

MTO Project Reference:
G.W.P. 4077-20-00

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Design and Construction Report

Highway 62 and Prince Edward
County Road 1 Intersection
Improvements

September 2026

Design and Construction Report (DCR)

DETAIL DESIGN AND CLASS ENVIRONMENTAL ASSESSMENT STUDY

Highway 62 and Prince Edward County Road 1 Intersection Improvements
(Project Reference: G.W.P. 4077-20-00)

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1.0 Overview of the Undertaking

1.1 Background and Project Location

The Ontario Ministry of Transportation (MTO) has retained Stantec Consulting Ltd. to undertake a Detail Design, and Class Environmental Assessment (Class EA) Study for intersection improvements at Highway 62 and Prince Edward County Road 1, in Huff's Corners in Prince Edward County. The Preliminary Design and Class EA for intersection improvements at Highway 62 and County Road 1, completed in 2024, identified a roundabout as the Recommended Plan. This Detail Design study included design refinements to the roundabout Recommended Plan, development of construction staging plans, consultation, and development of environmental protection and mitigation measures. The Study Area includes the intersection at Highway 62 and County Road 1, as shown in **(Figure 1)**.

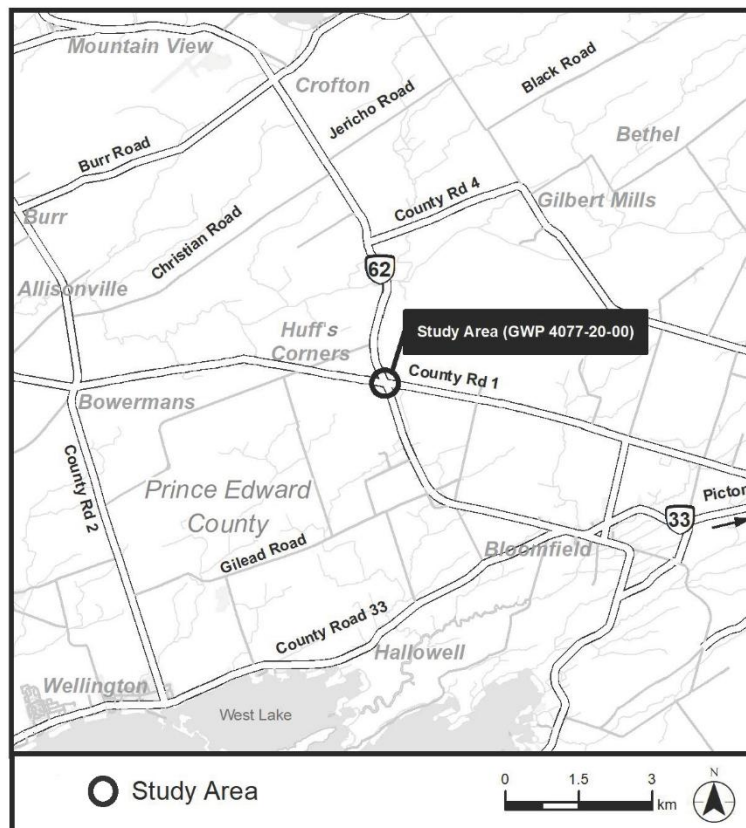


Figure 1: Study Area



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This study is being carried out as a Group 'B' project under the MTO *Class Environmental Assessment for Provincial Transportation Facilities (2000)*.

This *Design and Construction Report* (DCR) details the decision-making process leading to the design and strategy for the improvements and traffic management plans, potential environmental effects and the final mitigation plan.

1.2 Purpose of the Design and Construction Report

This DCR documents the Detail Design for the improvements to the Highway 62 and Prince Edward County Road 1 intersection in the Study Area, and has been prepared to:

- Address any minor design modifications that result in environmental impacts or benefits that may not have been anticipated or detailed in the Preliminary Design documentation
- Further assess environmental impacts and refine mitigation measures
- Address any commitments to future work identified in the Preliminary Design documentation

If it is necessary to make significant changes to the commitments outlined in the DCR, or to any concept of any portion of the project, an Addendum to the DCR may be required. Any changes that may arise will be discussed with the most affected parties. If all parties can be identified and those parties agree that an Addendum is not required, then none will be prepared. If an Addendum is required, appropriate documentation will be prepared and filed in the Public Record for at least 30 calendar days.

1.2.1 Environmental Assessment Process

1.2.1.1 Ontario Environmental Assessment Act

The Ontario *Environmental Assessment Act* governs the conduct of planning studies in the province of Ontario. The purpose of this Act is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation, and wise management in Ontario of the environment (*EA Act*, R.S.O. 1990, c. E. 18, s. 2).

The Act mandates clear terms of reference and ongoing consultation with all relevant parties and establishes a 'Class Environmental Assessment' process to streamline the planning for certain types of projects.



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1.2.1.2 Class Environmental Assessment for Provincial Transportation Facilities

MTO's *Class Environmental Assessment for Provincial Transportation Facilities* (2000) (Class EA) was approved under the Ontario *Environmental Assessment Act* in 1997 and was amended in 2000. The MTO Class EA process is an approved process for highway planning, design, and construction projects. This study was originally initiated under the Class Environmental Assessment for Provincial Transportation Facilities (2000) in 2022, prior to the establishment of the 2024 Class EA, which is approved under the Ontario *Environmental Assessment Act* for provincial transportation projects of a defined scope and magnitude. This project has continued to follow the 2000 Class EA process.

The planning document defines groups of projects and activities, and the Environmental Assessment (EA) processes that MTO has committed to follow for these projects. Provided that this process is followed, projects and activities included under the Class EA do not require formal review and approval under the *Environmental Assessment Act*.

This project has followed the approved planning process for Group 'B' projects, which include improvements to existing highways and freeways, new interchanges, or modifications to traffic access, improvements to provincial transitways and ferryboat docks/terminals, and the establishment/improvement of provincial transportation facilities.

1.2.2 Notice of Completion – Design and Construction Report

A Notice of Completion was placed in the *Picton Gazette and Picton County Weekly News* newspaper concurrent with filing of the DCR. The purpose of the notice is to inform the public that a DCR documenting the Detail Design and associated environmental protection measures has been prepared and will be available from **September 25, 2026, to October 26, 2026**, for a 30-day public review period.

A Notice is provided to identify ways to review the Design and Construction Report, including on the project website, www.hwy62pec1.ca.

Interested persons may provide written comments to the project team by October 26, 2026. Please visit our project website at www.hwy62pec1.ca to obtain additional information about the project or to provide comments. Comments can also be emailed to comments@Hwy62PEC1.ca.



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comments@hwy62pec1.ca

Outstanding concerns are to be directed to the proponents listed above for a response, unless the outstanding concerns are regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, in which case Section 16 requests on these matters should be addressed in writing to:

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

and

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

2.0 Consultation Process

The main objective of consultation in the Class EA process is to ensure that project information is shared in a meaningful way and that consideration is given to all aspects of the environment from the earliest stages of planning. To achieve this, a variety of communication strategies were used to engage the public, agencies, interest groups, property owners, and community members. Numerous opportunities for input were provided at key points during the study process, including one in-person Public Information Centre (PIC). In addition, direct contact with the Project Team via mail, email, and phone was encouraged throughout the study.

An outline of the public consultation activities is provided in **Appendix A**.



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2.1 Project Website

The Preliminary Design project website (<https://www.hwy62pec1.ca>) was updated and utilized to function as an interactive tool for the Project Team to provide Detail Design study updates, and to provide an opportunity for stakeholders to submit comments during the Detail Design study. The website includes a Home page, and pages with information on the Class EA process, project schedule, relevant documentation, accessibility, and contact information.

2.2 Notice of Study Commencement

As part of this project, a contact list was developed to identify provincial and municipal agencies, stakeholders, and interest groups that were expected to have interest in the study. A Notice of Study Commencement was prepared for distribution to notify the public and those on the existing contact list of the detail design stage. The Notice of Study Commencement was distributed, as follows:

- A letter and the Notice were emailed to the local MPP on December 8, 2025.
- Letters attached with the Notice were sent by MTO to Indigenous communities December 8, 2025.
- The Notice was emailed to those on the Contact List on December 17, 2025.
- The Notice and Project Information Form were emailed to the Ministry of the Environment, Conservation and Parks (MECP), Eastern Region, on December 22, 2025.
- The Notice was published in *Picton Gazette* and *Picton County Weekly News* in English on December 18, 2025.

Copies of the notification materials and contact list are provided in **Appendix A**.

2.3 Indigenous Consultation and Engagement

MTO sent the Notice of Study Commencement on December 8, 2025, and the Notice of Public Information Centre, on August 4, 2026, to the following Indigenous communities via email:

- Curve Lake First Nation
- Alderville First Nation
- Hiawatha First Nation
- Mohawks of the Bay of Quinte
- Mississaugas of Scugog Island First Nation



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Copies of the notification materials are provided in **Appendix A**. The comments acknowledged receipt of the Notice materials. Comments were addressed by MTO. Copies of the correspondence are provided in **Appendix B**.

Additional consultation with Indigenous communities was conducted on April 15, 2026, including an invitation to participate in terrestrial field investigations within the Study Area. An invitation to participate in Stage 1-2 archaeological assessment fieldwork was also extended to Indigenous communities on June 18, 2026. The engaged Indigenous communities did not participate in field investigations due to lack of staff availability.

2.4 Consultation with External Agencies and Stakeholders

A summary of external agency and stakeholder consultation is provided in **Table 1** and copies of the correspondence are provided in **Appendix B**.

External agencies were sent the Notice of Study Commencement on December 22, 2026, and Notice of Public Information Centre on August 18, 2026. The agencies that were notified include:

- Ministry of Citizenship and Multiculturalism
- Ministry of Natural Resources and Forestry, Peterborough District
- Ministry of the Environment, Conservation and Parks - Peterborough District
- Prince Edward County
- Quinte Conservation Authority
- Ontario Provincial Police, Prince Edward County Detachment
- Prince Edward County Fire Department
- Hastings Quinte Paramedic Services (HQPS)
- Hastings and Prince Edward District School Board
- Algonquin and Lakeshore Catholic District School Board
- Central East Catholic School Council (CECCE)
- Tri-Board Student Transportation Services
- Prince Edward County Chamber of Commerce



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- Ontario Trucking Association
- Ontario Federation of Agriculture
- Prince Edward Federation of Agriculture



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Table 1: External Agency and Stakeholder Correspondence

Contact Information	Input
Regional Environmental Planner Ministry of Environment, Conservation and Parks	Comment received via email on December 22, 2025: Thanked Stantec for the Notice of Study Commencement.
Regional Planner Ministry of Natural Resources	Comment received via email on December 22, 2025: Acknowledged the receipt of the Notice of Study Commencement and provided a MNR Southern Region Information Package- For External Proponent Environmental Assessments. The package was distributed to Stantec to help with understanding MNR's role as a commenting agency and interests related to environmental assessment within the Ministry's mandate.
Heritage Planner Ministry of Citizenship and Multiculturalism	Comment Received via email on September 14, 2026 Acknowledge receipt of the Notice of PIC and recommended Stantec to submit the Stage 1-2 AA to MCM for review prior to the issuance of the notice of completion. MCM also provided recommendations regarding entering the report into the registrar. MCM stated that the results of the AA should be summarized in the report, including summary of the work completed, recommendations for next steps, and clear commitments to undertake any further AA stages recommended. MCM also requested to be advised if the area had been screened for built heritage or cultural heritage landscapes and highlighted the importance of engagement with the community and Indigenous communities. MCM also stated that the findings of the technical cultural heritage studies should be summarized within the DCR or if there are no cultural heritage resources, to state that.



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2.5 Prince Edward County Planning and Development Committee Meeting

Stantec and MTO presented the Public Information Centre (PIC) Displays to the Prince Edward County Planning and Development Committee on August 19, 2026. There was a discussion regarding the conceptual landscape plan and interest in utilizing native and salt-tolerant plant species.

2.6 Consultation with the Public

An Ontario Government Notice (OGN) for the Notice of Study Commencement (NOSC) was produced to provide information on the proposed improvements, study process, project schedule, and a link to the project website. The OGN was produced and distributed in English.

Emails with the OGN attached were sent to contacts on the study mailing list, including local businesses and property owners, on December 17, 2025. The OGN was also published in English in the *Picton Gazette* and the *Picton County Weekly News*, on December 18, 2025.

Twenty-two (22) comments were received by March 6, 2026, from members of the public following the NOSC. The comments discussed wanting to implement the roundabout, requesting to be included in the mailing list, and previous traffic collisions at the intersection. The public also had comments regarding the design of the roundabout, including the restoration of plants, ensuring the elm tree nearby would not be removed, and suggesting the roundabout to be double laned. Members also suggested that traffic lights may be more effective than a roundabout in this area. Responses were sent by March 15, 2026. Correspondence can be found in **Appendix B**.

A Notice of Public Information Centre (PIC) was produced to inform the public about the in-person PIC. Emails with the OGN attached were sent to contacts on the study mailing list, including local businesses and property owners, on August 18, 2026. The OGN was also published in English in the *Picton Gazette* and the *Picton County Weekly News*, on August 20, 2026.

2.7 Public Information Centre

The in-person PIC was held on September 1, 2026, at the Wellington and District Community Centre in Wellington Ontario. The purpose of the PIC was to generally present and gather input on refinements to the Recommended Plan, construction



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staging, the conceptual landscape plan, and environmental protection and mitigation measures.

The notice and cover letter were sent via mail and email to the MPP for Bay of Quinte on August 6, 2026, and to representatives of external agencies, businesses, and members of the public on August 19, 2026. A hard copy of the notice was also sent to approximately 7,662 residents and business owners during the week of August 20, 2026, via Canada Post unaddressed admail.

Notices to advise the public of the PIC were published in the following papers:

- *Picton Gazette* (August 20, 2026)
- *Picton County Weekly News* (August 20, 2026)

The cover letter and Notice of PIC provided information about the PIC, including its purpose, date of uploading of the PIC, as well as information on accessing the presented materials on the study website.

Comments regarding the PIC presentation were requested to be submitted by September 16, 2026.

In total, sixteen (16) letters and emails were received following the PIC and by the requested submission date of September 16, 2026. Additionally, a comment form was available at the PIC. In general, comments included support for the project, concerns regarding dust during construction, and accommodation for larger vehicles and agricultural vehicles. Comments received at the PIC are provided in **Appendix B**.

A copy of the information displayed at the PIC is provided in **Appendix A**.

3.0 Description of the Recommended Plan and Environmental Assessment Requirements

3.1 Project Description

3.1.1 Roundabout

The project replaces the existing Highway 62 and Prince Edward County Road 1, two-way stop control intersection with a single lane roundabout, to improve safety and traffic operations. The design includes the following main components:



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- Construction of a single lane roundabout. The approaches have been designed to improve the existing skew of the intersection and the curve radii have been designed to gradually slow vehicles down when approaching the roundabout.
- Mountable curbs and a paved shoulder on the outside of the roundabout to accommodate farm vehicles.
- Installation of raised concrete splitter islands on all approaches. The splitter islands have been designed to maintain full access to adjacent properties.
- New roadway illumination at the roundabout and approaches.
- New drainage system for the roundabout consisting of catch basins along curbed sections of the roundabout and approaches. Existing culverts impacted by the work will be replaced. Existing ditches will be retained where possible and new sections of ditches are added as required by the new design layout.
- Landscaping will be located within the roundabout central island and along the approaches.
- New signage to advise drivers of the roundabout.
- Utility relocations to facilitate the new roundabout footprint.



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Figure 2: Recommended Plan



A copy of the Recommended Plan is in **Appendix D**.

3.1.2 Illumination

The electrical design for the project is intended to enhance the lighting at the roundabout and ensure compliance with Ministry policy for roundabout lighting. The existing lighting will be revised to provide optimal illumination of the roundabout.

Temporary lighting will be provided during construction to provide appropriate illumination levels for traffic management.

The existing MTO power supply cabinet that feeds the existing intersection lighting will be retained and will be utilized to feed the new illumination.

3.1.3 Drainage

The new roundabout requires the addition of two new centerline culverts at the roundabout and the extension of one culvert on Highway 62 south of the intersection.



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Several entrance culverts will be added to support the new drainage system. Existing entrance culverts made redundant by the new layout will be removed. Catch basins will provide drainage in the curbed sections of the roundabout.

Outside of the curbed sections of the roundabout drainage flow will be conveyed to ditches.

Modifications as part of the new roundabout will result in a similar imperviousness to the existing conditions. The existing drainage system utilizes ditches and culverts to direct flow towards outlets. The new drainage system is designed to integrate into the existing roadside ditches beyond the site limits.

3.1.4 Landscape Architecture

The Conceptual Landscape Plan recommends preserving and protecting large healthy trees, and adjacent private vegetation and compensation with new trees where removals are required and unavoidable.

Proposed vegetation within the Conceptual Landscape Plan includes:

- Locate new plantings in accordance with roadway requirements to maintain adequate sight distances and visibility to the roundabout approaches. Adhere to the landscape guidelines laid out in the TAC Canadian Roundabout Design Guide (2017). Maintain a 600mm (max.) height within critical visibility areas.
- Locate new plantings in accordance with Hydro One tree planting guidelines.
- Select urban and salt tolerant low maintenance native species appropriate to the rural setting.
- Maintain frame sightlines to existing commercial signs (permanent) and commercial and residential access lane(s).
- Consider roadside salt tolerant and native grass/ wildflower seed mixes.
- Screen private residences from the roadway as desired by the local resident(s).

Disturbed forest/ woodlot edges to be reinstated/ planted with a diverse selection of native reforestation plantings appropriate to the local soil and roadside conditions including salt and drought tolerance.

Following the DCR comment period, refinements will be made to the Conceptual Landscape Plan based on input received from the public and refinements from the project team.

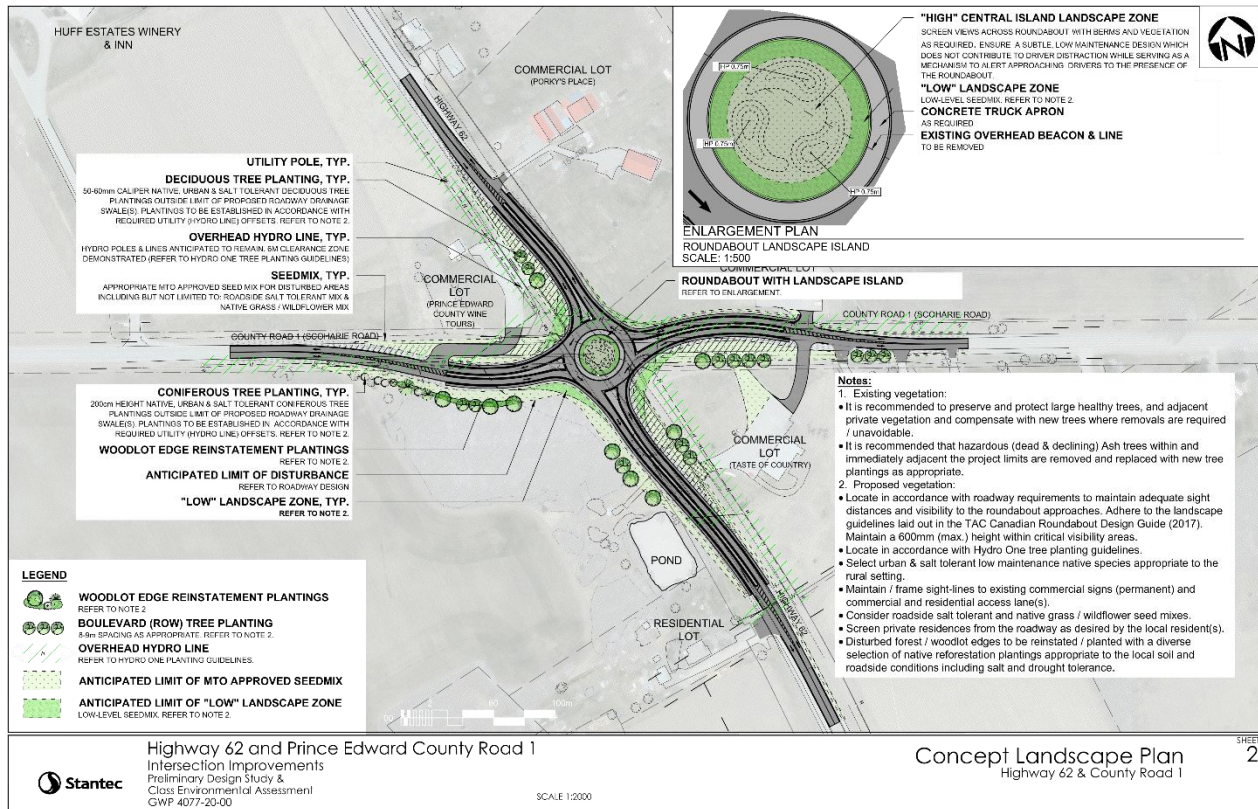


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Figure 3: Conceptual Landscape Plan



A copy of the Conceptual Landscape Plan is in **Appendix D**.

3.1.5 Entrances

The roundabout will impact four existing entrances on Highway 62 and six existing entrances on County Road 1. A summary of the impacted entrances is provided in **Table 2**.



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Table 2: Entrance Modifications

Location (Station)	Side of Road	Entrance Type	Comment
Highway 62			
15+075	West	Residential	Maintain existing entrance with minor adjustments
15+203	West	Field	Maintain existing entrance with minor adjustments (right in / right out only due to splitter island)
15+420	East	Residential/Commercial	Maintain existing entrance with minor adjustments
15+423	West	Field	Maintain existing entrance with minor adjustments
County Road 1			
9+900	North	Commercial (Prince Edward County Wine Tours parking lot)	Existing entrance relocated to end of new splitter island on west approach to roundabout
10+100	South	Commercial (Taste of Country Market)	Existing entrance relocated to end of new splitter island on east approach to roundabout
10+140	North	Alota Tile & Veenstra + Lloyd's Plumbing	Maintain existing entrance with minor adjustments
10+170	South	Residential	Maintain existing double entrance with minor adjustments
10+200	South	Residential	



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Location (Station)	Side of Road	Entrance Type	Comment
10+240	South	Residential	Maintain existing entrance with minor adjustments

3.1.6 Signage

Signage will be provided alerting drivers that they are approaching a roundabout and advising them to reduce their speed. Directional guide signs will be provided on all legs of the intersection showing the exits, road names and where the exit will take the driver to.

3.1.7 Utilities

Utility relocations are required to accommodate the new roundabout. Enbridge, Bell Canada and Hydro One have been consulted and will be relocating their services that conflict with the work in advance of construction.

MTO Electrical services the overhead flashing amber beacon crossing Highway 62 and this will be removed during construction staging.

3.2 Construction Staging

Staged construction of the work will be completed to facilitate the construction of the roundabout while maintaining traffic operations as much as possible. It is anticipated construction will be staged as follows:

Stage 1 – Temporary roadway widening to provide additional road width to allow traffic to be shifted to facilitate construction of the new roundabout approaches.

Stage 2 – Traffic will be shifted to the newly constructed sections of the roadway to allow remaining sections of the approach roads to be constructed. New accesses will be constructed.

Stage 3 – Tie ins to the existing roadway on each approach road will be constructed.

Stage 4 – Splitter islands, shoulders and the central island will be constructed. Final paving will be completed.

Accesses and driveways will be maintained during construction.



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Highway 62 and Prince Edward County Road will remain open throughout construction. At times there may be short duration overnight closures at the intersection required to facilitate paving works. There will be daytime single lane closures with flagging to maintain two-way traffic. Advance signage on the highway will provide drivers will advance warning of construction work.

3.3 MTO Class EA Applicability and Other Legislative Requirements

This project is subject to Ontario's *Environmental Assessment Act* (EA Act) and is being carried out in accordance with the requirements of the *Class Environmental Assessment for Provincial Transportation Facilities* (2000) as a Group 'B' project. Group 'B' projects are considered approved, subject to compliance with the Class EA. The extent of consultation required for a Group 'B' project is based on the scope of work and anticipated impacts.

4.0 Environmental Issues, Commitments and Mitigation Measures

This section focuses on the direct and indirect environmental effects associated with the construction of the proposed improvements. In general, impacts to the natural, social, and cultural environment were minimized during planning and design by following these three principles:

- Avoidance
- Identification of roadway design elements at key locations that can minimize environmental impacts
- Development of generic environmental protection plan guidelines for consideration during and following construction

The design, construction, and operation/maintenance phases of this project involve typical activities for which potential environmental impacts are predictable and known environmental protection measures are applied.

All commitments made during Preliminary Design have been reviewed and addressed. Details on how environmental impacts will be mitigated, either using environmental design or through environmental constraints contained in the contract package, are included in the following sections.



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The design, construction, and operation/maintenance phases of this project involve typical activities for which potential environmental impacts are predictable and known environmental protection measures are applied. Details on how environmental impacts will be mitigated, either through the use of environmental design or through environmental constraints to be included in the construction contract package, are summarized in **Table 4** at the end of this report.

4.1 Natural Environment

The existing environmental features described in the Preliminary Design documentation were taken into consideration during this study and updated based on supplementary field investigations and background studies undertaken in the Fall of 2025, Spring and Summer of 2026.

Background information and habitat characteristics were summarized in a *Terrestrial Ecosystem Existing Conditions and Impact Assessment Report* (2026), which is on file with the Ministry.

4.1.1 Terrestrial Ecosystems

Field investigations were undertaken by Stantec on November 28, 2025, and May 28 and June 29, 2026, to fulfill environmental commitments identified during Preliminary Design, including:

- Targeted leaf off bat habitat assessments
- Searches for Pileated Woodpecker nests
- Updates to vegetation communities as needed
- Additions to the botanical inventory
- Targeted Breeding Bird surveys
- SAR habitat assessments
- Bat acoustic surveys and bat habitat assessment
- Incidental wildlife observations



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4.1.2 Vegetation Communities

Existing Conditions

The Highway 62 and County Road 1 intersection Study Area is primarily comprised of active agricultural lands of annual row crops, vineyards, and orchards as well as disturbed meadows, fragmented deciduous forests, and developed areas.

The forest habitat in the Study Area within the southwest corner of the intersection, was classified as a Fresh-Moist Green Ash-Hardwood Lowland Deciduous Forest. Mixed meadow vegetation communities also occurred either within the MTO Right-of-Way (ROW) or just outside.

The developed portion of the Study Area was primarily composed of active agriculture along with rural residential and commercial properties.

The following is a floristic summary for the Highway 62 and County Road 1 intersection Study Area based on botanical assessments carried out in September 2022 and May/June 2026:

- Forty (40) species of vascular plants were recorded. This total includes taxa identified to species, subspecies (ssp.) and variation (var.) levels.
- Sixteen (16) of the Forty (40) recorded species are native to Ontario and 23 are introduced species not native to Ontario.
- Eleven (11) native species have a provincial rank of S5, indicating they are common with a secure population in Ontario.
- Two (2) native species have a provincial rank of S4, indicating they are uncommon to common, but not rare in the province and populations are apparently secure.
- There were no provincially rare species (i.e., S1-S3) observed in the Study Area.
- There were no Species at Risk (SAR) observed (e.g., butternut, black ash).
- There were no highly sensitive native plant species with a high coefficient of conservatism value of 8, 9 or 10 observed in the Study Area.

All vegetation communities observed were common and widespread throughout Ontario.



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Potential Impacts

It is anticipated that the proposed works will disturb approximately 0.87 ha of vegetation cover and terrestrial habitat during construction. There will be temporary and permanent loss or disturbance to native vegetation communities because of the clearing required to accommodate construction activities (i.e., excavation, demolition, staging).

The following indirect impacts may also occur as a result of construction:

- Accidental damage or loss of trees and other vegetation features because of site alteration or construction activities.
- Temporary disturbance of noise, vibration, and vegetation removal to terrestrial wildlife habitat.
- Erosion and sedimentation into adjacent vegetation communities.
- Permanent loss of native vegetation due to the spread of non-native and invasive vegetation species into disturbed areas after construction.

Proposed Mitigation

During construction adjacent to vegetated areas, heavy equipment could damage peripheral vegetation from contact, excavation, and/or soil compaction. In areas where trees are present adjacent to construction activities that are not required to be removed for grading, tree protection is recommended to avoid encroachment.

Post-construction seeding of the disturbed ROW should be done as soon as possible after construction, and sediment fencing should remain until vegetation cover is restored.

Vegetation removal should be undertaken outside of the migratory bird nesting period (i.e., April 1 to August 31).

Vegetation protection measures in **Section 5.0, I.D. 2.0**, are also recommended to reduce indirect impacts to lowland forests/wetlands. Trees will be replanted as part of the proposed Conceptual Landscape Plan to help compensate for some of the tree removal required as part of the Recommended Plan.

4.1.2.2 Wetlands

The background review identified an unevaluated wetland within the community within the southwest quadrants of the proposed roundabout. Results of the Ecological Land Classification (ELC) survey in 2022 (and confirmed in 2026) classified the community as



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a Green Ash – Hardwood Lowland Deciduous Forest (FODM7-2). This community type occurs on fresh to moist lowland sites and is frequently associated with floodplains, riparian zones, and areas influenced by elevated groundwater or seasonal inundation. Although not technically classified as a wetland vegetation community within the ELC system, FODM7-2 may occur adjacent to or transition into swamp communities and can form part of a wetland where wetland hydrology, hydric soils, and vegetation criteria are met. Green ash can be found in both lowland as well as wetland habitats. In consideration of the unevaluated wetland designation identified in the background review and ambiguity of this community type, this feature will be carried forward as a wetland.

Potential Impacts

Approximately 0.14 ha of lowland forest/wetland (FODM7-2) will be permanently lost to facilitate the Project. Temporary disturbance will occur in approximately 0.20 ha of the FODM7-2 community.

Proposed Mitigation

Standard Sediment and Erosion Control measures (**Section 5.0, I.D 5.0**) are recommended where work will occur within 30 m of wetland communities.

Vegetation protection measures in **Section 5.0, I.D. 2.0**, are also recommended to reduce indirect impacts to lowland forests/wetlands.

4.1.2.3 Wildlife and Wildlife Habitat

Existing Conditions

Wildlife habitat includes SAR habitat, seasonal concentration areas, rare or specialized habitats, habitats for Species of Conservation Concern (SOCC), and animal movement corridors.

Breeding Birds

A total of twenty-seven (27) bird species were observed during the breeding bird surveys within the Study Area in 2026. All species are expected to be potentially breeding in the Study Area and/or had historical breeding records in the Study Area with the exception of Turkey Vulture (suitable breeding habitat absent). All native species observed are considered apparently secure (S4, S4B) or secure (S5, S5B) breeding species in Ontario. Although Barn Swallow and Eastern Meadowlark are listed as threatened federally, they are not listed on the PSOL provincially and are not afforded protection under the SCA.



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Bat Habitat Assessment

Eighteen (18) candidate bat maternity roost trees were observed in the Study Area. Of these trees, fifteen were in advanced stages of decay, and the remaining three were identified as suitable based on a combination of factors (large DBH, presence of cavities, deeply creviced bark). Suitable habitat is present in the Work Zone for tree roosting bats.

Two ARUs were deployed within the Study Area in 2026 from May 28 to June 29, 2026. The units recorded thirty-two (32) nights of data. A total of five bat species including four (4) SAR were recorded during the survey. Hoary Bat was the most commonly recorded species with a total of 2306 recordings.

Significant Wildlife Habitat

Seasonal Concentration Areas

Seasonal concentration areas are those sites where large numbers of a species congregate at one time of the year, or where several species congregate. Bat Maternity Colonies are presumed present within the Work Zone and Study Area as cavity trees were observed and presence of bats were confirmed through acoustic surveys. Candidate snake hibernaculum may be present near old foundations identified within the Study Area outside the Work Zone.

Rare or Specialized Habitat

Rare or specialized habitats are two separate components of SWH. Rare habitats are those with vegetation communities that are considered rare in the province. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. There was no rare vegetation communities identified in the Study Area.

Specialized habitats are microhabitats that are critical to some wildlife species. The SWHTG (MNR 2000) identifies habitats that could be considered specialized habitats, such as habitat for area sensitive species, forests providing a high diversity of habitats, amphibian woodland breeding ponds, turtle nesting habitat, highly diverse sites, seeps, and springs. Candidate amphibian breeding habitat (woodland) is present in the Study Area where woodland habitat (FODM7-2) is present adjacent to open aquatic ecosite (OAO).



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Habitat for Species of Conservation Concern

Habitat for SOCC includes habitat for those species that are not covered under the SCA including species ranked as special concern and provincially ranked as S1-S3. Data from field surveys in the Study Area were used to assess the potential for habitat of SOCC to occur within the Study Area. Potentially suitable habitat for Monarch, Eastern Milksnake, Midland Painted Turtle and Snapping Turtle were found in the Study Area.

Animal Movement Corridors

Migration corridors are areas that are traditionally used by wildlife to move to one habitat from another. This is usually in response to different seasonal habitat requirements. There are two types of animal movement corridors in Ecoregion 6E: amphibian and deer movement corridors. These corridors are identified after amphibian breeding habitat (woodlands) and/or deer wintering/yarding areas are confirmed. Amphibian breeding habitat can be identified by conducting amphibian surveys to target potential breeding features. There were no animal movement corridors identified in the Study Area.

Potential Impacts

The proposed new roundabout will require vegetation removal, earth clearing, and grading, including in areas extending beyond the existing right-of-way (ROW), resulting in the loss of approximately 0.26 ha of terrestrial habitat within the Work Area, including 0.15 ha of treed habitat. Although no migratory bird nests were present during field investigations, the buildings and vegetation within the Study Area have potential to support nests of birds that are protected by the MBCA.

Natural vegetation within the Study Area including woodlands, meadows and agricultural lands may support nesting migratory birds. Any work near active bird nests has the potential to disturb nesting behavior or damage/destroy the nests, particularly during vegetation clearing within and beyond the ROW during the active breeding bird window (i.e., April 1 - August 31).

Vegetation removal will result in permanent and temporary loss of candidate SWH. Permanent habitat loss includes areas where there is permanent infrastructure to be constructed and temporary habitat loss includes areas that can be restored following construction (e.g., staging areas, etc.).

The following candidate SWH features were present in the Study Area:

- Bat Maternity Roost Habitat
- Snake Hibernaculum



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- Amphibian Breeding Habitat (Woodland)
- Habitat for SOCC (Monarch, Eastern Milksnake, Midland Painted Turtle and Snapping Turtle)

Construction phase disturbance to SWH can be mitigated through standard environmental protection measures for sediment and erosion control and vegetation protection, as discussed in **Section 5.0, I.D. 5.0** and **I.D.2.0**. Measures to mitigate impacts to protected bird nests are outlined in **Section 5.0, I.D 3.0**. Standard mitigation to avoid harm to wildlife is provided in **Section 5.0, I.D. 4.0**. Site-specific mitigation for SAR Bats and SOCC is provided in **Section 5.0, I.D 4.2, 4.3** and **4.4**.

The following seven (7) SAR have potential to be directly impacted during construction activities due to their behavior, habitat preferences, or movement patterns:

Bat SAR (Tri-colored Bat, Hoary Bat, Eastern Red Bat, Silver-haired Bat) – Bat maternity roost habitat is present within forest and individual trees in the proposed Work Area. Tree removal can result in direct mortality to bat SAR and loss of habitat. Protection for bats is provided by the timing restrictions identified in **Section 5.0, I.D 4.2**. **MECP** Registration under the SCA is recommended for impacts to habitat, accompanied by a Conservation Plan.

Bird SAR (Barn Swallow, Eastern Meadowlark) – Potential Barn Swallow habitat is present within rural properties (CVR_4) and potential habitat for Eastern Meadowlark is present in the meadow (ME) communities. Though neither species is anticipated to be encountered within the Work Zone, protection for SAR birds is provided in **Section 5.0, I.D 4.3**.

Reptile SAR (Blanding's Turtle) - Though suitable habitat was not identified within the Study Area, individuals may travel through Work Zone. Turtles may be particularly vulnerable during peak activity periods (April 1 to October 31), including during movement between wintering and nesting sites, nesting in the road shoulder (typically in June) and basking or foraging in the ROW. Site-specific mitigation measures to reduce potential impacts to turtles are discussed in **Section 5.0, ID 4.6**.

The following five (5) SOCC have potential to be directly impacted during construction activities due to their behavior, habitat preferences, or movement patterns:

Monarch - Primarily found in areas containing milkweed and wildflowers (including goldenrods, asters, and purple loosestrife) (COSEWIC 2016). The larvae occur only where milkweed exists, whereas adults are more generalized, feeding on a variety of wildflower nectar (COSEWIC 2016). Monarch and its habitat (i.e., milkweed patches) were observed in roadside meadows, which will experience temporary and permanent



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disturbance during construction. Site-specific mitigation measures for Monarch are discussed in **Section 5.0, ID 4.4.**

Eastern Milksnake - Construction activities can result in direct mortality to snakes. Snakes may be vulnerable during emergence from a hibernaculum, re-entrance, and basking periods, and may preferentially seek out construction materials to bask under. Peak activity for Eastern Milksnake is typically active between late April and late June (MNR 2016). Site specific mitigation measures are outlined in **Section 5.0, ID 4.5**

Snapping Turtle and Midland Painted Turtle - Interaction with Snapping Turtle and Midland Painted Turtle during construction activities could result in direct mortality. The aquatic habitat (OAO) in the Study Area may provide suitable habitat for turtles and individuals may also travel through Work Zone. Turtles may be particularly vulnerable during peak activity periods (April 1 to October 31), including movement between wintering and nesting sites, nesting in the road shoulder (typically in June) and basking or foraging in the ROW. Site-specific mitigation measures to reduce potential impacts to turtles are discussed in **Section 5.0, ID 4.6.**

Proposed Mitigation

Long term effects from the roundabout and intersection improvements are considered minor in nature with the implementation of the standard site-specific environmental protection measures included in this report. Standard and site-specific mitigation measures are listed in **Section 5.0, I.D 4 and 5.**

The following environmental mitigation and protective measures for wildlife and wildlife habitat are recommended:

- Construction equipment and vehicles are to yield to wildlife.
- Inform construction personnel not to threaten, harass or injure wildlife.
- If wildlife is encountered during construction, personnel are required to move away from the animal and wait for the animal to move off the construction site. If slow-moving wildlife (e.g., turtles, snakes) are observed on the road and are in danger, and if safe to do so, they should be moved off the road by gently guiding the individual in the direction it was traveling.
- Implement awareness training, including protocols in the event of a species encounter.
- Limits of the workspace should be clearly marked to reduce encroachment into adjacent natural areas, and unnecessary tree removal should be avoided.



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The mitigation measures presented below follow general guidance for the protection of SAR/SOCC and are consistent with approved measures implemented on similar projects in Ontario. Species-specific measures are provided for species commonly encountered along roadways or in construction zones.

General mitigation to reduce impacts to SAR or SOCC and their habitats include:

- Inform on-site personnel of the potential presence of the SAR/SOCC identified in the Study Area, obligations under the SCA, and recommended actions in the event of an encounter.
- Species listed as endangered or threatened on the PSOL list that are present in the Study Area must be protected from harm.
- If an injured or deceased SAR is found, the specimen must be placed in a non-airtight container that is maintained at an appropriate temperature and MECP must be contacted immediately for additional guidance.
- There is potential for four (4) SAR bats to be present within the Work Zone. Permanent loss of treed habitat is anticipated, but with the implementation of mitigation, including timing windows, impacts can be reduced. A Conservation Plan will be prepared for Bat SAR, as per Species Conservation Act requirements, that will outline additional conservation and mitigation measures for Bat SAR.
- Removal of vegetation is recommended to take place during December 1 to March 31, outside the period when bats use trees for maternity roosts. Therefore, tree removal should not occur between April 1 to November 30 of any given year.
- Do not handle live bats, unless required.
- Machinery brought to Site will be clean to reduce the potential to introduce pests to the Site. Equipment will be cleaned following the Clean Equipment Protocol for Industry.
- Exclusion methods for bats in trees are not currently feasible, reliable, safe or recommended.
- Removal and the associated exclusion methods for bats in trees are not currently feasible, reliable, safe or recommended.
- Handling and possession of live bats is not likely as a result of the Registrable Activity.



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- However, as required by 11(ii), those steps will be followed in the case of an encounter. Only a Qualified Professional with the proper health and safety requirements and/or equipment will be permitted to handle a member of the Protected Species.

The following measures will be implemented in the event of an encounter with a bat:

- Allow the bat space and time to leave (e.g. 24 hours).
- Only a Qualified Person with appropriate health and safety training and/or equipment will be permitted to relocate a member of the Species.
- If there is a reasonable possibility of survival, a licensed wildlife rehabilitation facility will be contacted and any additional actions will be undertaken under their advisement.
- Injured individuals that require humane killing will be dealt with as advised by the wildlife rehabilitation facility and by or under the direction of a vet.

Though there is a low probability of encountering the two (2) identified bird SAR, Barn Swallow and Eastern Meadowlark within the Work Zone, the following mitigations are recommended:

- Building removal is not an anticipated activity within the Study Area and therefore impacts to Barn Swallow breeding habitat are not anticipated. Should building removal become a requirement for project activities, removal is recommended to take place outside the period when Barn Swallow may be nesting (April 1 – August 31).
- Removal of vegetation in areas that could support Eastern Meadowlark (i.e., meadows) is recommended to take place outside the period when Eastern Meadowlark may be nesting within the Work Zone (April 21 – July 3).

There is potential for Monarch to be encountered within the Work Zone during construction, as milkweed and other wildflowers are present.

- If possible, avoid construction activities that have the potential to harm monarch eggs, caterpillar or pupae (e.g., vegetation clearing in meadow areas) during the larval period, which is approximately May 1 to September 30 (COSSARO 2020).
- If vegetation clearing will proceed when Monarch larvae may be present (i.e., May 1 to September 30), inspection of milkweed plants is recommended to locate Monarch larvae. If larvae are present, they may be moved to a location that is suitable and safe under the direction of a qualified professional. Monarch caterpillars may be



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moved to other milkweed plants; for other larval stages (i.e., eggs and chrysalis), entire milkweed plants should be transplanted.

Milkweed and nectar producing plants should be included in seed mixes for areas restored to meadow to provide habitat for Monarch.

Although no snakes were observed, a candidate hibernaculum may occur adjacent to the Work Zone, and snakes have potential to be present. To avoid impacts to snakes, the following measures are recommended if work takes place during the active season (April 1-November 1):

- A thorough visual search of the Work Zone by construction contractors is recommended before work commences each day. Visual searches should include inspection of machinery and equipment, prior to starting equipment, particularly during the peak reptile activity period from April 1 to November 1.
- If snakes are encountered during construction, they will be permitted reasonable time to leave the area. Individuals will not be handled, chased, or harassed. If reptiles do not leave the work area on their own, contact should be made with the appropriate agency to obtain information about the species and direction on how to proceed. A Qualified Biologist may need to be retained to relocate the individuals.
- If a snake hibernaculum is discovered, all work must cease, and a Qualified Biologist shall be contacted to discuss mitigation options. Overwintering snakes shall not be relocated.
- Disturbance to brush piles/logs will be avoided wherever possible. If a brush/log pile must be moved or disturbed, it will be inspected for reptiles and relocated within a few meters, to the extent possible, to retain the habitat feature.
- Potential snake hibernation sites (i.e., rock outcroppings or stumps extending below-grade, or animal burrows) should not be disturbed during the hibernation period (i.e., November 1 to March 31). If removal of above-ground habitat features (i.e., rock slabs or piles, brush) is needed, these features will be retained outside the active Work Zone during construction and returned post-construction to the same or a nearby location.



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There is potential for two (2) turtle SOCC, Midland Painted Turtle and Snapping Turtle, to be encountered within the Work Zone during construction.

Turtle nesting typically takes place in June, with eggs remaining in the nest until September. Turtles are most likely to be encountered during the nesting season, which generally occurs from late May to early July (OMNR 2013). Overwintering occurs in wetlands with standing water and soft substrates, generally between November and March.

The following mitigation measures are recommended to reduce the likelihood of impacts to turtles:

- There is potential for turtles to be present during the active season (April 1 to November 30), work that is required adjacent to the Open Aquatic (OAO) community during the active season, fencing can be used to exclude turtles from entering the work area.
- Erect exclusion fencing (e.g., Type B described in B899-1- Wildlife Fence) around proposed construction areas prior to start of work to reduce the likelihood of turtles entering the work area.
- Install exclusion fencing prior to the start of sensitive nesting season (i.e., May 15) if activities are anticipated to occur throughout this period to prevent turtles from entering and/or nesting and fencing should remain until all construction activities are complete:
 - Prior to May 15 if activities are occurring within or adjacent to nesting habitat (i.e., exposed soils adjacent to or along riverbanks).
 - If erecting exclusion fencing, use a type that will last the duration of the project (Type B described in B899-1- Wildlife Fence).
 - a. Fence fabric opening size shall be selected based on species requirements:
 - b. Standard opening size is 9.53 mm. Smaller 6.35 mm openings may be required where smaller reptiles or amphibians could become entrapped in larger mesh openings.
 - c. Solid plastic fencing may be considered as a non-standard alternative where warranted.
 - d. Where fencing is located near roadways and subject to snow loading from winter maintenance activities, the 9.53 mm mesh opening should generally be considered.



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- e. In earth sections, the buried portion of the fence fabric shall be backfilled using excavated material generated during installation.
- f. Remove exclusion fencing once all construction work is complete and soils are established.
- Have a qualified person conduct a pre-construction sweep and monitor the work area for active turtle nests during the turtle nesting season (June 1 – August 31)
- If turtle eggs are encountered or unearthed during the construction activities all operations must immediately stop within 10 m of the active nest
- If a turtle is encountered that has already begun to nest (i.e., digging and/or sitting in a nest pit), construction activities should stop within 5 m of the turtle, and the turtle to be left alone to complete the egg-laying process and leave the area on of its own accord
- Implement a worker awareness program for construction staff that includes Snapping Turtle, Blanding's Turtle and Midland Painted Turtle identification and habitat characteristics
- Stockpiled topsoil, sand, and/or gravel stored near aquatics communities must be completely encircled with silt fence or completely covered with geotextile to prevent turtles from accessing and nesting in the materials from May 15 to July 15 of any year

4.2 Erosion and Sedimentation Control

4.2.1 Potential Impacts

Erosion and generation of sediment during excavation and grading activities associated with the construction of the proposed improvements have the potential to impact drainage ditches, and adjacent natural communities within the Study Area.

The Contractor shall review and confirm potential impacts during the construction phase of the project.

4.2.2 Proposed Mitigation

Mitigation measures for sedimentation, erosion, and dust control should be implemented to reduce sediment and dust from entering sensitive natural features.

The primary principles associated with sedimentation and erosion protection measures are to: 1) minimize the duration of soil exposure; 2) retain existing vegetation, where



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feasible; 3) encourage re-vegetation; 4) divert runoff away from exposed soils; 5) keep runoff velocities low; and to 6) trap sediment as close to the source as possible.

To address these principles, the following mitigation measures are proposed:

- Installation of silt fencing and/or barriers along work zones is recommended where there is potential for sedimentation of watercourses or wetlands, or inadvertent encroachment of construction vehicles into natural areas.
- Avoid entering any natural areas beyond the barrier fencing with equipment and avoid excess vegetation removal.
- Re-vegetate disturbed areas as soon as possible in accordance with OPSS.PROV 803 to re-stabilize soils and implement temporary erosion control measures if areas of erosion are identified on site, and/or if re-seeding is delayed.
- In addition to any specified requirements, make additional silt fence available on site, prior to grading operations, to provide a contingency supply in the event of an emergency.
- Monitor all sediment and erosion controls regularly and properly maintain as required. Remove controls only after the soils of the construction area have been stabilized and adequately protected or until cover is reestablished.
- Monitor limits of construction adjacent to natural features during construction (along with sedimentation and erosion control measures) to maintain limits with respect to vehicular traffic and soil or equipment stockpiling.
- Avoid stockpiling excess materials on-site.
- Restore any disturbed natural areas to pre-construction conditions.
- Standard erosion and sediment control measures will be erected surround the Work Zone to mitigate sediment transport into surrounding natural areas including wetland habitat.

The Contractor shall review, confirm, and update proposed mitigation measures during the next phase of the project.

4.3 Contamination and Management of Excess Materials

An Assessment of Past Uses (APU) was completed to identify each location where soil is to be excavated as defined by the Areas of Potential Environmental Concern



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(APECs) and to confirm an appropriate level of sampling and analysis is carried out to determine the concentration of contaminants in soil that will be excavated during construction to identify:

- Which soil may be reused within the Project Area, either with or without processing and which soil may be deposited at a Class 1 Soil Management Site or landfill; and,
- The potential types of reuse sites at which excess soil from the Project Area may be deposited for final placement.

As described in an APU report prepared by Stantec (Stantec, 2023), the Project Area comprises an area of approximately 0.027 km² at the intersection of Highway 62 and County Road 1 and includes approximately 490 m of Highway 62 and approximately 400 m of County Road 1. The Project Area also included approximately 6.5 m on either side of each road, and the northwest, northeast, southeast, and southwest areas around the intersection. Adjacent properties include primarily farmland, rural residential and commercial properties, and some wooded areas. Commercial properties currently or historically situated adjacent to the Project Area include a plumbing business, tile showroom, a wine tour company, and an antique store. **Table 3** provides a summary of the identified APECs:

Contaminants of potential concern include:

- Petroleum hydrocarbon fractions 1 to 4 (PHC F1 to F4); benzene, toluene, ethylbenzene, and xylene (BTEX); polycyclic aromatic hydrocarbons (PAHs); volatile organic compounds (VOCs), sodium adsorption ratio (SAR), electrical conductivity (EC).



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Table 3: Areas of Potential Environmental Concern

APEC #	Location of APEC	Description of PCA	Approximate Distance of PCA from the Study Area	Contaminants of Potential Concern
1	Center of Project Area	Undefined PCA – 220 L of gasoline spilled to the ground	On-Site	PHC F1 to F4, BTEX
2	Center of Project Area	PCA #28- Gasoline Associated Products Storage in Fixed Tanks	Adjacent to Project Area, exact location unknown	PHC F1 to F4, BTEX
3	Project Area	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	PHC F1 to F4, BTEX, VOCs, PAHs, Metals, EC, SAR

4.3.1.1 Potential Impacts

Construction activities will generate approximately 3,708 m³ of soil from the Project Area that may require off-site management.

4.3.1.2 Proposed Mitigation

A Sampling and Analysis Plan was developed that recommends a total of 19 soil samples (plus 2 duplicates) be collected from nineteen (19) boreholes being advanced across APECs 1 to 3. In addition to the analytical program highlighted above, five soil samples should be collected for SPLP metals analysis as the “worst-case” locations based on field observations. In addition, one sample should be submitted for SPLP VOCs analysis from the “worst-case” location based on field observations from APEC 3. One composite waste classification sample should be collected for the analysis of TCLP leachate parameters, PCBs and ignitability, in the event that landfill disposal is selected as a soil management option. Additionally, a minimum of two (2) soil samples should be collected for the analysis of grain size; to confirm appropriate standards are selected for



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the assessment of soil quality. The analysis of nineteen (19) bulk soil samples, two (2) field duplicate soil samples and five (5) SPLP leachate samples was considered sufficient to characterize up to 3,708 m³ of excess soil generated from within the APECs identified at the Project Area.

The Sampling and Analysis Plan will include analysis of the following contaminants of potential concern:

- PHC F1 to F4
- Metals and hydride-forming metals (antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, uranium, vanadium, and zinc)
- Inorganics (including SAR, EC and pH)
- Polycyclic aromatic hydrocarbons (PAHs)
- Volatile organic compounds (VOCs)
- Leachate analysis using the modified synthetic precipitation leaching procedure (mSPLP) for metals and VOCs for selected samples

Toxicity characteristic leaching procedure (TCLP) analysis for inorganics, volatiles and semivolatiles, together with bulk polychlorinated biphenyls (PCBs) and ignitability, for waste classification purposes. All excess material generated during construction shall be managed in accordance with Ontario Regulation (O. Reg.) 406/19, OPSS.PROV 180, and relevant amendments. The Contractor will be responsible for determining the location of disposal (i.e., a location on-site or reuse location off-site) for excess material generated during construction.

Soil within the Study Area can be left in place or, if excavated, can generally be re-used at the site provided it meets required geotechnical standards for the project. It is recommended that soil reused at the site be placed within proposed repaving areas and where it is anticipated that salt will be applied in the future for de-icing purposes. Salt-impacted soil should be managed in accordance with the Soil Rules under O.Reg. 406/19. This includes placement more than 30 m away from a waterbody.

In general, excess soil may be considered for off-site management as salt-impacted soil at a beneficial reuse site (industrial/ commercial/community land use). Beneficial reuse options may be limited for soil excavated at the locations with exceedances noted above. Additional sampling within the soil excavation at these locations may reduce the amount of soil with reuse restrictions. Additional soil sampling within 1 m BGS may also



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be conducted to further characterize aggregate roadbed materials if they are removed as excess soil from the excavation footprint.

It is recommended that the Contractor comply with O.Reg. 406/19 for any storage, movement, transportation and/or disposal of any excess soil, whether suspected to be contaminated or not, including slurry generated by hydrovacuum excavation. Movement of soil materials within the Project Area must follow the storage and setback requirements of O.Reg. 406/19, as well as adhering to the requirements of site-specific instruments, if applicable.

Should suspected contaminated soil be found during construction activities (e.g., staining, odours, debris/waste, petroleum hydrocarbon sheen), a Qualified Person should be retained to identify and collect representative soil samples for chemical analysis to determine management options and appropriate handling in accordance with O.Reg. 406/19.

4.4 Designated Substances and Hazardous Materials

4.4.1.1 Potential Impacts

There is the potential to encounter designated substances and/or hazardous materials from undertaking the proposed improvements.

4.4.1.2 Proposed Mitigation

A Designated Substances Survey will be completed by Stantec Consulting to identify a list of potential designated substances and hazardous materials that may require special attention in the Study Area during construction. The assessment will be carried out in accordance with the requirements of the *Ontario Occupational Health and Safety Act* (OHSA) and provincial regulations, including O.Reg. 278/05 and O.Reg. 490/09. The Study Area will be assessed for substances designated under the OHSA including, but not limited to, asbestos, lead, mercury, and silica, and polychlorinated biphenyls (PCBs).

Should any suspected designated substances, such as asbestos, PCBs, etc., be encountered during the construction of the project, the Contractor should notify MTO so that an appropriately qualified contractor or consultant can be retained to assess and manage the designated substances prior to any disturbances, in accordance with relevant regulations (e.g., O.Reg. 278/05, O.Reg. 362, Federal Regulation SOR/2008-273, etc.).



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4.5 Groundwater Resources

The Site is located in the Prince Edward Peninsula Watershed (Consecon Subwatershed) within the regulatory boundary of the Quinte Conservation Authority. Woodlands, water bodies, and permanent wetlands cover over 41% of the peninsula area. Numerous small watercourses provide drainage for the peninsula, flowing from inland plateaus to the Bay of Quinte and Lake Ontario. The nearest watercourse is located approximately 250 m southeast of the intersection, and this watercourse flows south and outlets to a tributary of Bloomfield Creek approximately 4 km south of the Site. The Study Area is located within the Prince Edward Peninsula physiographic region which is characterized by limestone bedrock with thin overburden cover and relatively flat topography. The peninsula has an irregular shoreline defined by steep bedrock escarpments and rocky shorelines in some areas and bay mouth sand bars in other areas. A review of the surficial geological mapping by the Ontario Geological Survey indicated the Site and surrounding area is dominated by Paleozoic bedrock, mapped as the Lindsay Formation and consisting of limestone / shale exposed at surface or covered by a discontinuous, thin layer of drift. Based on MECP water well records (WWR), mapped within 500 m of the Site, the bedrock surface was encountered at an average depth of 1.4 m below ground surface (BGS) with individual records indicating depths from 0 m to 4.3 m BGS. Bedrock was described as limestone (sometimes fractured) and/or shale with an occasional report of sandstone. Overburden was reported as topsoil, clay, gravel and/or sand.

Overburden aquifers are not extensive throughout the Quinte Source Protection Area (SPA) due to the generally thin soils within the region but are present where there are sufficient deposits of sand and gravel, such as the Picton Esker near West Lake in Prince Edward County. Private wells (95%) in the Quinte Region primarily obtain supply from fractured bedrock aquifers. These fractured bedrock aquifers are generally considered to be unconfined, allowing precipitation to move easily from the ground surface into these shallow aquifers. The slope of the bedrock surface in the region is to the south and serves to direct the regional flow of both groundwater and surface water in a southerly direction. Based on water level data from nearby MECP WWRs, the average static water level in the bedrock wells is approximately 3.4 m below ground surface (BGS), with individual measurements ranging from 0 to 12.2 m BGS.

The water supply in the area is obtained from Lake Ontario via the Wellington Water Treatment Plant intake. Given the Site location within a predominantly rural area, it is anticipated that the water supply for nearby rural businesses and residences is obtained from private groundwater supply wells. The review of the MECP WWRs identified a total of thirty-eight (38) WWRs within 500 m of the Site, with twenty (20) water supply wells reported for domestic and/or livestock use, and one (1) well for commercial use. The



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remaining seventeen (17) WWRs were reported as abandoned, not used, or provided no information on use.

Based on review of aerial imagery, there are rural residences / businesses within 500 m of the Site with no mapped WWR shown, which may have private supply wells in use.

4.5.1 Potential Impacts

Proposed construction activities for the new roundabout and drainage improvements (culvert extension/replacement) will likely include below ground excavation. Groundwater levels near ground surface were reported in private water supply wells in the vicinity of the Site. Shallow groundwater conditions are also likely to be present near ponds, wetlands, and watercourses near the Site.

Based on the WWR review, there are six (6) mapped potentially active private wells located within 100 m of the Site. These private supply wells are completed within bedrock in areas with relatively thin overburden cover (0.3 m to 1.5 m thick) and include shallow installations (< 15 m deep). Shallow water supply wells are more susceptible to potential well interference from construction activities including groundwater dewatering. Once the drainage design is completed/confirmed, the location of below ground excavation and potential groundwater construction dewatering should be reviewed with respect to active shallow supply wells to determine the need for and extent of private well monitoring in select areas.

Based on the distance of the Study Area to municipal water supply sources, the proposed construction work is not considered to be a threat to Wellhead Protection Areas (WHPAs) or Intake Protection Zones (IPZs). The Study Area does not intercept any WHPAs, Significant Groundwater Recharge Areas (SGRAs), or IPZs. With respect to the proposed groundwater pumping, surface water interference is not expected based on the minimal extent of drawdown predicted.

The Site lies within a Highly Vulnerable Area (HVA) with a vulnerability score of 6. Due to shallow soil conditions and the ease with which a contaminant can move into the underlying fractured bedrock, the entire Quinte Region SPA has been designated as a HVA area. The Quinte Region SPP does not include policies related to HVAs having vulnerability scores of 6. Applicable mitigation measures should be included during construction for potential spills.

Identifying potential threats to source water is an important aspect of source water protection. Ancillary project activities (application of road salt, handling and storage of fuel, etc.) may pose a low risk to local groundwater and surface water quality. The primary concern regarding groundwater quality is the potential for contaminant spills during construction.



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4.5.2 Proposed Mitigation

Based on the preliminary review of available data, the following recommendations are provided:

- It is anticipated that a groundwater EASR registration may be required for work involving drainage improvements (culvert replacement / extension). The need for an EASR in select areas would be determined once the drainage design is confirmed.
- Based on the WWR review, there are six (6) mapped potentially active private wells located within 100 m of the Site. These private supply wells are completed within bedrock in areas with relatively thin overburden cover (0.3 m to 1.5 m thick) and include shallow installations (< 15 m deep). Shallow water supply wells are more susceptible to potential well interference from construction activities including groundwater dewatering.

Various mitigation techniques will be employed during construction to reduce the risk of impacts to natural environment features. During construction activity, the primary concern regarding groundwater quality would be the potential for a contaminant spill. To address this concern, the following mitigation measures are proposed:

- Refueling of equipment should be completed away from surface water features, SGRAs and HVAs, whenever possible, to minimize potential impacts to surface water/groundwater quality in the event that an accidental spill occurs.
- To minimize the impact of potential contaminant spills, the Contractor should implement best management protocols such as secondary containment of any temporary fuel storage and preparation of a spill response plan and proper facility management during operation and maintenance.
- Materials for spill response such as drip pans and spill contingency kits must be maintained on site.

Standard construction measures are recommended to be implemented throughout construction, including, but not limited to, the following:

- Erosion and Sediment Control (ESC) measures (e.g., silt fences, straw bales) will be implemented, as required, prior to, and maintained during, the construction phases, to prevent erosion and sedimentation.
- ESC measures may need to be upgraded and/or amended as site conditions change to minimize sediment laden runoff from leaving the work areas.
- Additional ESC supplies are to be kept on site and be used as necessary.



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- Disturbed areas will be minimized to the extent possible, and temporarily or permanently stabilized or restored as the work progresses.
- No equipment will be permitted to enter any natural areas beyond the silt fencing or tree protection fencing (site boundaries) during construction.
- Materials requiring stockpiling (i.e., fill, topsoil, etc.) are to be stabilized and kept a safe distance from surface water features and natural areas. The perimeter of any stockpiles will be encircled with silt fencing.
- Disturbed areas will be stabilized and revegetated, as required, upon completion of work and restored to a pre-disturbed state or better.

The following measures should be employed to reduce the risk of fuel spills near water:

- Ensure containers, hoses, nozzles are free of leaks.
- Equip fuel nozzles with automatic shutoffs.
- Have operators stationed at both ends of the hose during fueling.
- The Contractor shall ensure that waste materials from construction activities shall be safely disposed of through an appropriate waste management facility and in compliance with the MECP regulations.
- The Contractor shall have spill containment kits at the Site.
- In the event of a spill of fuel or other hazardous material during construction, remedial actions must be undertaken immediately.
- Spills with the potential to create an impact to the environment should be reported to the MECP Spills Action Centre as soon as possible.

Under Ontario Regulation (O. Reg.) 64/16 and O. Reg. 63/16A, an EASR is required when dewatering volumes are expected to exceed 50,000 L/day. It is noted that since July 1, 2025, an EASR is suitable to support construction dewatering regardless of rate. The need for an EASR in select areas would be determined once the drainage design is confirmed.

4.5.1 Source Water Protection

In accordance with the Clean Water Act (2006), the Quinte Region Source Protection Committee (QRSPC) completed a source water protection assessment for the Quinte Region SPA. As part of the assessment process, vulnerable areas within the source



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water area were defined. Vulnerable areas include Well Head Protection Areas (WHPAs), Highly Vulnerable Aquifers (HVAs) and Significant Groundwater Recharge Areas (SGRAs) for groundwater supply sources; and Intake Protection Zones (IPZs) for surface water supply sources.

Issue Contributing Areas (ICAs) were also defined for municipal sources, as needed, where historical raw water quality data suggested that anthropogenic activity could be deteriorating drinking water quality.

Vulnerable areas and ICAs are regulated under the Clean Water Act. Land use policies have been developed to control drinking water threats in these areas; where a drinking water threat is defined as an activity or condition that adversely affects, or has the potential to adversely affect, the quality or quantity of any water that is or may be used as a source of drinking water.

The Quinte Region Source Protection Plan (SPP) identifies the vulnerable areas, and applicable drinking water threats, which are subject to regulation. There are no WHPAs, HVAs, SGRAs, IPZs, or ICAs within the Study Area.

4.6 Cultural Resources

4.6.1 Archaeological Resources

During Preliminary Design, a Stage 1 Archaeological Assessment (under PIF # P415-0416-2022) of the study area was carried out in accordance with the Standards and Guidelines for Consultant Archaeologists (2011) and the Ontario Heritage Act (1990) to determine the potential for the presence of known and/or potential archaeological resources in the area based on a review of relevant background information and a site visit conducted on December 2, 2022. The Stage 1 archaeological assessment determined that much of the study area retains potential for the identification and documentation of archaeological resources. In addition to the above, the Stage 1 archaeological assessment determined that portions of the study area meet the criteria for low to no archaeological potential. The Stage 2 archaeological assessment (under PIF #P415-0466-2023) was conducted on October 18, 2023. No archaeological resources were documented during the Stage 2 assessment of the study area. Therefore, in accordance with Section 2.2 and Section 7.8.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no further archaeological assessment of the study area is required.

During construction, there is always the chance of encountering deeply buried archaeological material. If the Contractor's operations expose any items which may indicate an archaeological find, such as building remains, hardware, accumulations of



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bones, pottery, or arrowheads, the Contractor shall immediately notify the Contract Administrator and suspend operations within the area identified by the Contract Administrator. Work shall remain suspended within that area until otherwise directed by the Contract Administrator in writing.

In addition, if unmarked human remains are encountered, the provisions of Ontario's Funeral, Burial and Cremation Services Act apply. Upon encountering human remains, work in the area shall cease, and the police or coroner shall be contacted immediately.

The Ministry of Citizenship and Multiculturalism should be informed of any archaeological finds.

4.6.2 Built Heritage Resources and Cultural Heritage Landscapes

The study area has been screened for Built Heritage Resources and Cultural Heritage Landscapes and determined that there are no Built Heritage Resources and Cultural Heritage Landscapes in the area.

4.7 Socio-Economic Environment

4.7.1 Adjacent Land Use and Property Access

The study area is located within Prince Edward County. The intersection is located at Highway 62 and County Road 1. The immediate study area consists of agricultural land, some wooded and wetland areas, and local businesses.

The following businesses are located within or near the study area and have been consulted and contacted as part of the consultation program for this study:

- Porkie's Place
- Taste of Country
- Prince Edward County Wine Tours
- Alota Tile
- Huff Estate and Winery
- Oeno Gallery
- TerraCello Winery
- Stillus Craft Spirits



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- Centi Estate Winery
- Andara Gallery
- FieldBird Farm and Cider
- County Steel
- Foster Rock Quarry
- Mustang Drive in
- The County Nook
- Picton Rooms @ the Sevens
- Camping Vacation Rentals

Construction is planned to commence in Spring 2027 and includes:

- Construction of a new single lane roundabout, including new advance signage and construction of new driveways/entrances to affected businesses.
- Culvert replacements and reconstruction of ditches to new alignment to accommodate the roundabout.
- Landscaping along approaches and in central island.
- New illumination at the roundabout.

Construction will require:

- Lane shifts including temporary hot mix asphalt to provide additional width.
- Daytime single lane closures with flagging to maintain two-way traffic.
- Short duration overnight closures of the intersection may be required.

Access to adjacent properties will be maintained at all times during construction.

Advance signage will be in place throughout construction to notify the travelling public.

4.7.2 Provincial Policy Statement

The Provincial Planning Statement (PPS) is issued under Section 3 of the Planning Act and came into effect on October 20, 2024. Section 3 of the Planning Act states decisions affecting planning matters “shall be consistent with” the PPS. The consistency



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of the proposed improvements (defined as “infrastructure” in the PPS) with the relevant Infrastructure and Facilities policies included in Chapter 3 of the PPS is summarized as follows:

- Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit, and electricity generation facilities and transmission systems to meet current and projected needs.
- Major goods movement facilities and corridors shall be protected for the long term.
- Planning authorities shall not permit development in planned corridors that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.
- New development proposed on adjacent lands to existing or planned corridors and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, or where avoidance is not possible, minimize and mitigate negative impacts on and adverse effects from the corridor and transportation facilities.
- The preservation and reuse of abandoned corridors for purposes that maintain the corridor’s integrity and continuous linear characteristics should be encouraged, wherever feasible.
- The co-location of linear infrastructure should be promoted, where appropriate.

The project aligns with the PPS.

4.7.3 Traffic and Emergency Services

Construction activities will be contained within MTO’s existing right-of-way. Construction staging information is contained in **Section 3.2**.

Emergency Services consist of police, fire, and medical response providers. The following is the summary of emergency services within the study area:

- Police service in the study area is provided by the Ontario Provincial Police (OPP) – Prince Edward County Detachment (located on County Road 1 between Bloomfield and Picton).
- Fire services are provided by Prince Edward County Fire Department. The closest fire station to the study area is located in Bloomfield.
- Hastings Quinte Paramedic Services (HQPS) provides paramedic services and is located in Picton.



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Emergency Services (EMS) will be advised of the construction schedule at least two weeks prior to construction start. The Contractor shall maintain access for emergency services throughout construction and will coordinate with EMS, as required.

4.7.4 Air Quality

Dust and air quality impacts on adjoining land uses during construction shall be minimized by the Contractor through standard dust suppression measures.

4.7.5 Construction Noise and Vibration

Construction noise impacts are temporary in nature and are largely unavoidable. With adequate controls, impacts can be minimized. However, for some periods of time and types of work, construction noise will be noticeable. The Contractor will be required to maintain equipment 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. Controls for noise will also include restricting the idling of equipment and operation of equipment to the minimum necessary to perform the specified work. MTO and its contractors are not required to obtain Noise By-Law exemptions from local municipalities.

4.7.6 Public Transportation

Prince Edward County has two bus routes through the project area. Route 12A, which travels northbound and Route 12B, which travels southbound. The County will be advised of the construction schedule two weeks prior to construction start. The Contractor shall maintain access for bus services throughout construction and will coordinate with the County, as required.

4.8 Climate Change

Greenhouse gases are major contributors to warming temperatures on the planet and global climate change. No increase in traffic volume is anticipated as a direct result from the Recommended Plan, and the Recommended Plan is not expected to have a significant impact on the regional and provincial greenhouse gas targets. It is also anticipated that advancements in fuel efficiency and vehicle technologies will also result in an overall decrease in regional and provincial annual greenhouse gas emissions. Furthermore, the roundabout plan may aid in reducing emissions by improving traffic flow and reducing idling and fuel consumption.

Stormwater management and drainage infrastructure for the Recommended Plan will be designed considering climate change impacts.



5.0 Summary of Environmental Issues, Mitigating Measures, and Commitments

The proposed improvements within the Study Area can be completed without significant adverse effects to the existing natural, socio-economic, and cultural environment.

A summary of environmental issues, proposed mitigation, and commitments, as identified at the end of the study, is provided in **Table 4**. The table forms a comprehensive checklist of the commitments made to external agencies, the public, and other stakeholders during this study.



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Table 4: Summary of Environmental Concerns and Commitments

Legend

MTO: Ministry of Transportation

STS: Student Transportation Services

MCM: Ministry of Citizenship and Multiculturalism

EMS: Emergency Services

RES/BUS: Local Residents/Business Owners

MNR: Ministry of Natural Resources

MUN: Local Municipalities

PUB: General Public

MECP: Ministry of Environment, Conservation and Parks

QCA: Quinte Conservation Authority

UTL: Utilities

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
1.0	Invasive Species Management			
1.1.	General recommendations for invasive species management	MTO MNR	1.1.1	The Contractor will implement the Clean Equipment Protocol for Industry (Halloran et al. 2013) to minimize the introduction and spread of invasive species. Designated areas for equipment cleaning and invasive species stockpiles may be temporarily required during construction. If designated areas are required, they will be identified and demarcated in the field. The designated areas will not be located in or near watercourses, environmentally sensitive features, or areas where invasive species are not currently present. Soil contaminated with invasive species will not be re-used for restoration activities
2.0	Vegetation Communities (Section 4.1.2 of DCR)			
2.1	Loss of approximately 0.87 ha of vegetation cover and terrestrial habitat during construction including temporary and permanent loss or disturbance to accommodate construction activities (i.e., excavation, demolition, staging).	MTO MNR	2.1.1	Vegetation protection and rehabilitation shall be undertaken in accordance with Ontario Provincial Standard Specifications (OPSS.PROVs) 182, 801, 802, 803, and 804. Southern Ontario Native Grass and Forb Mix for poorly drained soils will be used to reseed disturbed areas. New seed should be introduced to disturbed substrates as soon as possible after construction, and sediment fencing should remain until vegetation cover is restored. The surface to be seeded shall be prepared according to OPSS.PROV 802 and not more than five (5) days prior to the seeding operation. Nurse crop application will be undertaken according to OPSS.PROV 803.
			2.1.2	During construction adjacent to vegetated areas, heavy equipment could damage peripheral vegetation from contact, excavation, and/or soil compaction. In areas where trees are present adjacent to construction activities that are not required to be removed for grading, tree protection is recommended to avoid encroachment.
			2.1.3	Vegetation removal should be undertaken outside of the migratory bird nesting period (i.e., April 1 to August 31).
2.2	Permanent loss of approximately 0.14 ha of lowland forest/wetland (FODM7-2). Temporary disturbance to approximately 0.20 ha of the FODM7-2 community.	MTO MNR	2.2.1	Standard Sediment and Erosion Control measures (I.D 7.0) are recommended where work will occur within 30 m of wetland communities. Wetland restoration in areas of temporary disturbance and compensation for wetland removal is recommended to offset loss of hydrological and ecological functions.

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
2.3	Effects to existing wooded areas and edge impacts	MTO MNR	2.3.1	Newly created edges that are cut along existing woodlands should be addressed with restoration plantings to protect and mitigate for potential negative effects, such as increased sunlight penetration, susceptibility to windthrow, desiccation, and spread of invasive species. It is recommended that restoration plans use native species that are tolerant of the site conditions, including roadside stresses such as salt, pollution, and soil compaction.
3.0	Migratory Birds and Protected Nests (Section 4.1.2.3 of DCR)			
3.1	Although no nests were observed in vegetation within the ROW or beyond, there is potential for nests of migratory birds to develop in subsequent seasons. The MBCA protects nests of migratory birds from damage while they are active, including nests in vegetation and on structures.	MTO MECP MNR	3.1.1	Vegetation clearing is recommended to occur outside the core nesting period (April 1 to August 31). to eliminate the need for migratory bird nest searches. If work must take place during the core nesting period and the area is small enough to be effectively searched for nesting birds (e.g., isolated trees or hedgerows), then a breeding bird survey can be completed by a Qualified Biologist.
			3.1.2	The area where bird nests may be impacted must be searched within five days prior to the work commencing. If breeding pairs are located, then they will be protected with a buffer until the nest is no longer active.
			3.1.3	If an active nest is observed during construction, a designated buffer will be delineated within which no activity will be allowed to occur while the nest is active (i.e., with eggs or young). The radius of the buffer will also be determined by a Qualified Biologist. Once the nest is determined to be inactive (e.g., the young have fledged the nest), clearing and other activities in the area may proceed.
4.0	Wildlife and Wildlife Habitat (Section 4.1.2.3 of DCR)			
4.1	Potential for incidental encounters with wildlife during construction, including species at risk.	MTO MECP	4.1.1	Construction equipment and vehicles are to yield to wildlife.
			4.1.2	Inform construction personnel not to threaten, harass or injure wildlife.
			4.1.3	If wildlife is encountered during construction, personnel are required to move away from the animal and wait for the animal to move off the construction site. If slow-moving wildlife (e.g., turtles, snakes) are observed on the road and are in danger, and if safe to do so, they should be moved off the road by gently guiding the individual in the direction it was traveling.
4.2	There is potential for four SAR bats, to be present within the Work Zone. Permanent loss of treed habitat is anticipated, but with the implementation of mitigation measures, including timing windows for vegetation clearing and removal and replanting, impacts can be reduced	MTO MECP	4.2.1	Removal of vegetation is recommended to take place outside the period when bats use trees for maternity roosts (i.e., December 1 to March 31). Therefore, tree removal should not occur between April 1 to November 30 of any given year.
			4.2.2	Implement awareness training, including protocols in the event of a species encounter.
			4.2.3	Limits of the workspace should be clearly marked to reduce encroachment into adjacent natural areas, and unnecessary tree removal should be avoided.
			4.2.4	Do not handle live bats, unless required.
			4.2.5	Machinery brought to Site will be clean to reduce the potential to introduce pests to the Site. Equipment will be cleaned following the Clean Equipment Protocol for Industry.
			4.2.6	Exclusion methods for bats in trees are not currently feasible, reliable, safe or recommended.

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
			4.2.7	Removal and the associated exclusion methods for bats in trees are not currently feasible, reliable, safe or recommended.
			4.2.8	Only a Qualified Professional with the proper health and safety requirements and/or equipment will be permitted to handle a member of the Protected Species.
			4.2.9	The following measures will be implemented in the event of an encounter with a bat: - Allow the bat space and time to leave (e.g. 24 hours). - Only a Qualified Person with appropriate health and safety training and/or equipment will be permitted to relocate a member of the Species. - If there is a reasonable possibility of survival, a licenced wildlife rehabilitation facility will be contacted and any additional actions will be undertaken under their advisement, - Injured individuals that require humane killing will be dealt with as advised by the wildlife rehabilitation facility and by or under the direction of a vet.
4.3	Potential of encountering the two identified bird SAR, Barn Swallow and Eastern Meadowlark within the Work Zone	MTO MECP	4.3.1	Building removal is not an anticipated activity within the Study Area and therefore, impacts to Barn Swallow breeding habitat are not anticipated. Should building removal become a requirement for project activities, removal is recommended to take place outside the period when Barn Swallow may be nesting (April 1 – August 31).
			4.3.3	Removal of vegetation in areas that could support Eastern Meadowlark (i.e., meadows) is recommended to take place outside the period when Eastern Meadowlark may be nesting within the Work Zone (April 21 – July 3).
4.4	There is potential for Monarch to be encountered within the Work Zone during construction, as milkweed and other wildflowers are present	MTO MECP	4.4.1	If possible, avoid construction activities that have the potential to harm monarch eggs, caterpillar or pupae (e.g., vegetation clearing in meadow areas) during the larval period, which is approximately May 1 to September 30 (COSSARO 2020).
			4.4.2	If vegetation clearing will proceed when Monarch larvae may be present (i.e., May 1 to September 30), inspection of milkweed plants is recommended to locate Monarch larvae. If larvae are present, they may be moved to a location that is suitable and safe under the direction of a qualified professional. Monarch caterpillars may be moved to other milkweed plants; for other larval stages (i.e., eggs and chrysalis), entire milkweed plants should be transplanted. Vegetation removal to take place during the period of October 1-April 30.
			4.4.3	Milkweed and nectar producing plants should be included in seed mixes for areas restored to meadow to provide habitat for Monarch.
4.5	A candidate hibernaculum may occur adjacent to the Work Zone, and snakes have potential to be present.	MTO MECP	4.5.1	A thorough visual search of the Work Zone by construction contractors is recommended before work commences each day. Visual searches should include inspection of machinery and equipment, prior to starting equipment, particularly during the peak reptile activity period from April 1 to November 1.
			4.5.2	If snakes are encountered during construction, they will be permitted reasonable time to leave the area. Individuals will not be handled, chased, or harassed. If reptiles do not leave the work area on their own, contact should be made with the appropriate agency to obtain information about the species and direction on how to proceed. A Qualified Biologist may need to be retained to relocate the individuals.

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
			4.5.3	If a snake hibernaculum is discovered, all work must cease, and a Qualified Biologist shall be contacted to discuss mitigation options. Overwintering snakes shall not be relocated.
			4.5.4	Disturbance to brush piles/logs will be avoided wherever possible. If a brush/log pile must be moved or disturbed, it will be inspected for reptiles and relocated within a few metres, to the extent possible, to retain the habitat feature.
			4.5.5	Potential snake hibernation sites (i.e., rock outcroppings or stumps extending below-grade, or animal burrows) should not be disturbed during the hibernation period (i.e., November 1 to March 31). If removal of above-ground habitat features (i.e., rock slabs or piles, brush) is needed, these features will be retained outside the active Work Zone during construction and returned post-construction to the same or a nearby location.
4.6	There is potential for turtle SOCC including Midland Painted Turtle and Snapping Turtle, and one turtle SAR-Blanding's Turtle to be encountered within the Work Zone during construction	MTO MECP	4.6.1	There is potential for turtles to be present during the active season (April 1 to November 30), work that is required adjacent to the Open Aquatic (OAO) community during the active season. Installation of exclusion fencing (May 15 until construction completion) can be used to exclude turtles from entering the work area.
			4.6.2	Erect exclusion fencing (e.g., Type B described in B899-1- Wildlife Fence) around proposed construction areas prior to start of work to reduce the likelihood of turtles entering the work area.
			4.6.3	Install exclusion fencing prior to the sensitive nesting season if activities are anticipated to occur throughout this period to prevent turtles from entering and/or nesting: • Prior to May 15 if activities are occurring within or adjacent to nesting habitat (i.e., exposed soils adjacent to or along riverbanks).
			4.6.4	If erecting exclusion fencing, use a type that will last the duration of the project (Type B described in B899-1- Wildlife Fence). • Fence fabric opening size shall be selected based on species requirements: • Standard opening size is 9.53 mm. Smaller 6.35 mm openings may be required where smaller reptiles or amphibians could become entrapped in larger mesh openings. • Solid plastic fencing may be considered as a non-standard alternative where warranted. • Where fencing is located near roadways and subject to snow loading from winter maintenance activities, the 9.53 mm mesh opening should generally be considered. • In earth sections, the buried portion of the fence fabric shall be backfilled using excavated material generated during installation.
			4.6.5	Have a qualified person conduct a pre-construction sweep and monitor the work area for active turtle nests during the turtle nesting season (June 1 – August 31)
			4.6.6	If turtle eggs are encountered or unearthed during the construction activities all operations must immediately stop within 10 m of the active nest

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
			4.6.7	If a turtle is encountered that has already begun to nest (i.e., digging and/or sitting in a nest pit), construction activities should stop within 10 m of the turtle, and the turtle to be left alone to complete the egg-laying process and leave the area on of its own accord
			4.6.8	Implement a worker awareness program for construction staff that includes Snapping Turtle and Midland Painted Turtle identification and habitat characteristics
			4.6.9	Stockpiled topsoil, sand, and/or gravel stored near aquatics communities must be completely encircled with silt fence or completely covered with geotextile to prevent turtles from accessing and nesting in the materials from May 15 to July 15 of any year
5.0	Erosion and Sediment Control (Section 4.2 of DCR)			
5.1	Erosion and sedimentation caused by construction activities have the potential to impact drainage ditches and habitats within and adjacent to the Study Area.	MTO MNR QCA	5.1.1	Erosion and sedimentation control measures will be implemented to avoid or mitigate impacts to adjacent habitats and property within and beyond the right-of-way.
5.1.2			The time interval between commencement and completion of any work that disturbs earth surfaces shall be a maximum of 45 days. Commencement of such work shall be considered to have occurred when the original stabilizing ground cover has been removed, including grubbing, or has been covered with fill material. Completion of such work shall be considered to have occurred when the specified cover material has been applied.	
5.1.3			A 200 m stand-by supply of prefabricated light duty silt fence barrier shall be maintained at the Contract site prior to commencement of grading operations and throughout the duration of the Contract.	
5.1.4			Excess material shall be managed in accordance with OPSS.PROV 180 and Ontario Regulation (O. Reg.) 406/19.	
5.1.5			Stabilize exposed soil areas following OPSS.PROV 803 (Construction Specification for Vegetative Cover) as detailed in Section 6.1 and revegetate through the placement of seed and matrix or seed and an erosion control blanket, promptly upon completion of construction activities.	
5.1.6			Install sediment fencing and/or barriers along Work Zones where there is potential for sedimentation of watercourses or wetlands, or inadvertent encroachment of construction vehicles into natural areas.	
5.1.7			Avoid entering any natural areas beyond the barrier fencing with equipment and avoid excess vegetation removal.	
5.1.8			Re-fuel equipment 30 m away from watercourses to reduce potential impacts if an accidental spill occurs.	
5.1.9			In addition to any specified requirements, make additional silt fence available on site, prior to grading operations, to provide a contingency supply in the event of an emergency.	
5.1.10			Monitor all sediment and erosion controls regularly and properly maintain, as required. Remove controls only after the soils of the construction area have been stabilized and adequately protected or until cover is re-established.	
5.1.11			Monitor limits of construction adjacent to natural features during construction (along with sediment and erosion control measures) to make sure that the limits are maintained with respect to vehicular traffic and soil or equipment stockpiling.	
5.1.12			Avoid stockpiling excess materials on site.	
5.1.13	Restore any disturbed natural areas to pre-construction conditions.			

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
6.0	Contamination and Management of Excess Materials (Section 4.3 of DCR)			
6.1	There is the potential to encounter contaminated materials from undertaking the proposed improvements. Three Areas of Potential Environmental Concern (APECs) were identified in the Project Area (historical gasoline spill, importation of fill of unknown quality, and former gasoline storage tanks). Construction activities will generate approximately 3,708 m3 of soil from the Project Area that may require off-site management.	MTO MECP	6.1.1	A Sampling and Analysis Plan was developed and outlined an excess soil characterization program to be completed prior to construction, in accordance with Ontario Regulation (O. Reg.) 406/19. The excess soil characterization program would consist of the analysis of 19 bulk soil samples, 2 field duplicate soil samples and 5 SPLP leachate samples to characterize up to 3,708 m3 of excess soil generated from within the APECs identified at the Project Area. All excess material generated during construction shall be managed in accordance with O. Reg. 406/19, OPSS.PROV 180, and relevant amendments and reference documents. The Contractor will be responsible for determining the location of disposal (i.e., a reuse location on-site or management location off-site) for excess material generated during construction, according to the soil quality characterization findings. The Contractor shall comply with O.Reg. 406/19 for any storage, movement, transportation and/or disposal of any excess soil, whether suspected to be contaminated or not, including slurry generated by hydrovacuum excavation. Movement of soil materials within the Project Area must follow the storage and setback requirements of O.Reg. 406/19, as well as adhering to the requirements of site-specific instruments, if applicable.
			6.1.2	Should suspected contaminated soil be found during construction activities (e.g., staining, odours, debris/waste, petroleum hydrocarbon sheen), a Qualified Person should be retained to identify and collect representative soil samples for chemical analysis to determine appropriate management and handling options, in accordance with O.Reg. 406/19.
7.0	Designated Substances and Hazardous Materials (Section 4.4 of DCR)			
7.1	There is the potential to encounter designated substances and/or hazardous materials from undertaking the proposed improvements.	MTO MECP	7.1.1	A Designated Substances Survey shall be undertaken to identify a list of potential designated substances and hazardous materials that may require special attention in the Study Area during construction. The assessment will be carried out in accordance with the requirements of the Ontario Occupational Health and Safety Act (OHSA) and provincial regulations, including O.Reg. 278/05 and O.Reg. 490/09. The Study Area will be assessed for substances designated under the OHSA including, but not limited to, asbestos, lead, mercury, and silica, and polychlorinated biphenyls (PCBs).
			7.1.2	Should any suspected designated substances, such as asbestos, PCBs, etc., be encountered during the construction of the project, the Contractor should notify MTO so that an appropriately qualified contractor or consultant can be retained to assess and manage the designated substances prior to any disturbances, in accordance with relevant regulations (e.g., O.Reg. 278/05, O.Reg. 362, Federal Regulation SOR/2008-273, etc.).
8.0	Drainage (Section 3.1.3 of DCR)			
8.1	The overall drainage patterns remain similar to the existing conditions, however the construction of the curbed sections of the roundabout will alter the flow, requiring catch basins to capture runoff.	MTO MECP QCA	8.1.1	Erosion and sedimentation control measures will be implemented to avoid or mitigate impacts to surface water features within or adjacent to the Study Area.

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
9.0	Groundwater Resources (Section 4.5 of DCR)			
9.1	Ancillary project activities (application of road salt, handling and storage of fuel, etc.) may pose a low risk to local groundwater and surface water quality. The primary concern regarding groundwater quality is the potential for contaminant spills during construction.	MTO MECP	9.1.1	The Contractor shall implement erosion and sedimentation control measures throughout construction.
			9.1.2	To limit the potential for wastes and spills at the Site, the following mitigation measures should be implemented: • Construction activities, including equipment maintenance, will be controlled to limit the potential for entry of petroleum products, debris, rubble, concrete or other deleterious substances into the surface water • Refueling and maintenance of vehicles will occur greater than 30 m from any surface water feature • The following measures should be employed to reduce the risk of fuel spills near water: • Ensure containers, hoses, nozzles are free of leaks • Equip fuel nozzles with automatic shutoffs • Have operators stationed at both ends of the hose during fueling • The Contractor shall ensure that waste materials from construction activities shall be safely disposed of through an appropriate waste management facility and in compliance with the MECP regulations • The Contractor shall have spill containment kits at the Site • In the event of a spill of fuel or other hazardous material during construction, remedial actions must be undertaken immediately Spills with the potential to create an impact to the environment should be reported to the MECP Spills Action Centre as soon as possible.
9.2	Construction activities associated with the construction of drainage improvements (culvert replacement / extension) may include excavations that may require dewatering.	MTO MECP	9.2.1	The Contractor shall confirm the need for the project to be registered on the Environmental Activity and Sector Registry (EASR) and shall undertake/assist MTO with undertaking the registration, if required.
10.0	Archaeological Resources (Section 4.6.1 of DCR)			
10.1	Previously unknown/deeply buried artifacts/human remains could be uncovered during construction.	MTO MCM	10.1.1	If the Contractor's operations expose any items which may indicate an archaeological find, such as building remains, hardware, accumulations of bones, pottery, or arrowheads, the Contractor shall immediately notify the Contract Administrator and suspend operations within the area identified by the Contract Administrator. Work shall remain suspended within that area until otherwise directed by the Contract Administrator in writing, according to subsection GC 7.11, Suspension of Work.

I.D. #	Environmental Issues/Concerns and Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring/Commitments to Further Work
11.0	Traffic and Emergency Services (Section 4.7.3 of DCR)			
11.1	Impacts to traffic are anticipated due to construction of the proposed improvements.	MTO EMS MUN STS RES/BUS PUB	11.1.1	Advance notice of construction start, the construction schedule, and any changes to proposed traffic flow will be provided by the Contractor in writing, in advance of construction, to the following: - Ontario Provincial Police, Prince Edward County Detachment - Prince Edward County Fire Department - Hastings Quinte Paramedic Services (HQPS) - Prince Edward County
12.0	Construction Noise (Section 4.8.5 of DCR)			
12.1	Potential for change in noise level during construction; however, minimal impacts to adjacent land-uses are expected and the agricultural nature of surrounding land uses.	MTO MUN RES/BUS PUB	12.1.1	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. Idling of equipment shall be restricted to the minimum necessary to perform the specified work. Operation of equipment shall be restricted to the minimum necessary to perform the specified work so as to prevent the unnecessary disruption of adjacent property owners.
13.0	Air Quality (Section 4.8.4 of DCR)			
13.1	Potential for dust from construction activities to adversely affect nearby land uses.	MTO MECP RES/BUS PUB	13.1.1	The Contractor shall take such steps as may be necessary to control dust resulting from the Contractor 's operations or by public traffic, where it is the Contractor 's responsibility to maintain a road through the Work, such that it does not: a) affect traffic; b) enter surface waters; or c) escape beyond the right-of-way to cause a nuisance to residents, businesses or utilities.
14.0	Utilities (Section 3.17 of DCR)			
14.1	Impacts to existing utilities during construction.	MTO UTL	14.1.1	Several utilities conflict with the new roundabout and are required to be relocated. Enbridge, Bell Canada and Hydro One have been consulted and will be relocating their services that conflict with the work in advance of construction. MTO electrical provides power to the overhead flashing amber beacon crossing Highway 62 and this will be removed during construction.

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6.0 Environmental Clearances, Approvals and Permits

Based on data obtained during field surveys and subsequent analysis, there is potential harm to bat SAR Tri-colored Bat, Hoary Bat, Eastern Red Bat, and Silver-haired Bat and their habitat. Registration under the SCA (O. Reg. 75/26) is required for SAR and/or their habitat that are present within the Work Zone where the clearing will occur.

The registration is obtained by making a submission through the SCA Registry, providing details regarding proposed activities, start and end dates, discussion of potential impacts to the species and habitat, as well as mitigation measures. It also involves the preparation of a Conservation Plan, which provides further discussion of impacts, rational for which mitigation was prescribed, and monitoring requirements.

7.0 Environmental Monitoring

An Environmental Synopsis will be developed to ensure that the Contractor is made aware of and is prepared to deal with all environmental issues that may arise during construction. Specific environmental controls based on these detailed mitigation measures will be included in the Contract Documents and drawings to address specific environmental concerns during the construction phase.

Monitoring will be conducted by on-site construction supervisory staff to ensure that environmental protection measures, as outlined in this report, are being implemented and are effective. This includes ensuring that the implementation of mitigating measures and key design features are consistent with commitments made to external agencies prior to construction. If protective measures do not address concerns identified or if major problems develop, the appropriate agency will be contacted to provide additional input.

If the impacts of construction are different than anticipated, or if the method of construction is such that there are greater than anticipated impacts, the Contractor's method of operation will be modified to reduce those impacts. Any changes proposed by the Contractor should be thoroughly evaluated to ensure that the intent of the mitigation measures and provisions are maintained.



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Following completion of the project, monitoring will be conducted by maintenance staff to ensure erosion control measures have been effective. In the event that problems are identified, MTO will initiate remedial action, as appropriate.

