works protocols and applicable Ontario Provincial Standard Specifications (OPSS) including:

- OPSS 182 – General Specification for Environmental Protection for Construction In and Around Waterbodies and on Waterbody Banks
- OPSS 804 – Construction Specification for Temporary Erosion Control
- OPSS 805 – Construction Specification for Temporary Sediment Control

As no in-water work is proposed, no timing restrictions will apply.

6.1.5 Drainage and Stormwater Management

During construction there is the potential to impact surface water through the accidental spillage of harmful substances from refueling and/or equipment maintenance. Erosion can also occur and result in sediment entering the watercourse. Overall, it is anticipated that impacts to surface water and area drainage during construction will be minimal provided the standard measures for working in and around water are followed.

Best management practices (BMPs) such as silt fences, straw mulch, etc., have been incorporated into the design, with the objective of minimizing impacts to the tributaries of Willow Creek and to fish and fish habitat present within Study Area.

Recommended Mitigation

The following measures will assist in minimizing impacts during construction:

- OPSS 100 – General Conditions of Contract, Section GC 7.13.02 Environmental Incident Management
- OPSS 180 – General Specification for the Management of Excess Materials
- OPSS 182 – General Specification for Environmental Protection for Construction In and Around Waterbodies and on Waterbody Banks
- OPSS 804 – Construction Specification for Temporary Erosion Control
- OPSS 805 – Construction Specification for Temporary Sediment Control
- SSP 805F01 – Timing Constraints for Temporary Sediment Control Measures
- SSP 804F02 – Timing Constraints for Temporary Erosion Control Measures
- OPSS 100 – Spill Prevention and Response Contingency Plan
- OPSS 1005 – Material Specification for Aggregates – Streambed Material

- OPSS 825 – Placement of Aggregates in Waterbodies
- Where possible, organic material barriers (i.e., fibre roll barrier, sediment log, coir rolls etc.) shall be used in the drainage ditches to mitigate sediment transport.

To address structural drainage, the following measures are recommended:

- As construction proceeds, diversion swales should be graded where needed along the right-of-way boundaries to intercept drainage from external areas and direct it away from exposed surfaces.
- Temporary sedimentation traps should be sized based on 125 cubic metres per hectare of drainage area.
- All culvert work should be conducted “in the dry”.
- OPSD 219.110 and/or OPSD 219.130 - Temporary silt fencing should be installed:
  - Around sensitive vegetative features.
  - Approximately 2 metres from the final toe-of-slope for the roadway embankment widening areas.
- Runoff from excavated areas or unvegetated soil will not be permitted to discharge off site or directly into active or temporary watercourses or any natural areas.
- A temporary drainage system will be required during staging and construction where existing drainage systems will be impacted by construction work. Temporary drainage will be required along Highway 11 to maintain the existing flow patterns and minimize traffic disruptions from potential flooding during construction. This is critical to avoid ponding issues associated with traffic shifts required during construction.

6.1.6 Groundwater

The construction plan for the Project includes the raising of Penetanguishene Road by 1 metre above Highway 11 with the proposed foundation sections installed at an elevation of 255 metres above sea level, almost at the existing ground elevation. Groundwater was not encountered during the investigation to a depth of 13.5 metres below existing ground surface and groundwater is not expected to be encountered during the reconstruction of the bridge. As a result, registration on MECP’s Environmental Activity and Sector Registry (EASR) or Permit to Take Water (PTTW) are not required as dewatering during bridge reconstruction will not be required given that

reconstruction takes place above the groundwater table. Additionally, no Water-Taking Plan, Discharge Plan, or Soil and Erosion Management Plan needs to be developed for the project.

Recommended Mitigation

Application of the following standard measures will assist in minimizing impacts to groundwater:

- Implementation of best management practices during construction to alleviate the potential for spills and/or other potentially deleterious effects during construction.

6.1.7 Excess Soil and Waste / Contamination

While excavated soil will be generated from the planned construction activities it will be reused on site in the form of berm construction that will be less than 2 metres in height that will accommodate approximately 12,000 square metres of excess material.

Instruction will be included in the Contract documents to address designated substances and / or areas of contamination should they be encountered during construction.

Recommended Mitigation

The following mitigation as included in the Tender Documents will be implemented to address Designated Substances, waste management and excess soil:

- Refer to construction drawings and the Excess Soil Due Diligence Memo for potential berm locations where excess material may be reused on site.
- SSP 101F21 – Occupational Health and Safety Act Compliance
- SSP 899S01 – Management and Disposal of Materials Containing Asbestos
- SSP 110F10 – Use of Air Cooled Iron Blast Furnace Slag as Granular Material
- OC – Management of Effluent from Concrete Cutting / Grinding
- OC – Areas Used for Management of Excess Materials
- OC – Control Measures during Removal of Concrete, Concrete Repair/Construction, and Concrete Saw cutting
- OC – Management of Excess Earth with Salt Impacts
- OPSS 100 General Conditions of Contract, Section GC7.13.02 Environmental Incident Management

6.2 Socio-Economic Environment

6.2.1 Land Use and Property

All property has been acquired for this project. The MTO will obtain a Permission to Enter and Construct (PTEC), as required, for affected private properties to complete minor grading activities and driveway reconstruction.

While roads are closed to through traffic, access to the private residential driveways and area business on Penetanguishene Road will be maintained by the Contractor during construction. Should short duration disruption be required to any existing residential or business accesses, property owners will be advised in advance of the disruption regarding the scope and timelines of the work.

Recommended Mitigation

Advance consultation with local businesses regarding access considerations will be required to confirm operating hours for freight, employees and the public so as to make certain that business access is not impeded during construction.

The Contract Package will also include advanced notification to Emergency Services, affected municipalities, and Student Transportation Services prior to construction as detailed in the following Tender Document item:

- OC – Notification to Municipalities and Emergency Services
- OC – School Board Notification

6.2.2 Navigation

There are no scheduled waterways within the study area. In addition, since no in-water work is proposed there is no potential to impact the navigation of a non-scheduled waterway and an approval is not required from Transport Canada.

6.2.3 Noise

For the Traffic Noise assessment, in accordance with the MTO Guide, traffic noise levels were calculated using the United States Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) Version 3.2. Prediction model input included road traffic data (i.e. volumes, speed limit, and vehicle composition), ground characteristics (i.e. roadway surface type, topography, ground type between assessment locations and roadways, roadway layout and profile), and shielding effects (i.e. berms, barriers, housing, and topographical features).

As the subject of the Project involves modification to a freeway, the assessment of the noise levels was based on the 24-hour equivalent noise level (Leq, 24hr) as required by the MTO Guide. The road surface of the future interchange is anticipated to be asphalt and has been modeled as the “average” surface type in TNM. Other roadways were assumed to be existing asphalt surfaces have also been modeled as the “average” surface type in TNM.

To assess the noise impact, the predicted “No Project” noise levels were compared to those of the predicted “With Project” noise levels. The horizon year of 2041 was used as the basis of assessment. Road geometry and traffic data were incorporated into Traffic Noise Model to predict traffic noise levels to assess against the requirements in the MTO Environmental Guide for Noise (2022). Traffic data was provided by the design team in the form of Average Annual Daily Traffic (AADT) for the horizon year of 2041. Truck volumes were also provided as a combined heavy and medium truck percentage. The distribution between medium and heavy trucks was based upon the assumptions in the MTO Guide.

The prediction results for the “No Project” and “With Project” scenarios are presented in **Table 6**. The table also includes the assessment of the predicted noise levels against the MTO’s criteria for noise mitigation investigation. The results in **Table 6** indicate that all receptors have predicted noise levels below 65 dBA, with overall noise level changes of less than 5 dB. Therefore, a noise mitigation investigation is not warranted at any of the receptor locations in either pavement type scenarios.

Table 6: Noise Impact Assessment Summary

Receptor	2041 Predicted Traffic Noise L_{eq} (24 hr) No Project	2041 Predicted Traffic Noise L_{eq} (24 hr) With Project	Change Due to Undertaking [dB]	Mitigation Investigation (Yes/No) ≥5 dB Change	Mitigation Investigation (Yes/No) ≥ 65 dBA
NSA01_R01	51.6	51.9	0.3	No	No
NSA02_R01	56.4	56.7	0.3	No	No
NSA03_R01	60.0	59.1	-[1]	No	No
NSA04_R01	59.7	59.9	0.2	No	No
NSA05_R01	55.4	55.4	0.0	No	No
NSA05_R02	55.0	55.7	0.7	No	No

Notes to table: (1) Values from the assessment shall be rounded to the nearest whole number before the consideration of noise mitigation. (Table taken from Noise Report, AECOM, August 2026)

The noise assessment concluded that the noise levels resulting from the planned improvements do not warrant further investigation into noise mitigation measures at any of the identified receptors.

With respect to Construction Noise, it will be temporary in nature and will cease at the end of the construction activities. However, it can be a cause of disturbance to the surrounding noise sensitive areas. Although Ontario does not have any applicable regulatory noise level limits for construction noise impacts on NSAs, construction noise disturbance and potential for complaints can be reduced with the implementation of best practices and other noise control measures. The MTO Environmental Guide for Noise (2022) requires that construction noise be controlled and mitigated.

The results of the assessment indicate that the noise levels resulting from these improvements do not warrant further investigation into noise mitigation measures at any of the identified receptors, as long as construction noise mitigation is followed.

Recommended Mitigation

The following standard mitigation measures will assist in reducing the potential for adverse noise impacts during construction:

- **Standard Special Provision 199F33:**
  - Equipment Sound Emission Standards – Equipment shall comply with the sound emission standards for construction equipment outlined in Ministry of Environment, Conservation and Parks publications NPC-115 (Construction Equipment) and NPC-118 (Motorized Conveyances) which are available from the Ministry of Environment, Conservation, and Parks Client Services and Information Branch or Environmental Assessment and Permissions Branch, Phone: 416-314-8001 or 1-800-461-6290.
  - Equipment Maintenance – Equipment shall be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components, and the lubrication of moving parts.
  - Equipment Operation – Idling of equipment shall be restricted to the minimum necessary to perform the specified work. Stationary equipment shall be located as far away from sensitive locations as feasible. Where feasible, equipment with broadband backup alarms instead of the tonal backup alarms/beepers shall be utilized.
  - Noise By-law Limitations – While the Ministry does not require a noise by-law exemption, SP 199F33 stipulates the following constraints on construction noise with respect to the municipal noise control by-laws:
    - City of Barrie: A Notice of Works letter will shall be submitted to the City of Barrie for construction work undertaken during the following

hours: Quiet Zone - 5:00 p.m. of one day to 7:00 a.m. of the next day, and all day Sundays and Statutory Holidays; Residential Area – 7:00 p.m. of one day to 7:00 a.m. of the next day, and all day Sundays and Statutory Holidays.

- Township of Oro-Medonte: the contractor shall submit a Notice of Works Letter for construction within 500 feet of an occupied dwelling unit on any day between the hours 10:00 p.m. and 6:00 a.m. the next day.

– Noise Complaints – Contract Administrator is required to setup a noise complaint process in accordance with the Ministry of Transportation's Environmental Guide for Noise; and investigate and address noise complaints in accordance with the Ministry Guide. A persistent noise complaint requires a field investigation to determine noise level emissions. In this case, the contractor must contact the MTO Acoustical Specialist, who will work with contractor to verify whether the noise is caused by construction activities on site and to identify the construction equipment that causes the noise complaint. Sound level measurements for the construction equipment in question will be conducted. If noise level emissions for the construction equipment in use exceed the sound level criteria for construction equipment contained in the MECP guidelines, the contractor is required to comply with the sound level criteria.

– Best Management Practices – The following measures shall also be considered where possible:

- Avoid nighttime construction where possible;
- Use site layout where possible to screen nearby noise sensitive areas from loud construction activities, and where possible orient equipment noise emissions away from noise sensitive areas;
- Minimize the use of impact equipment;
- Line metal bins/chutes with rubber to minimize sound of falling debris;
- Use of localized mobile noise screens;
- Where multiple construction methods are available, use method with lowest noise emissions.

6.2.4 Climate Change

Climate change concerns relate to the increased concentration of greenhouse gases in the atmosphere which can result in increased temperatures worldwide ultimately resulting in extreme weather events. As part of the current undertaking consideration was given to both the potential for the project to impact climate change and the potential impact that climate change may have on the project.

The current undertaking primarily involves the improvement/replacement of existing transportation infrastructure within the Highway 11 corridor at Penetanguishene Road. The reconstruction will maintain an adequate level of service post construction and it is not expected that the emission of greenhouse gases will significantly increase over existing conditions. The project will not directly or indirectly contribute to or diminish the resilience of surrounding ecosystems to climate change.

The planned improvements also maintain an existing carpool lot that has the potential to contribute to carpooling and a reduction in the number of vehicles using the highway thereby reducing vehicular greenhouse gas emissions.

Climate change has the potential to result in increased storm events that can lead to flooding. Completion of the proposed improvements provide opportunity to review and upgrade area stormwater infrastructure which will assist in making the area less vulnerable to climate change.

Recommended Mitigation

Provisions to minimize potential impacts to climate change during construction include standard best management practices as follows:

- Minimize impacts to existing vegetation and re-vegetate where possible.
- No unnecessary idling of vehicles.

6.2.5 Air Quality

Construction activities have the potential to generate dust and fumes which can negatively impact air quality. However, these impacts will be limited to the construction period and are not considered a recurring activity. Contract provisions will minimize impacts to adjacent properties during construction (e.g., dust control measures). It is therefore not expected that construction will result in significant impact to air quality.

Recommended Mitigation

Provisions to minimize potential air quality impacts during construction include the following best management practices:

- OPSS 100 – General Conditions of Contract - GC 7.07 Application of dust suppressants to control dust generated by construction activities (as required).
- SSP 199S56 – Control of Emissions During Structural Work.
- Application of standard best management practices during construction to maintain air quality including no unnecessary idling of vehicles.
- Covering stockpiles of soil and sand.
- Regular cleaning of construction sites and access roads to remove debris and dust caused by construction.
- Application of dust suppressants to control dust generated by constriction activities (as required).

6.2.6 Snow-Drift Potential

The Assessment of Snow-Drift Potential Report indicated that mitigation measures should be considered for the segments of the right-of-way as detailed in **Table 7** and as illustrated in **Figure 13**. The report recommended the plantation of living fences of trees and shrubs to mitigate potential snowdrift. **Table 7** identifies the installation specifications (height, setback distance and length) for snow fences (permanent or temporary) and living fences (trees/shrubs).

The calculation of fetch distance for the risk estimation for each road segment does not take into account existing snow-drift mitigation measures currently in place, as these are potentially displaced or dismantled during construction works. Therefore, when showing the segments at risk and the recommended location of mitigation measures, it is pertinent to include already existing measures. As shown in **Figure 13**, most of the length of segments 1, 2 and 3 already have living fences in place. However, these fences do not cover the totality of segments 1 and 3, and gaps in the fences can create drifts that form downwind of such openings that often extend onto the road. Moreover, segment 4 is partially unprotected. The landscape design provides for extra protection (planting at the front of existing fence) in the event that present living fences are removed.

Table 7: Mitigation Measures Recommended for the Identified Segments of Non-Insignificant Risk

Segment #	Risk	Mitigation Method	Height (metre)	Setback (metre)	Length (metre)	Concerns / Notes
1	Very light	Snow fence	1.1	37	380	Snow fence and trees already exist. Planting of shrubs is recommended in areas without enough coverage
1	Very light	Trees and/or shrubs	1.2	18	380	Snow fence and trees already exist. Planting of shrubs is recommended in areas without enough coverage
2	Light	Snow fence	1.5	50	270	Snow fence and trees already exist. Planting of shrubs is recommended in areas without enough coverage
2	Light	Trees and/or shrubs	1.5	22.5	270	Snow fence and trees already exist. Planting of shrubs is recommended in areas without enough coverage
3	Very light	Snow fence	1.1	34	600*	Trees already exist. Planting of shrubs is recommended in areas without enough coverage
3	Very light	Trees and/or shrubs	1.2	18	410	Trees already exist. Planting of shrubs is recommended in areas without enough coverage
4	Very light	Snow fence	1.1	21	2,150**	Property limit is 15 metres from right of way. Planting of double row of shrubs (coniferous/deciduous) is recommended along the right of way
4	Very light	Trees and/or shrubs	1.2	18	1,180	Property limit is 15 metres from right of way. Planting of double row of shrubs (coniferous/deciduous) is recommended along the right of way

Notes: * Approximately 200 metres of this road segment would require 400 metres of oblique fencing, adding to 200 metres of parallel fencing needed for the other 200 metres of this segment.
** The whole length of this road segment (1,170 metres) would require 2,150 metres of oblique fencing.
*** Minimum required shrub height is 1.8 metres (up from 1.2 metres) to compensate the reduced setback.

Figure 13: SRS Snow-drift Risk and Existing Living Fences



In consideration of the Snowdrift Assessment it was determined that the recommended measures will be implemented along Segment 4, including the planting of a double row of coniferous/deciduous shrubs within the ROW, with a minimum shrub height of 1.8 metres. The Landscaping drawings prepared for this assignment were developed in coordination with Snowdrift Assessment mitigation and the terrestrial ecosystem review recommendations.

Recommended Mitigation

The following measures will assist in minimizing impacts related to snowdrift:

- Refer to Landscape drawings for locations requiring plantation of living fences of trees and shrubs to mitigate potential snowdrift.
- NSSP LAND0001 – Construction Specification for Planting
- OC – Construction Specification for Planting

6.3 Cultural Environment

6.3.1 Archaeological Resources

Following completion of the Stage 1-3 Archaeological Assessment and Stage 4 mitigation for Location 3 (BcGv-63), the project Study Area is considered cleared of archaeological concerns.

Recommended Mitigation

The contractor will be required to follow the direction as outlined in OPSS 100 General Conditions of Contract, Section GC 3.07.05:

- In the event that previously unknown or unassessed deeply buried archaeological resources are uncovered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the MTO representative who will confirm the need to engage a licensed consultant archaeologist to carry out any archaeological field work, in compliance with Section 48 (1) of the Ontario Heritage Act.
- In the event that human remains are encountered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the MTO representative who will notify the police, coroner and the Registrar of the Bereavement Authority of Ontario.

6.3.2 Built Heritage Resources

Based on the results of the CHER, including the evaluation of the property at 548 Penetanguishene Road utilizing O. Reg. 9/06 and O. Reg. 10/06, it was determined that the subject property does not have CHVI at the local level and is not considered a Provincial Heritage Property. No further heritage reporting or mitigation measures are required.

Landscape drawings have been prepared to satisfy the commitments identified in the preceding TESR with regard to the planting of various trees/shrubs in proximity to several heritage resources within the study area to reduce potential visual, air (dust) and noise impacts from the transportation facilities.

6.4 Transportation and Other Infrastructure

6.4.1 Utilities

Anticipated impacts to existing utilities within the project limits and the planned mitigation is summarized below:

- **Bell:** Existing overhead and underground infrastructure located on Penetanguishene Road (east and west of Highway 11) and at the existing MTO Carpool Lot. Relocation of two Bell poles and guy pole is required as it is in conflict with proposed east ramp terminal. This will include Bell FOC dip, pedestal relocation, and a Bell MH collar adjustment.
- **Hydro:** Existing overhead and underground infrastructure located on Penetanguishene Road (east and west of Highway 11) and at the existing MTO Carpool Lot. Hydro pole and street lighting service pole in conflict with our Penetanguishene Road grading. Relocation will be required.
- **Enbridge:** Existing underground infrastructure is present on Penetanguishene Road (east of Highway 11). Relocation may be required in the vicinity of the Gore Road / Napoleon Road intersection.

6.4.2 Lane Restrictions/Closures

Staging will be required to facilitate the construction of the new bridge, interchange ramps, and reconstruction of Highway 11 and Penetanguishene Road. A detailed staging plan has been developed for the project.

Recommended Mitigation

In order to safely accommodate traffic and complete construction in a timely and efficient manner, construction staging will be implemented to facilitate the proposed improvements and keep impacts to traffic flow to a minimum. A signed detour route will be required for any ramp closures and the closure of Penetanguishene Road.

6.5 Summary of Environmental Concerns, Mitigating Measures and Commitments

The proposed mitigation measures and commitments to future work to address specific concerns associated with the detail design are listed in **Table 8**.

Table 8: Summary of Environmental Concerns, Mitigation Measures and Commitments

ID #	Environmental Element / Concern and Potential Impact	Concerned Agencies	ID#	Details/Mitigation Mitigation/Protection/Monitoring/Future Commitments
1.0	General	MTO / MECP / MNR / NVCA	1.01	OC - General Environmental Protection
			1.02	OPSS 100 - General Conditions of the Contract
2.0	Erosion & Sediment Control	MTO / MECP / MNR / NVCA	2.01	OPSS 802 - Construction Specification for Topsoil
			2.02	OPSS 803 – Construction Specification for Vegetative Cover
			2.03	OPSS 804 - Construction Specification for Temporary Erosion Control
			2.04	OPSS 805 - Construction Specification for Temporary Sediment Control
			2.05	OC - Erosion and Sedimentation Control
			2.06	SSP 805F01 - Timing Constraints for Temporary Sediment Control Measures
			2.07	SSP 804F02 - Timing Constraints for Temporary Erosion Control Measures
3.0	Vegetation Communities & Designated Environmental Areas	MTO / MECP / MNR / NVCA / MUN	3.01	Refer to Landscaping drawings for vegetation restoration
			3.02	OPSS 201 - Clearing, Close Cut Clearing, Grubbing, and Removal of Surface and Piled Boulders
			3.03	OPSS 801 - Construction Specification for the Protection of Trees
			3.04	OPSS 802 - Construction Specification for Topsoil
			3.05	OPSS 803 - Construction Specification for Vegetative Cover
			3.06	OPSS 804 - Construction Specification for Temporary Erosion Control
			3.07	OPSS 805 - Construction Specification for Temporary Sediment Control
			3.08	OC - Control of Emerald Ash Borer Infestation and Management of Host Trees
			3.09	NSSP - Invasive and Noxious Vegetation Disposal and Burial
			3.10	OPSS 180 – General Specification for the Management of Excess Materials
			3.11	SP Requirements for Excavation, Removal and Disposal and/or Burial of Invasive and Noxious Vegetation
4.0	Wildlife, Terrestrial Species at Risk	MTO / MECP / MNR / NVCA	4.01	OC - Migratory Bird Protection - General
			4.02	OC - Wildlife Protection - General
			4.03	OC - Prevention of Wildlife Harassment
			4.04	OC - Protection of Species at Risk – to address: Stockpile Nesting; SAR Bats; Amphibian/Reptile Exclusion Fencing; and SAR Birds (540 Penetanguishene Road to remain fallow) & details applicable timing windows – avoid breeding bird season (April 1 to August 31); avoid bat maternity roosting window (April 1 to November 30).
5.0	Fish and Fish Habitat	MTO / DFO / MECP / MNR / NVCA	5.01	OPSS 182 - General Specification for Environmental Protection for Construction In and Around Waterbodies and on Waterbody Banks
			5.02	OPSS 804 - Construction Specification for Temporary Erosion Control
			5.03	OPSS 805 - Construction Specification for Temporary Sediment Control
6.0	Drainage/Hydrology & Surface Water	MTO / MECP / NVCA	6.01	OPSS 100 - General Conditions of Contract, Section GC 7.13.02 Environmental Incident Management
			6.02	OPSS 180 - General Specification for the Management of Excess Materials
			6.03	OPSS 182 - General Specification for Environmental Protection for Construction In and Around Waterbodies and on Waterbody Banks
			6.04	OPSS 804 - Construction Specification for Temporary Erosion Control
			6.05	OPSS 805 - Construction Specification for Temporary Sediment Control
			6.06	SSP 804F02 - Timing Constraints for Temporary Erosion Control Measures
			6.07	SSP 805F01 - Timing Constraints for Temporary Sediment Control Measures
			6.08	OPSD 219.110 Light Duty Silt Fence Barrier; OPSD 219.130 Heavy Duty Silt Fence Barrier
			6.09	OPSS 1005 - Material Specification for Aggregates Streambed Material
			6.10	OPSS 825 – Placement of Aggregates in Waterbodies
7.0	Groundwater	MTO / MECP	7.01	Best Management Practices to alleviate the potential for spills and/or other potentially deleterious effects during construction.

ID #	Environmental Element / Concern and Potential Impact	Concerned Agencies	ID#	Details/Mitigation Mitigation/Protection/Monitoring/Future Commitments
8.0	Land Use and Property	MTO / MUN / EMS	8.01	OC - Notification to Municipalities and Emergency Services
			8.02	OC - School Board Notification
9.0	Noise	MTO / MECP / MUN	9.01	SSP 199F33 - Construction Noise Constraints – Noise Sensitive Areas
10.0	Climate Change	MTO / MECP / MUN	10.01	Minimize impacts to existing vegetation and re-vegetate where possible.
			10.02	No unnecessary idling of vehicles
11.0	Air Quality	MTO / MECP / MUN	11.01	OPSS 100 - General Conditions of Contract
			11.02	SP 199S56 - Control of Emissions During Structural Work
			11.03	Application of standard best management practices during construction to maintain air quality including no unnecessary idling of vehicles
			11.04	Covering stockpiles of soil, sand and aggregate
			11.05	Regular cleaning of construction sites and access roads to remove debris and dust caused by construction.
			11.06	Application of dust suppressants to control dust generated by constriction activities (as required).
12.0	Landscaping	MTO / MECP / NVCA	12.01	NSSP LAND0001 - Construction Specification for Planting
			12.02	OC - Construction Specification for Planting
			12.03	OPSS 802 - Construction Specification for Topsoil
			12.04	OPSS 803 - Construction Specification for Vegetative Cover
			12.05	OPSS 804 - Construction Specification for Temporary Erosion Control
			12.06	OPSS 805 - Construction Specification for Temporary Sediment Control
13.0	Contamination & Waste Management	MTO / MECP / MUN	13.01	SP ENVR0014 – Amendment to OPSS 180, November 2016 - Compliance With Ontario Regulation (O. Reg.) 406/19 for On Site and Excess Soil Management
			13.02	SSP 101F21 - Occupational Health and Safety Act Compliance - List of Designated Substances
				SSP 899S01 – Management and Disposal of Materials Containing Asbestos
			13.03	SSP 110F10 - Use of Air Cooled Iron Blast Furnace Slag as Granular Material
			13.04	OC - Management of Effluent from Concrete Cutting / Grinding
			13.05	OC - Areas Used for Management of Excess Materials
			13.06	OC - Control Measures during Removal of Concrete, Concrete Repair/Construction, and Concrete Sawcutting
			13.07	OC - Management of Effluent from Concrete Cutting / Grinding
			13.08	OC - Management of Excess Earth with Salt
			13.09	OPSS 100 General Conditions of Contract, Section GC7.13.02 Environmental Incident Management
14.0	Archaeological Resources	MTO / MCM	14.01	OPSS 100 General Conditions of Contract, Section GC 3.07.05: ■ In the event that previously unknown or unassessed deeply buried archaeological resources are uncovered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the MTO representative 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. ■ In the event that human remains are encountered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing, according to subsection GC 7.11, Suspension of Work. The CA will contact the MTO representative who will notify the police, coroner and the Registrar of the Bereavement Authority of Ontario.

Legend: MTO – Ministry of Transportation
MNR – Ministry of Natural Resources
MECP – Ministry of the Environment, Conservation and Parks
MCM – Ministry of Citizenship and Multiculturalism
MUN – City of Barrie, County of Simcoe, Township of Oro-Medonte
NVCA – Nottawasaga Valley Conservation Authority
EMS – Emergency Services

7. Monitoring

7.1 Construction Monitoring

During the completion of the Detail Design, the contract drawings and specifications were developed to allow the project to be tendered for construction. There is a possibility that minor design modifications or refinements may be required as a result of recommendations made by the Contractor, which could result in environmental benefits or impacts that may not have been anticipated or identified in this document. Should this occur, the modifications are not anticipated to alter the basic intent of the undertaking. Pertinent changes resulting from significant design modifications/refinements will be discussed with MTO staff and appropriate external agencies prior to construction, as deemed necessary.

During construction, monitoring and on-site inspection should be undertaken to ensure that implementation of the mitigation measures and key design features comply with the DCR, permits and approvals, as applicable, and the contract documents, and to monitor the effectiveness of mitigation measures, including the need for additional measures or management, where needed.

Monitoring measures will include:

- The inspection of implemented mitigation measures to ensure that they are installed as per the specification and effective.
- Where mitigation measures are not in compliance, deficiencies will be noted in a monitoring log and recommendations for corrective actions will be provided to the Contract Administrator.
- Mitigation measures are maintained and any necessary repairs completed quickly; and
- Additional mitigation measures are provided, as required, for any unanticipated environmental concerns that may develop during construction.

7.2 Contract Administration

Contract Administration for this project will ensure effective translation of measures to protect environmental sensitivities. It is noted that environmental effects can be mitigated through implementation of Best Construction Management Practices, as provided in the OPSSs, and SSPs and NSSPs contained in the Contract Package, and implementation of the prescribed Construction Monitoring.

An Environmental Inspector will ensure that the environmental protection measures outlined in this report and in the subsequent contract document/specifications are carried out. In the event that issues arise, appropriate MTO and external agency representatives will be contacted to provide additional input and to address specific notification requirements as may be required under specific legislation.