Transportation Environmental Study Report

Ontario Ministry of Transportation

Bridge Replacement with New Diverging Diamond Interchange at the Queen Elizabeth Way and Glendale Avenue

Niagara Region

Roundabout at the Glendale Avenue / York Road Road Intersection

New Airport Road Connection from Glendale Avenue

August 10, 2018
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- Notice of Study Completion and TESR Submission

Appendix B: Public Information Centre Materials

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- Indigenous Communities Correspondence
- Municipal Correspondence
- Agency Correspondence
- Public Correspondence
1. Overview of the Project

1.1 Study Introduction and Location

The Ontario Ministry of Transportation (MTO) retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the MTO Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00).

As the Study progressed, Niagara Region requested that MTO and AECOM also examine existing and future traffic operations at the Glendale Avenue / York Road intersection and expand the study framework to identify and evaluate municipal road improvements on behalf of the Region. This request resulted in an extension of the study scope and framework to include Niagara Region’s proposed roundabout at the Glendale Avenue / York Road intersection as well as a new Airport Road connection from Glendale Avenue as separate undertakings in the Study. The proposed roundabout and the new Airport Road connection are both under the jurisdiction of Niagara Region.

The Study Area is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara (Niagara Region) (Figure 1-1).

![Figure 1-1: Study Area](image)

The MTO project was carried out in accordance with the approved planning process for a Group ‘B’ project under the Class Environmental Assessment for Provincial Transportation...
Facilities (2000) (Class EA). The Niagara Region projects (a roundabout at the Glendale Avenue / York Road intersection and a new Airport Road connection from Glendale Avenue) were carried out in accordance with the approved planning process for Schedule ‘C’ projects under the Municipal Class Environmental Assessment (amended 2007 and 2011). Given the proximity of the QEW / Glendale Avenue interchange and the Glendale Avenue / York Road intersection MTO and Niagara Region staff have worked together to ensure their Study processes are coordinated. Details on this coordination are provided in Section 2.

1.2 Study Purpose and Scope

1.2.1 MTO Improvements to the QEW / Glendale Avenue Interchange

The purpose of MTO’s study was to:

- Investigate replacement of the Glendale Avenue bridge over the QEW, and existing transportation issues associated with the QEW / Glendale Avenue interchange; and
- Propose alternatives for the replacement of the Glendale Avenue Underpass, interchange reconfigurations, and associated staging and detours during construction.

This Study encompassed:

- Identifying and evaluating existing traffic and environmental conditions within the Study Area;
- Developing bridge replacement and interchange configuration alternatives;
- Identifying a potential site within the study area for relocation of the Ontario Travel Information Centre (OTIC) currently located on the north side of the QEW just west of the Glendale Avenue interchange;
- Analyzing, evaluating and selecting alternatives based on impacts to the natural, socio-economic and cultural environments, as well as future transportation needs, in association with engineering and cost considerations;
- Considering Active Transportation opportunities (pedestrians and cyclists);
- Developing mitigation measures to minimize or avoid potential environmental impacts; and,
- Defining commitments to future work to be initiated during subsequent phases of this Study.

1.2.2 Niagara Region’s Roundabout at the Glendale Avenue / York Road Intersection

Independent to the provincial initiatives, this Study investigated and sought to address Regional transportation aspects outlined by the Niagara Region. An investigation was conducted on the transportation problems present at the Glendale Avenue / York Road intersection, with alternatives proposed that conform to Niagara Region standards.

This component of the Study included:

- Identifying and evaluating existing conditions of the Glendale Avenue / York Road intersection;
Developing and evaluating design alternatives for the Glendale Avenue / York Road intersection based on impacts to the natural, socio-economic and cultural environments, as well as future transportation needs in conjunction with engineering and cost considerations; and,

Considering Active Transportation enhancements (cycling, sidewalks, and pedestrians).

1.2.3 Niagara Region’s New Airport Road Connection from Glendale Avenue

In addition to the scope identified above pertaining to the Niagara Region improvements, a study was conducted on the feasibility of a new connecting road to Airport Road from Glendale Avenue, to further improve operations at the Glendale Avenue / York Road intersection and adjacent municipal road network.

This component of the Study included:

- Developing and evaluating design alternatives for the Airport Road connection based on impacts to the natural, socio-economic and cultural environments, as well as future transportation needs, in conjunction with engineering and cost considerations.

1.3 General Description of the Recommended Plan and Project Benefits

1.3.1 MTO Improvements to the QEW / Glendale Avenue Interchange – Bridge Replacement and Diverging Diamond Interchange

Key elements of the improvements to the MTO QEW / Glendale Avenue interchange are the following:

- Replacing the bridge that carries Glendale Avenue over the QEW, since the bridge has reached the end of its service life;
- Replacing the existing interchange configuration with a Diverging Diamond configuration, to improve interchange performance;
- Providing for Active Transportation (pedestrians and cyclists) through the interchange;
- Realigning Glendale Avenue slightly to the west, so that the existing bridge can remain in service while the new bridge is constructed beside it;
- Providing a commuter parking lot within the interchange, for drivers travelling from Niagara-on-the-Lake to the Greater Toronto Area or Niagara frontier area; and
- Providing a potential new site within the interchange for the Ontario Travel Information Centre (OTIC), to accommodate improvements to the Garden City Skyway that are proceeding separately from this undertaking.

The Diverging Diamond Interchange (DDI) improves performance by reducing vehicle conflict points and allowing unrestricted turning movements. It accomplishes this by reconfiguring the traffic lanes to allow for direct access to all four directional highway ramps (two off-ramps, two on-ramps).
Pedestrians and cyclists are directed to a multi-use path through the middle of the structure between opposing directions of car and truck traffic. This multi-use path extends between the ramp terminals and connects to bike lanes / sidewalks north and south of the ramp terminals.

The commuter parking lot and potential OTIC are accommodated in the northwest quadrant of the interchange, with access from Glendale Avenue and egress to the York Road / Airport Road intersection. The commuter parking lot supports sustainable transportation goals of the Province.

Although the MTO and Niagara Region projects are collectively more effective in addressing the identified structural and operational problems / opportunities, and there are construction and traffic staging efficiencies associated with concurrent construction / implementation of these projects, the improvements to MTO’s QEW / Glendale Avenue interchange will address the bridge condition and improve traffic operations regardless of whether or not Niagara Region’s roundabout at the Glendale Avenue / York Road intersection and new Airport Road connection are constructed / implemented.

1.3.2 Niagara Region Roundabout at the Glendale Avenue / York Road Intersection

Key elements of the Region’s roundabout at the Glendale Avenue / York Road intersection are the following:

- Replacing the existing signalized intersection at Glendale Avenue and York Road with a single-lane roundabout with channelization in the southwest and southeast quadrants to service high volume turning movements;
- Retaining access in all directions to the abutting commercial properties such as the hotels to the north; and
- Protecting for a potential two-lane roundabout in the event that York Road is widened in the future.

The proposed roundabout improves intersection performance by allowing free flow of all high volume movements which reduces the current and forecast length of queues related to the westbound to southbound traffic flow.

Although the MTO and Niagara Region projects are collectively more effective in addressing their problems and opportunities, and there are construction and traffic staging efficiencies associated with concurrent construction / implementation of these projects, the Region’s roundabout at the Glendale Avenue / York Road intersection would partially address the problems and opportunities. The roundabout plus new Airport Road connection fully address the problems and opportunities at the Glendale Avenue / York Road intersection.

1.3.3 Niagara Region’s New Airport Road Connection from Glendale Avenue

Key elements of the Region’s new Airport Road connection from Glendale Avenue are the following:

- A bridge under Glendale Avenue just north of the interchange bridge structure;
- A loop ramp from Glendale Avenue northbound connecting to the east end of the tunnel; and
• A connecting road from the west end of the bridge to the Airport Road / York Road intersection, which adds a westbound lane to the commuter parking lot egress road.

The new Airport Road connection from Glendale Avenue provides a more direct route for traffic to the historic Old Town Niagara-on-the-Lake tourist area by eliminating the need to navigate left and right turns through two intersections in close proximity to one another, and by diverting some traffic from the Glendale Avenue / York Road intersection.

The MTO and Niagara Region projects are collectively more effective in addressing their problems and opportunities, and there are construction and traffic staging efficiencies associated with concurrent construction / implementation of some aspects of these projects. However:

• Niagara Region’s new Airport Road connection will partially address the Regional traffic and operational problems / opportunities; and

• Construction staging opportunities allow Niagara Region’s new Airport Road connection to be constructed / implemented in advance of the roundabout at the Glendale Avenue / York Road intersection.

1.4 MTO’s QEW / Glendale Avenue to Highway 405 Class Environmental Assessment and Preliminary Design (1999) – Superseded by Current Study

In 1999, MTO published a Transportation Environmental Study Report (TESR) for the QEW from Glendale Avenue to Highway 405. The contents of this TESR document current conditions and a coordinated Class EA study process undertaken by MTO and the Niagara Region. In all matters pertaining to the QEW / Glendale Avenue interchange, this 2018 TESR supersedes and replaces the 1999 TESR.
2. Environmental Assessment Process

2.1 Canadian Environmental Assessment Act and Federal Approvals – Not Applicable to this Study

The *Canadian Environmental Assessment Act* (CEAA 2012) is supported by the CEAA 2012 Regulation Designating Physical Activities list. A proponent is not required to complete the CEAA process if a project is not on this list.

Review of this regulation has determined that the proposed design and construction of the MTO improvements to the QEW / Glendale Avenue interchange, the Niagara Region roundabout at the Glendale Avenue / York Road intersection, and the Region’s new Airport Road connection from Glendale Avenue do not include designated activities, so none of these projects are subject to CEAA.

Although the Federal Minister of the Environment has the discretion to require a federal EA to be undertaken if the project type is not on the project list, this situation is not anticipated.

2.2 Ontario Environmental Assessment Act

The purpose of the Ontario *Environmental Assessment Act* (EA Act), RSO 1990, which applies to the undertakings of government ministries and agencies, conservation authorities and municipalities, 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”. Some of the key EA Act requirements are the following:

- Description of the project purpose;
- Consideration of alternatives;
- Description of the environment that will be affected;
- Assessment of the environmental effects that will be caused (environmental impacts);
- Identification of actions to prevent or change those environmental effects (mitigation measures);
- Consultation with stakeholders; and
- Documentation of the above.

An undertaking can be assessed individually (requiring submission of a project-specific terms of reference, an environmental assessment, and project-specific approval of both to proceed) or as part of a self-directed class of undertakings with common characteristics and potential effects (which can proceed without project-specific approval provided the stipulated study process is complied with).

The projects described under this report are following approved class environmental assessment (Class EA) study processes as described in Section 2.3 and Section 2.4.

This report reflects some terminology differences between the MTO Class EA and Municipal Class EA:
For “alternatives to the undertaking” as described in the EA Act:
   o The MTO Class EA refers to “planning alternatives”; and
   o The Municipal Class EA refers to “alternative solutions”.

For “alternative methods” as described in the EA Act:
   o The MTO Class EA refers to “Preliminary Design alternatives”; and
   o The Municipal Class EA refers to “alternative design concepts”.

For “construction”, the Municipal Class EA uses the term “implementation”.

### 2.3 Use of Class Environmental Assessment for Provincial Transportation Facilities for MTO Improvements to the QEW / Glendale Avenue Interchange

The MTO Class Environmental Assessment for Provincial Transportation Facilities (amended 2000) (MTO Class EA) is approved under the EA Act. The MTO Class EA is a principle-based environmental planning process for four “groups” of MTO projects. The principles that MTO adheres to in addressing the requirements of the EA Act (described in Section 2.2) are the following:

- Transportation engineering;
- Environmental protection;
- Consultation;
- Evaluation;
- Documentation; and,
- Environmental clearance.

The four-stage planning and design process that MTO adheres to in addressing the requirements of the EA Act (described in Section 2.2) is the following:

- Planning;
- Preliminary Design;
- Detail Design; and,
- Construction.

Provided MTO follows the principles and planning process of the MTO Class EA, no project-specific approval is required under the EA Act.

The study process for MTO improvements to the QEW / Glendale Avenue interchange has complied with the requirements of the MTO Class EA for major improvements to existing facilities, which are classified as Group ‘B’ projects. For the MTO project:

- Consultation (including a Notice of Study Commencement and a Public Information Centre) is discussed in Section 3;
- Inventory of natural, socio-economic and cultural environments is discussed in Section 4;
• Problems and opportunities are discussed in Section 5.1;
• Planning alternatives are discussed in Section 6.1;
• Preliminary Design alternatives are discussed in Section 7.1;
• The preferred Preliminary Design is discussed in Section 8.1;
• Impacts (issues and effects) and mitigation measures are discussed in Section 9.1; and
• This Transportation Environmental Study Report (TESR) is being submitted at the end of Preliminary Design.

A Notice of Study Completion and TESR Submission is being published to advise stakeholders of the release of this TESR for a 45-day public review and to advise of the opportunity to make a bump-up (Part II order) request.

A Design and Construction Report (DCR) will be submitted as part of Detail Design. Public notices will be published in local newspapers to advise stakeholders of its availability for 45-day public review.

The MTO diverging diamond project could proceed to Detail Design and construction through either the traditional design-tender-build process, or through the tendering of a design–build contract. If the latter occurs, the design-build contractor will complete the final stages of the MTO Class EA process as follows:

• Develop project Detail Design and construction requirements;
• Document these requirements and any associated environmental mitigation measures in a DCR;
• Publish notices in in local newspapers to advise stakeholders of its availability for 45-day public review; and then
• Proceed to construction.

2.4 Use of Municipal Class Environmental Assessment for Region’s Roundabout at the Glendale Avenue / York Road Intersection and New Airport Road Road Connection from Glendale Avenue

The Municipal Class Environmental Assessment (amended 2007, 2011 and 2015) (Municipal Class EA) is an approved “parent Class EA” under the EA Act. The Municipal Class EA is a self-assessment environmental planning process for four “schedules” of Municipal projects. The five-phase planning and design process that municipalities adhere to in addressing the requirements of the EA Act (described in Section 2.2) is the following:

• Phase 1 - Problem or opportunity;
• Phase 2 - Alternative solutions;
• Phase 3 - Alternative design concepts for the preferred solution;
• Phase 4 - Environmental study report; and
• Phase 5 - Implementation.
Provided a municipality follows the planning process of the Municipal Class EA, no project-specific approval is required under the EA Act.

The study process for the Niagara Region roundabout at the Glendale Avenue / York Road intersection and for the Region’s new Airport Road connection from Glendale Avenue has complied with the requirements of the Municipal Class EA for projects that have the potential for significant environmental effects, which are classified as Schedule ‘C’ projects. The Region’s two projects build on the findings and recommendations of the Niagara Region Transportation Master Plan (October 2017) that identified the need for the QEW/Glendale Avenue interchange improvement and the extension of Glendale Avenue to Queenston Road as an alternative solution to existing and future operational constraints at the Glendale Avenue/York Road intersection. The Transportation Master Plan addressed Phases 1 and 2 of the Municipal Class EA process including consultation with public and stakeholders.

For the Region’s two projects:

- Consultation (including a Notice of Study Commencement and a Public Information Centre) is discussed in Section 3;
- Inventory of natural, socio-economic and cultural environments is discussed in Section 4;
- Section 5.2 describes the Niagara Region Transportation Master Plan (October 2017) and the process and findings for Phases 1 and 2 of the Municipal Class EA. The current study confirms and builds on those findings as follows:
  - Problems and opportunities are discussed in Section 5.2;
  - Alternative Solutions are discussed in Section 6.2;
- The current study complies with the requirements of Municipal Class EA Phases 3 and 4 as follows:
  - Alternative design concepts for the preferred solutions (Phase 3) are discussed in Sections 7.2 and 7.3;
  - The preferred design concepts (also Phase 3) is discussed in Sections 8.2 and 8.3;
  - Impacts (issues and effects) and mitigation measures are discussed in Sections 9.2 and 9.3;
  - This Environmental Study Report (ESR – Phase 4) is being submitted after selection of the preferred design concept;
  - A Notice of Study Completion and Transportation Environmental Study Report (TESR) Submission is being published to advise stakeholder of the release of this TESR for a 45-day public review, and to advise of the opportunity to request a Part II order; and,
  - Detail Design will be undertaken to complete Phase 4, and implementation of the project completes Phase 5 of the Municipal Class EA process.

Niagara Region’s two projects could proceed to Detail Design and implementation through either the traditional design-tender-build process, or through the tendering of a design–build contract. If the latter occurs, the design-build contractor will complete the final phases of the Municipal Class EA study process as follows:
• Develop project Detail Design and construction requirements, thereby completing Phase 4; and then
• Proceed to implementation, which is Phase 5 of the Municipal Class EA process.

2.5 Coordination of Provincial and Municipal Class EA Study Processes for the MTO and Niagara Region Projects

2.5.1 Coordinated MTO and Region EA Proponenty for their Projects

Given the proximity of the QEW / Glendale Avenue interchange and the Glendale Avenue / York Road intersection MTO and Niagara Region staff have worked together to ensure their study processes are coordinated for the following:

• Examination of problems and opportunities;
• Generation and assessment of alternatives to address those problems and opportunities;
• Evaluation and selection of preferred Preliminary Designs / design concepts that support their projects being constructed/implemented concurrently or separately;
• Identification of efficiencies that can be achieved in both design and construction / implementation;
• Project consultation with stakeholders, most of whom have interest in or are potentially impacted by both the MTO and Region projects;
• Class EA documentation for their projects in this Transportation Environmental Study Report; and,
• Compliance with the MTO and Municipal Class EA processes as outlined in Section 2.3 and Section 2.4.

Although the planning, design, and Class EA study processes have been coordinated, MTO and Niagara Region have retained responsibility for their respective projects as follows:

• MTO remains responsible for ensuring that design and construction of the QEW / Glendale Avenue interchange improvements is coordinated and consistent with current and future potential provincial highway improvements to service inter-regional traffic, including the Garden City Skyway, QEW / Highway 405 interchange, and QEW operational improvements.

• Niagara Region remains responsible for ensuring that the design and construction of the roundabout at the Glendale Avenue / York Road intersection and the new Airport Road connection are coordinated and consistent with current and future potential Region and Town road improvements to service traffic for abutting retail and hospitality land uses.

• MTO is responsible for funding the design and construction of the MTO QEW / Glendale Avenue interchange improvement project.

• Niagara Region is responsible for funding the design and implementation of the Region’s roundabout at the Glendale Avenue / York Road intersection and new Airport Road connection from Glendale Avenue.
2.5.2 **MTO and Region May Proceed with Concurrent or Separate Construction / Implementation of their Projects**

Although the MTO and Region’s projects are collectively more effective in addressing their problems and opportunities, and there are construction and traffic staging efficiencies associated with concurrent construction / implementation of these projects, these improvements can proceed separately.

Broader MTO and Niagara Region programming and budgeting considerations may result in separate construction / implementation of the three projects.

If a bump-up request is made under the MTO Class EA for the MTO project but not for the Region’s projects, the Region’s roundabout at the Glendale Avenue / York Road intersection can proceed to implementation while the MTO bump-up request is being resolved.

If a Part II order request is made under the Municipal Class EA for the Region’s projects but not for the MTO project, the MTO QEW / Glendale Avenue interchange improvement project can proceed to construction, while the Region’s Part II order request is being resolved.

2.6 **Changes to Design and Construction that would require a TESR / ESR Addendum**

As indicated in Section 2.3 and Section 2.4, the MTO and Niagara Region projects could proceed to Detail Design and construction / implementation through either the traditional design-tender-build process, or through the tendering of a design–build contract. If the latter occurs, the design-build contractor will be required to complete the final portion of the MTO and Municipal Class EA study processes and proceed to construction / implementation. In addition, as indicated in Section 2.5, the MTO and Niagara Region projects may proceed to construction / implementation separately.

In order to eliminate uncertainty that could arise from the above, and to ensure the continued coordination of their projects, MTO and Niagara Region have agreed that the filing of this Transportation Environmental Study Report (TESR) constitutes a commitment that all of the following apply under both the MTO Class EA and Municipal Class EA processes:

- A TESR / ESR addendum must be prepared and published to document any of the following design or construction changes:
  - Proposed design changes:
    - Design changes to the MTO project that would compromise the design of the Region’s projects as documented in this TESR, such as changes to bridge and approach embankment elevation; and interchange ramp terminal location that would compromise the design/implementation of the new Airport Road connection from Glendale Avenue or the roundabout at the Glendale Avenue / York Road intersection;
    - Design changes to Niagara Region’s projects that would compromise the design of the MTO project as documented in this TESR, such as changes to the location and dimensions of the underpass for the new Airport Road connection from Glendale Avenue, or the roundabout at the Glendale Avenue / York Road intersection;
York Road intersection that would compromise the design, construction or traffic operations of the Diverging Diamond Interchange.

- Proposed construction changes:
  - Construction staging that would cause prolonged closure of the bridge over the QEW, the interchange ramps, Glendale Avenue, York Road, the Glendale Avenue / York Road intersection, or the Glendale Avenue / Taylor Road intersection, and closure of entrances to private properties.

- For these proposed design and construction changes, MTO and Niagara Region must jointly agree to:
  - The field investigations and technical work that are required to support assessment of these proposed changes; and
  - The assessment of the impacts that result from the changes, and the acceptability of those impacts.

- Prior to filing the TESR / ESR addendum for 45-day public review, the following consultation must occur:
  - Consultation acceptable to MTO and Niagara Region with directly impacted stakeholders must be undertaken (emails, letters, meetings, etc.);
  - Presentations to MTO Central Region, and to the Councils of Niagara Region and Niagara-on-the-Lake, if requested; and
  - The foregoing must be documented in the TESR / ESR addendum.

- A public notice of TESR / ESR addendum must comply with the following:
  - The public notice must identify a 45-day public review period, and provide the process to request a Part II Order / Bump-up, as outlined in Section 2.7;
  - The public notice must be published in the same newspapers utilized for the Notice of Study Completion and TESR Submission, and be placed at the same review locations as outlined in Section 3.7; and
  - Letters providing a copy of the public notice must be sent to impacted stakeholders prior to its publication in newspapers.

- The proposed design and construction changes may not be implemented prior to completion of the TESR/ESR 45-day review period, and the resolution of any Part II Order / Bump-up requests that are received. If such requests cannot be resolved, the proposed design and construction changes shall not be implemented.

- If construction / implementation is undertaken through the design-build process, the design-build contractor is required to comply with all of the foregoing, and to apply for and comply with conditions of the applicable MTO and/or Niagara Region permits that are required for implementation of the changes.

2.7 Process to Request a Part II Order / Bump-up

The MTO Class EA process for a Group ‘B’ project, and the Municipal Class EA process for a Schedule ‘C’ project, include the submission of a Transportation Environmental Study Report (TESR). This TESR is being filed for a 45-day period of review.
If members of the public, interested groups, or technical agencies feel that significant outstanding issues have not been addressed through the Class Environmental Assessment process for this Study, and cannot be resolved through discussions with MTO or Niagara Region during the 45-day TESR review period, they may request the Minister of the Environment, Conservation and Parks (MECP) to make a Part II Order or bump-up that would require a higher level of assessment through an Individual Environmental Assessment. The decision of whether a Part II Order is appropriate or necessary rests with the MECP Minister.

MECP provides Form 012-22-2206E, Part II Order Request, to give the Ministry the minimum information needed to commence a review of the request. This form, which requires the requestor to provide a statement of their participation in the Study, their identifying information, and the details of their request, can be obtained at:

http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=&ENV=WWE&TIT=2206&NO=012-2206E

MECP requests that the completed form and any supporting information be provided to all of the following:

<table>
<thead>
<tr>
<th>Minister</th>
</tr>
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<tbody>
<tr>
<td>Ministry of the Environment Conservation and Parks</td>
</tr>
<tr>
<td>Ferguson Block, 77 Wellesley St. W, 11th Floor</td>
</tr>
<tr>
<td>Toronto ON M7A 2T5</td>
</tr>
<tr>
<td>Fax: 416-314-8452</td>
</tr>
<tr>
<td>Email: <a href="mailto:Minister.MOECC@ontario.ca">Minister.MOECC@ontario.ca</a></td>
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<table>
<thead>
<tr>
<th>Director</th>
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<tbody>
<tr>
<td>Environmental Assessment and Permissions Branch</td>
</tr>
<tr>
<td>Ministry of the Environment, Conservation and Parks</td>
</tr>
<tr>
<td>135 St. Clair Ave W, 1st Floor</td>
</tr>
<tr>
<td>Toronto ON M4V 1P5</td>
</tr>
<tr>
<td>Email: <a href="mailto:MOECCpermissions@ontario.ca">MOECCpermissions@ontario.ca</a></td>
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<thead>
<tr>
<th>Hossein Hosseini, P. Eng.</th>
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<tbody>
<tr>
<td>MTO Project Manager</td>
</tr>
<tr>
<td>Ministry of Transportation Ontario</td>
</tr>
<tr>
<td>Central Region Planning and Design Office Hamilton/Niagara</td>
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<tr>
<td>159 Sir William Hearst Avenue, Building D, 4th Floor</td>
</tr>
<tr>
<td>Downsview, Ontario M3M 0B7</td>
</tr>
<tr>
<td>Telephone: 416-235-5513</td>
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<td>Email: <a href="mailto:hossein.hosseini@ontario.ca">hossein.hosseini@ontario.ca</a></td>
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<thead>
<tr>
<th>Carolyn Ryall</th>
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<tbody>
<tr>
<td>Niagara Region Project Manager</td>
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<tr>
<td>Director Transportation Services Division Public Works</td>
</tr>
<tr>
<td>Niagara Region</td>
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<tr>
<td>1815 Sir Isaac Brock Way, PO Box 1042</td>
</tr>
<tr>
<td>Thorold ON L2V 4T7</td>
</tr>
<tr>
<td>Telephone: 905-980-6000 ext.3620</td>
</tr>
<tr>
<td>Toll Free: 1-800-263-7215</td>
</tr>
<tr>
<td>Email: <a href="mailto:Carolyn.Ryall@niagararegion.ca">Carolyn.Ryall@niagararegion.ca</a></td>
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<table>
<thead>
<tr>
<th>Jon Newman, P. Eng.</th>
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<tbody>
<tr>
<td>Consultant Project Manager AECOM</td>
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<td>300 Water Street</td>
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<td>Telephone.: 905-668-4021 ext. 2228</td>
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<tr>
<td>Toll Free: 1-800-668-1983</td>
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<tr>
<td>Fax: 905-668-0221</td>
</tr>
<tr>
<td>E-mail: <a href="mailto:jon.newman@aecom.com">jon.newman@aecom.com</a></td>
</tr>
</tbody>
</table>

If no Part II Orders are outstanding at the end of the 45-day review period, the Project is considered to have met the requirements of the MTO and Municipal Class EA processes, and MTO and Niagara Region may proceed to Detail Design and construction/implementation. See Section 3.7 regarding details on the Notice of Study Completion and TESR Submission.
3. Consultation

3.1 Consultation Overview

Consultation with stakeholders was an essential part of this Study, given the importance of the QEW / Glendale Avenue interchange as the primary access from the provincial highway system to Niagara-on-the-Lake, and the close proximity of hospitality, retail and institutional land uses.

During this Study, members of the public, municipalities, government agencies, Indigenous Communities and other stakeholders were provided the opportunity to review and comment on traffic issues, access to adjacent land uses and to Niagara-on-the-Lake, environmental conditions, alternatives considered, and the Recommended Plan.

A mailing list of interested individuals was established and continuously updated throughout the Study. The purpose of this list was to ensure that individuals who had an interest in the Study were kept informed of upcoming events and the progress of the Project.

The following sections describe the details of the consultation undertaken for this Study.

3.2 Coordinated MTO and Niagara Region Consultation

Consultation was initiated by AECOM on behalf of MTO for the QEW / Glendale Avenue interchange improvements. As the Study progressed, this consultation was extended to include Niagara Region’s roundabout at the Glendale Avenue / York Road intersection and new Airport Road connection from Glendale Avenue.

Given the close proximity of the MTO and Region projects, MTO and Niagara Region staff worked together as a Project Team to ensure their study processes were coordinated. Details of the EA process coordination are provided in Section 2.5.

The Public Information Centre had staff participation from both MTO and the Region, and both the TESR and the Notice of Study Completion and TESR Submission were issued on behalf of both organizations.

3.3 Study Website

A study website was established at http://QEW-Glendale-Interchange.ca. This website, which went live on December 4, 2017, provides a project overview, information on the class environmental assessment process, consultation, reports and project schedule.

3.4 Notice of Study Commencement

At the outset of the Study, a Notice of Study Commencement was published in the Niagara This Week newspaper on December 7, 2017, to inform area residents of the Project and invite them to contact the Project Team if they required information and/or wished to be placed on the
project mailing list. Notification letters were distributed on December 7, 2017, to individuals on the project mailing list, including government agencies, Indigenous Communities, municipalities, and interest groups. Notification letters sent to external agencies included a Contact Information Form that provided an opportunity to express their concerns and comments on the Study.

Copies of the study commencement notification materials are provided in Appendix A.

### 3.5 Notice of Public Information Centre (PIC)

One Public Information Centre (PIC) was held for this Project on April 25, 2018, at the Hilton Garden Inn in Niagara-on-the-Lake. Notice of PIC was provided through the following:

- Publication of Ontario Government Notice (Notice of PIC) in *Niagara This Week* on April 12, 2018;
- Letters mailed to individuals on the project mailing list, including Indigenous Communities, MPs and MPPs, external agencies and members of the public on April 9, 2018;
- Distribution of approximately 5,000 copies of the Ontario Government Notice (Notice of PIC) via Canada Post Neighbourhood Mail to much of Niagara-on-the-Lake on April 19, 2018;
- Hand delivery by AECOM staff to individual stores in the Niagara Outlet Collection Mall, Niagara College, nearby hotels and businesses on April 18 and 19, 2018; and,
- Publication of the Notice of PIC on the project website on April 19, 2018.

### 3.6 Public Information Centre

A PIC was held as follows:

**Wednesday April 25, 2018**

4:00 p.m. to 8:00 p.m.

Hilton Garden Inn – Niagara-on-the-Lake

500 York Road, Niagara-on-the-Lake

The format of the PIC was an informal drop-in centre (open house) with comment sheets provided to attendees for them to fill out and return to the Project Team. Additional pre-PIC sessions were held as follows, shown in Table **3-1**:

<table>
<thead>
<tr>
<th>Time</th>
<th>Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00pm to 2:00pm</td>
<td>Pre-PIC local business session</td>
</tr>
<tr>
<td>3:00pm to 4:00pm</td>
<td>Pre-PIC agency and municipal session</td>
</tr>
</tbody>
</table>

The purpose of the PIC was to introduce the Study, present the traffic issues, environmental conditions, alternatives considered, and the Recommended Plan, and to provide interested parties with the opportunity to discuss the Study and provide input to the Project Team members from MTO, Niagara Region and AECOM. Material presented at the PIC can be found in Appendix B.
A total of 100 individuals signed the visitor’s register as follows, shown in Table 3-2:

### Table 3-2: Number of Individuals Signed-in per Pre-PIC Session

<table>
<thead>
<tr>
<th>Number Signed In</th>
<th>Time</th>
<th>PIC Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>1:00pm to 2:00pm</td>
<td>Pre-PIC business session</td>
</tr>
<tr>
<td>8</td>
<td>3:00pm to 4:00pm</td>
<td>Pre-PIC agency and municipal session</td>
</tr>
<tr>
<td>73</td>
<td>4:00pm to 8:00pm</td>
<td>General public session</td>
</tr>
</tbody>
</table>

A total of 29 written comment sheets were received at the PIC and 2 were received by email/fax after the PIC. Table 3-3 and Table 3-4 summarize the key comments, issues and concerns raised from the PIC and the corresponding responses provided by the Project Team.

### Table 3-3: Verbal Comments Received at PIC

#### Base Case Diverging Diamond Interchange (DDI) Alternative C1 – General Comments:
- General support for the DDI concept.
- Enthusiasm for the use of the video example showing how the DDI works; very informative.
- Does this design allow for future potential expansion of the QEW by one lane each direction?
- Niagara College wants to ensure that their emergency access from Glendale Avenue East is maintained.
- Walker Industries noted that the new interchange design will support their key movements better than the existing interchange.
- How will traffic signals be synchronized to ensure smooth flow of traffic through the bridge crossing?
- Concern that snow cover will hide pavement markings and cause confusion for motorists.
- Recommended double-lane W-NS interchange exit ramp to address outlet mall queuing
- Concerns about potential measures in the event of a black out and the traffic signals are not working.
- Drivers would prefer the full jersey barriers separating Glendale Avenue from the multi-use path because they reduce distractions from opposing traffic and to guide motorists through the cross-over sections easily.

#### DDI Base Case - Active Transportation and Path Comments:
- Widen the multi-use path from 3m to 4m, and consider aesthetic enhancements.
- Concern for pedestrians and cyclists safety while crossing interchange ramps, traffic circle, and entrance of the commuter parking lot.
- Improve visual markings and signage for pedestrian pathway to ensure safe and simple
- Extend multi-use path to the OTIC building (potential use of washrooms and recommendation of future tire pumping station).
- Concern that the length of the central multi-use path between barriers is too long for sidewalk snow removal equipment to handle.

**DDI Base Case - General Construction Staging and Timing Questions:**
- When will the construction start and how long it will take?
- How long will the bridge and interchange ramps be closed?

**DDI Base Case - Traffic Issues Associated with the Outlet Mall:**
- Improve signage to direct outlet mall traffic to Niagara-on-the-Green Boulevard (second / more southerly entrance from Glendale Avenue) in addition to Taylor Road.
- Traffic queuing into the outlet mall a major issue, extending on to the QEW off ramps during holiday weekend peak period shopping.

**DDI Base Case - White Oaks Resort and Spa:**
- White Oaks is worried that the new interchange design could limit their ultimate build-out (which includes two more towers).
- White Oaks is interested in acquiring potentially surplus MTO lands after the existing W-NS ramps are removed.

**DDI Regional Enhancements**
- Concern from truck operators that the Glendale Avenue / York Road roundabout will not safely / effectively accommodate heavy trucks.
- Recommended that the Glendale Avenue / York Road roundabout be shifted easterly to reduce property impacts.
- Enthusiasm for the new Airport Road connection from Glendale Avenue.
- Recommended that Niagara Region’s new Airport Road connection be enhanced with a ramp from the airport road connection to the QEW eastbound.
- Recommended that Niagara Region’s new Airport Road connection be enhanced with an eastbound ramp to Old York Road linking to Townline Road east of the Glendale Avenue intersection.
- Concerned that Niagara Region’s new Airport Road connection will encourage eastbound York Road motorists to use the commuter parking lot to bypass the Glendale Avenue and York Road intersection to access Glendale Avenue southbound.
- Recommended a QEW fly-over linking Townline Road and Glendale Avenue East.

**DDI - Other Comments:**
- A farm to the north of the Study Area currently experiences drainage issues with salty water as the property is at low grade; expressed concerns that these improvements will make the problem worse.
- Concern that the bridge will not be able to support movement of large agricultural equipment.
- Concerns for tree removal.
- There was a concern that landowners adjacent to the proposed commuter parking lot will object to MTO use of this space given that it has been vacant for an extended period of time.
- Concern about traffic weaving between Glendale Avenue and Highway 405.
- Is this Project related to the Garden City Skyway project, and if so, what is their relative construction timing?
- Question about the property acquisition process.

Table 3-4: Key PIC Comments and Project Team Responses

<table>
<thead>
<tr>
<th>Key Issues and Comments</th>
<th>Project Team Responses</th>
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<tbody>
<tr>
<td><strong>Base Case Diverging Diamond Interchange (DDI) Alternative C1 – General Comments</strong></td>
<td></td>
</tr>
<tr>
<td>Will traffic exiting the QEW onto Glendale Avenue treat a red light at the intersection as a stop sign and be able to move through the intersection if there is no traffic coming?</td>
<td>Traffic using the interchange will be required to obey traffic signals as per the Highway Traffic Act, and will not be permitted to turn on the red. The two interchange intersections will always operate such that traffic streams will not conflict or overlap with each other.</td>
</tr>
<tr>
<td>Concerned that the circumferences of the on and off ramps in the interchange are too small and may cause accidents from vehicles sliding off in bad weather.</td>
<td>The interchange has been designed in accordance with the Ministry’s current standards, which include safety as a key consideration. Geometric features of the ramps will be further examined and refined if necessary during the next phase of the project to ensure safety in all weather conditions.</td>
</tr>
<tr>
<td>Concerned that speeding is a major issue found through DDIs in the United States and wants to know what measures will be taken to ensure this isn’t an issue at this interchange.</td>
<td>Operational speeds through the DDI are not expected to be different from those through the typical Parclo A4 interchange configuration, which is the most common interchange configuration in Ontario. Several factors are considered during the design of the interchange including safety as a key component. Additional traffic-calming features and enhancements will be considered during the design process to mitigate collision frequency and severity.</td>
</tr>
<tr>
<td>What systems are in place in the event of a power outage?</td>
<td>The traffic signals are powered by an Uninterrupted Power Supply (UPS) system which provides back-up power to the signals for several hours in the event of a blackout. In the unlikely event that the UPS system fails during a blackout, the signalized intersections would be treated as a 4-way stop as per the Highway Traffic Act.</td>
</tr>
<tr>
<td>Will the intersection be easily navigated if the pavement markings are covered by snowfall?</td>
<td>The design for the interchange will include pavement markings as well as signage to ensure motorists are provided proper direction and guidance through the interchange during inclement weather. At the cross-over intersections, the angle vehicles approach the intersection...</td>
</tr>
<tr>
<td>Key Issues and Comments</td>
<td>Project Team Responses</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Will there be room on the bridge and throughout the interchange for adequate snow removal?</td>
<td>During Detail Design, further examination on engineering and construction details will be developed, including design features that impact snow removal.</td>
</tr>
<tr>
<td>Concerned regarding ease of use of the DDI for drivers unfamiliar with how it works.</td>
<td>The Diverging Diamond Interchange reduces the overall number of conflict points between vehicular traffic and cyclists/pedestrians compared to other more common interchange configurations. As with any other interchange, there will be lane marking, signage and traffic signals in place to direct traffic through the interchange.</td>
</tr>
</tbody>
</table>

**DDI Base Case - Active Transportation and Path Comments**

| Concerned for pedestrians and cyclists safety while crossing interchange ramps, traffic circle, and entrance of the commuter parking lot. | The exit ramp terminals onto Glendale Avenue will be signalized to allow for the safe crossing of pedestrians and cyclists, and it is not uncommon across the region for pedestrians and cyclists to share multi-use pathways. |
| Concerned that the length of the central multi-use path between barriers is too long for sidewalk snow removal equipment to handle. | During Detail Design, further examination on engineering and construction details will be developed, including design features that impact snow removal. |

**DDI Base Case - General Construction Staging and Timing Questions**

| When will construction start and how long will it take? | The exact construction start date has yet to be determined and is dependent upon the receipt of environmental approvals and funding. |

**DDI Base Case - Traffic Issues Associated with the Outlet Mall**

| Traffic queuing into the outlet mall is a major issue, extending on to the QEW off ramps during holiday weekend peak period shopping. | Niagara Region is aware of the queuing and congestion associated with the Outlet Mall and is actively working with the Mall to address these issues. |

**DDI Regional Enhancements**

| Will transport trucks and other large vehicles be able to easily navigate the new roundabout? | Roundabouts typically accommodate large vehicles and their extended turning radius by incorporating design features such as a mountable curb. |

**DDI - Other Comments**

| Have future traffic numbers been taken into account for this study? | The traffic analysis assessed traffic volumes based on available growth data in the area for the 2031 and 2041 horizon years. |
| Concerned that relocation of the Ontario Tourism Information Centre was a major feature in selecting the preferred interchange alternative. | The predominant criteria in selecting the preferred interchange configuration were traffic operations, interchange geometry and active transportation. Accommodating the OTIC was not a predominant factor, and this was considered within the footprint of the commuter parking lot. |
| Concerned about impacts | The design for the QEW / Glendale Avenue Interchange |
**3.7 Notice of Study Completion and Transportation Environmental Study Report (TESR) Submission**

The Notice of Study Completion and TESR Submission was posted jointly by MTO and Niagara Region, to reflect coordination of their projects, and documentation of their projects in a shared TESR.

Notice of Study Completion and TESR Submission was provided through the following:

- Publication of the Notice of Study Completion and TESR Submission in *Niagara This Week* on August 16, 2018 (a copy of the notice is provided in Appendix A);
- Letters mailed to individuals on the project mailing list, including Indigenous Communities, MPs and MPPs, external agencies and members of the public on August 13, 2018;
- Distribution of approximately 5,000 copies of the Ontario Government Notice (Notice of Public Information Centre) via Canada Post Neighbourhood Mail to much of Niagara-on-the-Lake on August 13, 2018; and
- Publication on the project website

**3.8 Municipal Consultation and Municipal Council Presentations**

The Project Team initially met with Niagara Region and the Town of Niagara-on-the-Lake staff on March 13, 2018, to obtain Study Area information, input on the generation, assessment and evaluation of alternatives and their potential impacts, and support for the Recommended Plan. As noted in Section 3.2, this consultation evolved to a Project Team comprised of both MTO and Region staff because of the close proximity of the MTO and Region projects, and the benefits of coordinated study processes.

The QEW / Glendale Avenue Interchange Improvements Project was presented to the Niagara Region Public Works Committee on April 3, 2018, and the Town of Niagara-on-the-Lake Council on April 16, 2018. This presentation included the Recommended Plan of the DDI, an explanation of how the DDI operates, key alternative considerations, potential Regional enhancements comprised of the roundabout at the Glendale Avenue / York Road intersection and the new Airport Road connection from Glendale Avenue, and notice of the upcoming PIC.

Relevant correspondence with municipalities is summarized in Table 3-5 and documented in Appendix C.
3.9 Agency Consultation

The Project Team consulted with the following elected officials, federal and provincial ministries and agencies, interest groups, emergency services providers and utility companies:

**Elected Officials**
- Honourable Rob Nicholson (MP – Niagara Falls)
- Honourable Wayne Gates (MPP – Niagara Falls)

**External Agencies and Interest Groups**
- Indigenous and Northern Affairs Canada
- Ministry of Indigenous Relations and Reconciliation
- Fisheries and Oceans Canada (DFO)
- Ministry of Tourism, Culture, and Sport
- Ministry of Economic Development and Growth
- Ministry of the Environment, Conservation and Parks (formerly Ministry of the Environment and Climate Change)
- Ministry of Municipal Affairs and Housing
- Ministry of Natural Resources and Forestry
- Ministry of Agriculture, Food and Rural Affairs
- Metrolinx
- Niagara Parks Commission
- Niagara Catholic School Board
- District School Board of Niagara
- Niagara Student Transportation Services
- Ontario Realty Corporation
- Niagara Peninsula Conservation Authority
- Greenbelt Council
- Preservation of Agricultural Lands
- Ontario Trucking Association

**Emergency Services**
- Niagara-on-the-Lake Fire Department
- Niagara Regional Police Services
- Niagara Emergency Medical Services

**Utilities**
- Hydro One Networks Inc.
- Activo Inc.
- Bell Canada
- Canadian Niagara Power Inc.
- Niagara-on-the-Lake Hydro
- Enbridge Consumer Gas
- Cogeco
- Union Gas Limited

At the outset of the Study, external agencies were contacted by mail and asked to provide input relative to their mandate and to support the inventory of environmental conditions within the Study Area.
Relevant correspondence with external agencies is summarized in Table 3-5 and documented in Appendix C.

3.10 Indigenous Community Consultation

Letters to announce the commencement of the Study and seek information were mailed to the following Indigenous Communities and organizations:

- Association of Iroquois and Allied Indians
- Haudenosaunee Six Nations Confederacy Council
- Métis Nation of Ontario
- Mississaugas of the New Credit First Nation
- Niagara Region Métis Council
- Six Nations of the Grand River
- Haudenosaunee Development Institute

Correspondence with Indigenous Communities is summarized in Table 3-5 and documented in Appendix C.

During the next phase of the Project, the above noted external agencies and Indigenous Communities will continue to be consulted regarding the refinement of the design.

Table 3-5: Key Project Correspondence

<table>
<thead>
<tr>
<th>Municipality / External Agency / Indigenous Community</th>
<th>Issues / Concerns</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metrolinx</td>
<td>Wished to be added to the project mailing list.</td>
<td>Added to project mailing list.</td>
</tr>
<tr>
<td>Ontario Ministry of Agriculture, Food and Rural Affairs</td>
<td>Wished to be added to the project mailing list.</td>
<td>Added to project mailing list.</td>
</tr>
<tr>
<td>Ontario Ministry of the Environment, Conservation and Parks (formerly Ministry of the Environment and Climate Change)</td>
<td>Wished to be added to the project mailing list.</td>
<td>Added to project mailing list.</td>
</tr>
<tr>
<td>Ontario Tourism Marketing Partnership Corporation (Ministry of Culture, Tourism and Sport)</td>
<td>Wished to be added to the project mailing list and to hold a meeting to discuss the potential relocation of the Ontario Travel Information Centre.</td>
<td>Added to project mailing list, a meeting was arranged to discuss OTIC relocation and further discussions were held regarding potential relocation areas that would best suit the needs of the MTCS.</td>
</tr>
<tr>
<td>Town of Niagara-on-the-Lake</td>
<td>Requested a change in staff member present on the project mailing list.</td>
<td>Changes were made to project mailing list.</td>
</tr>
<tr>
<td>Municipality / External Agency / Indigenous Community</td>
<td>Issues / Concerns</td>
<td>Response</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mississaugas of the New Credit First Nation</td>
<td>Requested that draft archaeological reports be provided for their review when completed and that they be contacted by MTO regarding the Project to discuss any potential impacts to their land and/or treaty rights. It was also noted that they wish to have their Field Liaison Representatives participate in all archaeological field work within MNCFN territory, including Stages 2 through 4.</td>
<td>The Stage 1 archaeological assessment report will be provided to Mississaugas of the New Credit First Nation (MNCFN) after its acceptance by the Ministry of Tourism, Culture and Sport. MNCFN will be contacted regarding subsequent archaeology field work.</td>
</tr>
</tbody>
</table>
4. Overview of Existing Conditions in the Study Area

4.1 Natural Environment Existing Conditions

4.1.1 Physiography and Soils

According to the Physiography of Southern Ontario (Chapman and Putnam, 1984) and “Map 2226-Physiography of South Central Southern Ontario” (Ontario Ministry of Natural Resources (OMNR), 1972), the Study Area is located within the Iroquois Plain physiographic region, which is comprised mostly of permeable sands and situated along the shoreline of the current Lake Ontario. Lake Iroquois was a high-level glacially-dammed lake which formed during the regional deglaciation approximately 12,500 years ago. The Lake Iroquois Plain extends within Ontario approximately from the Niagara River to the Trent River.

The portion of Iroquois Plain within the Study Area is generally referred to as the Niagara Fruit Belt, extending from Hamilton easterly to the Niagara River between the Niagara Escarpment and Lake Ontario. The Niagara Fruit Belt is comprised of relatively flat sand and clay deposits.

According to the topographic map for the area (http://atlas.gc.ca/site/english/toporama/, accessed March 1, 2018), the topography in the vicinity of the Study Area is undulating in nature, with a general downward slope from the southeast to the northwest. The elevations of the Study Area range from approximately 110 m above mean sea level (masl) at the northwest end to approximately 130 m masl at the southeast end. The Homer Escarpment (part of the Niagara Escarpment), which is located at the east/southeast end of the Study Area, rises above the surrounding area for over 30 m to a maximum elevation of approximately 175 m masl.

4.1.2 Drainage and Hydrogeology

The Study Area falls within the Eight Mile Creek sub-watershed, which is part of the Niagara-on-the-Lake Watershed and drains northerly into Lake Ontario. Eight Mile Creek and its tributaries cross the Study Area at several locations. A number of stormwater management and/or natural ponds are present within southeast quadrant of the interchange. Although, two ponds are shown on the topographic map within the southwest quadrant of the interchange along the original route of Eight Mile Creek (in the area of The Outlet Collection Mall); these two ponds were not observed during the site visit.

Based on the Ministry of the Environment, Conservation and Parks (MEPC) well records and the overburden thickness map generated as part of the Niagara Peninsula Source Protection Area (NPSPA) Assessment Report, the overburden thickness within the Study Area ranges from approximately 15 m to 52 m, except for the southeast end of the Study Area where bedrock is exposed at the ground surface (Homer Escarpment). The overburden deposit is generally thinner at the southeast end of the Study Area in the vicinity of the Homer Escarpment, when compared to remaining Study Area, with the greatest overburden thickness being observed in northwest end of the Study Area.
The dominant aquifer system present in the vicinity of the Study Area is the overburden and bedrock interface aquifer. Overburden surficial aquifer systems may be present in the discontinuous sand and gravel lenses/layers within the clay and silt (till) deposits.

Potable water within the majority of the Study Area is municipally supplied with water obtained from Lake Ontario. Limited areas at the northwest end (in the vicinity of Coon Road and north of Queenston Road) and southeast end (Homer Escarpment) of the Study Area are not municipally supplied.

4.1.3 Fish and Fish Habitat

Through the background information review, supplemented by the 2017 fish habitat field investigations, it was determined that the watercourses associated with culverts in the vicinity of the QEW / Glendale Avenue interchange are predominantly intermittent watercourses (one tributary is permanent) which provide marginal non-limiting fish habitat that supports commercial, recreational, or Aboriginal fisheries downstream of the Study Area with contributions of flow.

Six Mile Creek and Eight Mile Creek were identified as systems that support a diverse fish community which includes a mixed warm, cool and coldwater assemblages; however, these fish populations are likely only present downstream of the Study Area where habitat conditions are more suitable to support fish populations.

Figure 8-3 in Section 8.1.6 provides a map that shows the watercourses and proposed culvert structure work for this Project. Table 9-1 in Section 9.1.1.3 provides fisheries habitat information at each culvert.

The in-water work timing window (i.e., when in-water works cannot occur) for tributaries of the Six Mile Creek within the Study Area (as provided by MNRF, 2017) is from March 1st to June 30th for the spring timing restriction and September 1st to November 30th for the fall timing restriction. However, since the fall timing window is intended to protect migratory salmonids and there is no suitable habitat for salmonids in the Study Area, it is recommended that only the spring timing window be applied to the proposed works. Therefore, in-water work may not occur between March 1st and June 30th of any given year.

No Critical Habitat (SARA) or aquatic SAR habitat was identified within the Study Area. No important or exceptional habitat was identified. In summary, habitat conditions observed in the Study Area were generally uniform in nature and provided either conveyance of overland flow and nutrients to downstream habitat, or provided marginal habitat for feeding and rearing for a small population of forage fish and/or small-bodied fish.

4.1.4 Terrestrial Ecosystems

The terrestrial ecosystem existing conditions are largely based on the background review and field investigations completed by Dillon Consulting (2017). Where data gaps were identified, supplemental information was obtained by AECOM through a review of the following secondary sources and field investigations:

- MNRF Land Information Ontario (LIO) (2018a); and,
4.1.4.1 Designated Areas

There are no Areas of Natural and Scientific Interest (ANSIs), wetlands, significant valleylands, provincial parks or conservation areas within the Study Area.

Woodlands identified through LIO mapping (MNRF, 2018a) occurring north and northeast of the QEW and Glendale Avenue interchange may be considered significant, in accordance with the Niagara Region Official Plan (2014) Policy 7.B.1.5, given that they are located within lands designated as Urban Area and exceed the minimum size criteria of 2 ha. According to Niagara Peninsula Conservation Authority public mapping (2015), these significant woodlands are identified as Environmental Conservation Areas (ECA) of Niagara Region’s Core Natural Heritage System.

4.1.4.2 Policy Areas

The Study Area falls within lands designated as protected countryside under the Greenbelt Plan.

4.1.4.3 Vegetation Communities

The Study Area is situated in an urbanized setting comprised of a mix of commercial and residential land uses. Figure 4-1 shows the Ecological Land Classifications (ELCs) / vegetation communities in the Study Area. Naturally occurring vegetation communities are therefore limited and consist of meadow, thicket, woodland, forest and marsh communities. The QEW right-of-way (ROW) generally consists of Mineral Cultural Meadow (CUM1) communities, manicured lawn with planted trees and/or hedgerow, and Mineral Meadow Marsh (MAM2) dominated by common reed (Phragmites australis) occurring as patches in depressions and areas of ponded water as well as along watercourses within the Study Area.

Although none of the vegetation communities are considered provincially significant, the Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4) located just north of the interchange ramp to QEW eastbound is considered rare to uncommon in Ecoregion 7E (S-rank of S2S3) according to Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). The Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2) located in the northeast and southeast quadrants of the interchange is also considered important to this Study Area. No Species at Risk (SAR) or Species of Special Concern (SOCC) plants were identified during field investigations; however, locally rare or uncommon plants observed included the following likely planted species: eastern white cedar (Thuja occidentalis) and tamarack (Larix laricina), bur oak (Quercus macrocarpa) and balsam poplar.
Figure 4-1: Ecological Land Classifications / Vegetation Communities
Cultural communities are vegetation communities originating from, or maintained by, anthropogenic-based disturbances, often containing a large proportion of non-native species.

- **Mineral Cultural Meadow Ecosite (CUM1):**
  
  This community encompassed Dry-Fresh Graminoid Meadow Ecosite (MEGM3) and Dry-Fresh Mixed Meadow Ecosite (MEMM3) identified by Dillon Consulting (2017) and was comprised of species which prefer disturbed sites and are relatively resilient. Species include Canada goldenrod (*Solidago canadensis*), New England aster (*Aster novae-angliae*), wild carrot (*Daucus carota*), grasses (*Poa sp*), brown knapweed (*Centaurea jacea*) and bull thistle (*Cirsium vulgare*). This community forms a mosaic with the Mineral Cultural Woodland (CUW1) described below, where patches of meadow are interspersed between patches of woodland.

- **Mineral Cultural Thicket Ecosite (CUT1):**
  
  A very high occurrence of shrubs (80% cover) and a relatively low occurrence of herbaceous species (20% cover) was observed within this community. Shrubs included mainly the following species: common buckthorn (*Rhamnus cathartica*), silky dogwood (*Cornus amomum*), Tartarian honeysuckle (*Lonicera tatarica*) and staghorn sumac (*Rhus hirta*). The less prevalent ground layer consisted of species such as smooth brome (*Bromus inermis*), orchard grass (*Dactylis glomerata*), common reed, goldenrod species (*Solidago sp.*) and tall white aster (*Symphyotrichum lanceolatum*).

- **Mineral Cultural Woodland Ecosite (CUW1) / Cultural Hedgerow (CUH):**
  
  A series of planted trees such as Norway spruce (*Picea abies*), white pine (*Pinus strobus*), red pine (*Pinus resinosa*), black walnut (*Juglans nigra*), American basswood (*Tilia americana*), white oak (*Quercus alba*), red oak (*Quercus rubra*), pin oak (*Quercus palustris*), black locust (*Robinia pseudoacacia*) and American beech (*Fagus grandifolia*) occurred within the Study Area.

Forest communities are defined as those that have at least 60% tree cover.

- **Fresh-Moist Black Walnut Lowland Deciduous Forest Type (FOD7-4):**
  
  This community was located just north of the interchange ramp to QEW eastbound. Tree cover consisted of black walnut, American basswood, white ash (*Fraxinus americana*), green ash (*Fraxinus pennsylvanica*) and white oak associates. The shrub layer cover was approximately 40% and consisted of common buckthorn, grey dogwood, redberry dogwood, staghorn sumac and multiflora rose (*Rosa multiflora*). Species observed within the ground layer included dominant Canada goldenrod, smooth brome, black medick (*Medicago lupulina*), riverbank grape (*Vitis riparia*), reed canary grass (*Phalaris arundinacea*), common reed, brown knapweed, spotted knapweed (*Centaurea biebersteinii*).

- **Dry-Fresh Oak-Maple-Hickory Deciduous Forest Ecosite (FOD2):**
  
  Topography of this mature forest community located in the northeast and southeast quadrants of the interchange was described as flat and slightly upland relative to the surroundings. The canopy consisted of white oak, red oak, pin oak, white ash and green ash. The sub-canopy was dominated by red oak, bitternut hickory (*Carya cordiformis*), balsam poplar (*Populus balsamifera*) and green ash. Species observed within the shrub layer included silky dogwood and multiflora rose. The ground layer
consisted of dominant brown knapweed, English plantain (*Plantago lanceolata*), Kentucky bluegrass (*Poa pratensis*), and wild carrot.

Marsh communities are those that have less than or equal to 25% tree and shrub cover with the dominant vegetation being highly tolerable to hydric conditions. Small marsh communities occur scattered throughout the Study Area typically forming a mosaic with Mineral Cultural Meadow (CUM1) communities.

- **Mineral Meadow Marsh (MAM2):**
  These vegetation communities represent patches of common reed that were commonly observed in depressions and areas of ponded water as well as along watercourses throughout the Study Area.

- **Reed Canary Grass Mineral Meadow Marsh Type (MAM2-2):**
  This community formed a mosaic with cultural meadow, located southeast of the QEW and Glendale Avenue interchange. Vegetation cover for this community was dominated by emergent plants such as reed canary grass, broad-leaved cattail (*Typha latifolia*), narrow cattail (*Typha angustifolia*), lamp rush (*Juncus effusus var. *solutus*), path rush (*Juncus tenuis*) and abundant common reed.

- **Cattail Mineral Shallow Marsh Type (MAS2-2):**
  This community is located southwest of the QEW and Glendale Avenue interchange. Species composition within this community was dominated by broad-leaved cattail, narrow cattail, lamp rush and path rush.

4.1.4.4 **Wildlife**

A cup-shaped nest was identified near the culvert inlet under Glendale Avenue north of York Road on October 18, 2017. The nest was inactive at the time of surveys and therefore the species could not be determined. However, given the materials used to construct the nest, the nest possibly belonged to a Barn Swallow (*Hirundo rustica*).

The woodlands are considered candidate Significant Wildlife Habitat (SWH) given their potential to support bat maternity colonies and/or breeding habitat for Eastern Wood-pewee (*Contopus virens*), an SOCC. While bat maternity colonies may be present within the Study Area, smaller woodlands within the Study Area unlikely represent SWH (Dillon Consulting, 2017).

In addition, low abundances of common milkweed (*Asclepias syriaca*) were observed within the Mineral Cultural Meadow (CUM1) communities within the Study Area; as such, suitable foraging and marginal breeding habitat for Monarch (*Danaus plexippus*), another SOCC, was identified by AECOM.

Other rare vegetation communities, such as the Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4) within the Study Area are considered SWH in accordance with the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF, 2015a).
4.1.5 Species at Risk (SAR)

The review of background information identified 31 Endangered and 16 Threatened species with potential to occur in the general vicinity of the Study Area based on a review of background information. Although no SAR were observed during field investigations completed, potentially suitable habitat was identified within the Study Area for four Endangered species and one Threatened species listed in Table 4-1.

### Table 4-1: Species at Risk with Potential Habitats in the Study Area

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Common Name</th>
<th>Species Name</th>
<th>ESA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird</td>
<td>Barn Swallow</td>
<td>Hirundo rustica</td>
<td>THR</td>
</tr>
<tr>
<td>Mammal</td>
<td>Eastern Small-footed Myotis</td>
<td>Myotis leibii</td>
<td>END</td>
</tr>
<tr>
<td></td>
<td>Little Brown Myotis</td>
<td>Myotis lucifugus</td>
<td>END</td>
</tr>
<tr>
<td></td>
<td>Northern Myotis</td>
<td>Myotis septentrionalis</td>
<td>END</td>
</tr>
<tr>
<td></td>
<td>Tri-coloured bat</td>
<td>Perimyotis subflavus</td>
<td>END</td>
</tr>
</tbody>
</table>

**ESA Status:** The Endangered Species Act 2007 (ESA) protects species listed as Threatened and Endangered on the Species at Risk in Ontario (SARO) List on provincial and private land. The Minister lists species on the SARO list based on recommendations from the Committee on the Status of Species at Risk in Ontario (COSSARO), which evaluates the conservation status of species occurring in Ontario. The following are the categories of at risk:

- **END** (Endangered) – A species facing imminent extinction or extirpation in Ontario.
- **THR** (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

Barn Swallows occur in close association with human-made structures, building their cup-shaped mud nests almost exclusively on structures such as open barns, under bridges and in culverts (MNRF, 2018c). Structures within the Study Area provide suitable habitat and one possible Barn Swallow nest was observed near the culvert inlet under Glendale Avenue north of York Road on October 18, 2017; however, given the time of surveys, identity of the species could not be confirmed.

Bat SAR use wooded areas for summer or maternity roosting. Suitable habitat within the Study Area is represented by Mineral Cultural Woodland (CUW1) and Deciduous Forest (FOD) communities.

A review of the MNRF NHIC data did not identify any aquatic SAR within the Study Area. According to DFO aquatic SAR mapping, no aquatic SAR were identified within the vicinity the Study Area.

### 4.2 Socio-Economic Environment Existing Conditions

This Study is located in the Town of Niagara-on-the-Lake, Niagara Region. **Table 4-2** summarizes the population and total private dwellings (based on the 2016 Statistics Canada data).

#### Table 4-2: Niagara-on-the-Lake Population Statistics

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Population</th>
<th>Total Private Dwellings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Niagara-on-the-Lake</td>
<td>17,511</td>
<td>7964</td>
</tr>
<tr>
<td>Municipality</td>
<td>Population</td>
<td>Total Private Dwellings</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>(13.7% increase since 2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(median age of 55.0)</td>
<td></td>
</tr>
<tr>
<td>Niagara Region</td>
<td>447,888</td>
<td>196,241</td>
</tr>
<tr>
<td></td>
<td>(3.8% increase since 2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(median age of 45.7)</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.1 Relevant Policies

#### 4.2.1.1 Growth Plan for the Greater Golden Horseshoe; Greenbelt Plan

This Project falls within the area covered by the *Growth Plan for the Greater Golden Horseshoe* and by the Greenbelt Plan. The *Planning Act* requires that all municipalities review their Official Plan every five years to ensure conformity with these provincial plans.

The *Growth Plan for the Greater Golden Horseshoe*, released by the Ministry of Municipal Affairs and Housing, is an amendment to the plan that came into effect on July 1, 2017. This document provides a strategy for managing growth and urban sprawl in the Greater Golden Horseshoe (GGH) to 2041, and specifies density and intensification targets that must be met by GGH municipalities in developing Official Plans.

The *Greenbelt Plan, 2017*, released by the Ministry of Municipal Affairs and Housing, is an amendment to the plan that came into effect July 1, 2017. This document provides a strategy to protect against the loss of agricultural land, support agriculture as the predominant land use, and protect the natural heritage and water resource systems that sustain ecological and human health. It also provides for a diverse range of economic and social activities associated with rural communities, tourism and resource uses. The Greenbelt Plan Area includes the Niagara peninsula tender fruit and grape area.

#### 4.2.1.2 Niagara Region Official Plan

The Niagara Region Official Plan contains objectives, policies and mapping that implement the Region’s approach to managing growth, growing the economy, protecting the natural environment, resources and agricultural land, and providing infrastructure. Niagara Region consolidated its Official Plan in 2014, and was last amended in 2015.

#### 4.2.1.3 Town of Niagara-on-the-Lake Official Plan

The Town of Niagara-on-the-Lake Official Plan sets out policies that deal with legislative and administrative concerns, policies to guide physical growth and policies to express a wide variety of social, economic and environmental concerns. The Town of Niagara-on-the-Lake amended its Official Plan for the municipality in July 2017.

### 4.2.2 Land Use

The QEW / Glendale Avenue interchange area contains a mix of several different land use types, most abundantly agricultural, commercial, residential and industrial. The Niagara-on-the-Lake Official Plan has designated the land uses of the Glendale area as shown in Figure 4-2.
4.2.2.1 Hospitality, Retail, Commercial and Industrial

Niagara Region and the historic Town Niagara-on-the-Lake are popular tourist destinations for people of all ages, resulting in a thriving hospitality industry. Four hotels exist within the Study Area:

- White Oaks Conference Resort and Spa;
- Hilton Garden Inn – Niagara-on-the-Lake;
- Holiday Inn Express – Niagara-on-the-Lake; and
- Staybridge Suites – Niagara-on-the-Lake.

The Outlet Collection at Niagara (Outlet Collection) is located in the southwest section of the Study Area, along Taylor Road. The Outlet Collection is Canada’s largest open-air shopping centre, featuring over 100 outlet brands, including several first-in-Canada outlet stores. The Outlet Collection is a very popular tourist destination, bringing in visitors to the area from across southern Ontario and the northeastern United States.

Many commercial / light industrial facilities exist in the northern end of the Study Area along York Road. These companies operate in a number of different sectors including, but not limited to: restaurants, gas stations, automotive parts and dealerships, manufacturing and driver training centres.
4.2.2.2 Institutional - Niagara College

Niagara College – Niagara-on-the-Lake Campus (Niagara College) is located southeast of the Study Area along Taylor Road at Glendale Avenue. The campus has several unique features, including wetlands, vineyards and community gardens which serve as a “living laboratory” for the college’s thriving environment and horticulture programs. Niagara College is attended by thousands of full-time and part-time students who either live on campus in residence buildings or commute from various parts of southern Ontario.

4.2.2.3 Residential

The Niagara-on-the-Green subdivision is located southeast of the Study Area at the Glendale Avenue / Niagara-on-the-Green Boulevard intersection, consisting of approximately 250 single-family detached and semi-detached houses.

4.2.2.4 Ontario Travel Information Centre – To be displaced by Garden City Skyway Improvements

The existing Ontario Travel Information Centre (OTIC) is located west of the Study Area along the westbound QEW. It is operated by the Ontario Tourism Marketing Partnership Corporation (OTMPC) in partnership with the Ontario Ministry of Tourism, Culture and Sport. With the Niagara Region and the historic Old Town of Niagara-on-the-Lake being such a thriving tourist area, the OTIC serves as a common first point of contact with tourists when in Niagara Region, allowing them to plan a destination itinerary for the area based on their interests.

4.2.2.5 Community, Recreational – Adjacent to Study Area

Southeast of the Study Area is the Woodend Conservation Area, managed by Niagara Peninsula Conservation Authority. Woodend Conservation Area has trails open year round for hiking and skiing, including the famous Bruce Trail, and is a popular destination for passerine bird watching.

Another popular recreational destination is the Royal Niagara Golf Club, located southeast of the Study Area. Royal Niagara Golf Club is a 7000 yard, 27-hole course of international standing. Featuring three 9-hole courses; The Escarpment Course, The Iron Bridge Course, and the Old Canal Course, Royal Niagara is built to the highest championship standards and attracts golfers from across Ontario and North America.

Niagara-on-the-Green Park can be found within the Niagara-on-the-Green subdivision and contains a small sports court and a playground.

4.2.2.6 Agriculture – Adjacent to Study Area

The majority of land in the Town of Niagara-on-the-Lake is in agricultural production. The famous farms of Niagara-on-the-Lake produce a diverse range of agricultural crops including fruit, grapes, various field crops, livestock and greenhouse products.
The soils in Niagara-on-the-Lake have a high capability for the production of common field crops. Ranging from sandy loam soils to soils consisting of red shale with a high silt and clay content, water-holding capabilities vary greatly within the region. Due to the gradual sloping of the landscape to the lake, these soils tend to be moderately to well-drained with slow surface runoff.

The unique climate that is present in the Town as a result of its location below the Niagara Escarpment make it an area that is suitable for producing a wide range of tender fruits and grapes.

To the north and east of the Study Area are hundreds of hectares of agricultural land, used primarily for vineyards and field crops, both of which are staples to the Town’s identity and economy.

### 4.2.2.7 Aesthetics / Landscape Composition

The Study Area presents an urbanized setting with retail, commercial and low-density housing, surrounded by lush natural and agricultural land use. The surrounding acres of vineyards are one of Niagara-on-the-Lake’s most famous features, and provide memorable views for both local residents and tourists alike.

### 4.2.2.8 Noise Sensitive Areas (NSAs)

NSAs in context of an assessment as per the MTO Guide typically include the following land uses, provided that an outdoor living area is associated with them:

- Private homes such as single family residences (owned or rental);
- Townhouses (owned or rental);
- Multiple unit buildings, such as apartments; and,
- Hospitals, nursing/retirement homes, etc.

Land uses in the area include hospitality, retail and commercial, with Niagara College located southeast of the interchange. Although there are no land uses within the Study Area that qualify as NSAs, there is a residential subdivision abutting the southeast boundary of the Study Area.

### 4.2.2.9 Air Quality

Vehicular traffic produces a variety of air contaminants as a result of fuel combustion inside the engine, evaporation of fuel from the tank, brake and tire wear, and re-suspension (also known as re-entrainment) of loose particles on the road surface (silt) as the vehicle travels over the road surface.

Receivers that are sensitive to noise impacts will be similar to those that are sensitive to air quality impacts associated with the Project. As such, refer to Section 4.2.2.8 for sensitive receivers that are located in the Study Area.
4.2.2.10 Waste and Contamination

As part of this Project, a Contamination Overview Study (COS) was complete. The COS involved a records review, a site reconnaissance, interpretation and assessment of collected data and compilation of the information into a comprehensive written report. The COS did not include property specific inspections or interviews with property owners or occupants. The objective of this COS is to identify actual or potential site contamination that may impact the Project.

Nine COS ID parcels were identified as having a “high” potential for environmental contamination; seventeen (17) COS ID parcels were identified as having “medium” potential for environmental contamination; and four significant spill locations were identified within the Study Area. None of these contaminated parcels are located within the proposed area of construction for the MTO and Region projects.
4.3 Cultural Environment Existing Conditions

4.3.1 Archaeological Resources

The Stage 1 Archaeological Assessment (AA) was completed by using background research to describe the geography, land use history, previous archaeological fieldwork and current conditions of the property to determine its archaeological potential. In addition, satellite imagery and thematic and historic maps were analyzed, as well as the Official Plan for the Town of Niagara-on-the-Lake, which discusses resource and management policies for archaeological planning and potential. The results of the Stage 1 AA indicate that while portions of the Study Area has been extensively and deeply disturbed by past construction activity of the QEW, Glendale Avenue and associated infrastructure, there appear to be areas that are possibly undisturbed and still contain archaeological potential. See Figure 4-3 for the results of the Stage 1 AA.

**Figure 4-3: Stage 1 Archaeological Assessment Results**

4.3.2 Built Heritage and Cultural Resources

There are no identified built heritage and cultural resources within the Study Area.
4.4 Transportation Existing Conditions

4.4.1 Transportation Network

The section of highway in the designated Study Area is classified as an RFD120 (rural, freeway, divided); with a design speed of 120 km/h and a posted speed of 100km/h. There are three lanes of travel in each direction (2 x 3.5m Speed Change Lanes and 4 x 3.75m Thru Lanes), separated by a 6.0-6.5m median. There are 2.0-3.0m paved shoulders on both sides of the highway.

4.4.2 MTO QEW / Glendale Avenue Interchange

Glendale Avenue is designated as UAU70 (urban, arterial, and undivided) with a design speed of 70 km/h and a posted speed of 50 km/h. The existing interchange is a Diamond/Parclo B hybrid, with a diamond configuration in the north, and a modified Parclo B configuration in the south. The north ramp terminal (E-N/S ramp terminal) is signal controlled, whereas the south ramp terminal (W-NS ramp terminal) is stop controlled and allows motorists to transition into both north or south directions of travel.

4.4.2.1 Bridge

The QEW / Glendale Avenue Underpass was constructed in 1963. The bridge consists of pre-stressed precast girders, with four spans (11m, 20.6m, 18.3m, and 11m) at a skew angle of four degrees. The existing bridge structure has a paved surface encompassing four traffic lanes (two in each direction), with 1.32m wide sidewalks on either side. The sidewalk on the west side of the structure is discontinuous beyond the bridge limits. The structure features concrete barrier walls (0.83m in height) with hand rails spanning the length of the bridge deck on both sides.

4.4.2.2 Traffic

Under the existing configuration and volumes, at peak travel periods the QEW/Glendale interchange experiences significant queuing as follows:

- Glendale Avenue northbound traffic making a left turn onto the QEW Toronto-bound on ramp experiences significant queues during peak travel periods. This results in safety issues caused by northbound traffic changing lanes, in an effort to bypass the interchange ramp traffic queue to access the Glendale Avenue/York road intersection.

- QEW eastbound traffic exiting to Glendale Avenue northbound experiences significant queues during peak travel period. The QEW ramp terminal operational analysis indicated that during the Saturday peak period, This operates with a LOS F with 95th percentile traffic queues of 197 metres on the off-ramp.

- QEW eastbound traffic exiting to Glendale Avenue southbound experiences significant queues during peak travel periods, because of the “weaving” caused by Glendale Avenue southbound traffic turning right onto Taylor Road towards the Outlet Mall crossing QEW traffic travelling to areas further south on Glendale Avenue.
The interchange as configured has limited reserve capacity to satisfy future traffic demands and safety concerns related to traffic operations described above.

4.4.2.3 Drainage

The QEW within the Study Area is divided into three distinct drainage catchments that are approximately evenly sized. The QEW/Glendale Avenue interchange falls within the central catchment span, approximately 1 km along the QEW, and drains to a sag over a tributary of Six Mile Creek, which is conveyed through a culvert under the QEW located west of Glendale Avenue. The overall slope of the QEW within the Study Area is approximately 0.6%, except for the slope of the climb at the eastern boundary of the Study Area, which is approximately 3%.

Drainage of Glendale Avenue is split at a crest over the QEW, draining to sags and culverts approximately 250m south of the QEW and approximately 430m north of the QEW at the northern boundary of the Study Area. Both ROWs within the Study Area are serviced by curb and gutter with catch basins.

External to the QEW and Glendale Avenue ROWs, the Study Area drains under the QEW through a series of culverts and proceeds to the north through one of four outfalls at the site boundary, all of which converge at a confluence with Six Mile Creek approximately 3km downstream. Six Mile Creek continues as a municipal drain and discharges into Lake Ontario approximately 5 km further downstream.

4.4.2.4 Intelligent Transportation Systems (ITS)

The Ministry operates the Niagara Region COMPASS System using a local fibre optic network that connects to the Transportation Management Centre using a third party wired long haul link. The fibre cable interconnects with MTO fibre near Lake Street and the Service equipment is located at the OTIC.

The following ITS equipment was identified within the projected limit of construction:

- Service equipment located in the OTIC;
- Ducts containing existing fiber optic and power cables along the north abutment wall of the Glendale Avenue Structure;
- CCTV site located at the northeast quadrant of the Glendale Avenue interchange;
- Variable Message Sign in the vicinity of the OTIC; and
- Vehicle Detection Stations (VDS).

4.4.2.5 Electrical / Illumination

The QEW/Glendale Avenue interchange is fully illuminated with mainline illumination continuing beyond the interchange. The existing high mast illumination includes 13 high mast poles, varying in length from 21.5m to 24.5m. High mast lights are 400 watt high pressure sodium luminaires, with external shielding to mitigate light trespass. The surface mounted underpass illumination system at the Glendale Avenue underpass structure consists of eight 70 watt high pressure sodium wall pack luminaires.
The distribution assembly is located in the north east quadrant of the interchange along with a metering compartment per Ministry standards. The lighting load is serviced by the transformer located adjacent to distribution assembly.

Glendale Avenue is continuously illuminated as well, utilizing 12 light poles between the east-to-north/south ramp terminal and Glendale Avenue East. The light poles consist of 200 watt high pressure sodium luminaires. The underground lighting system connects to the power supply located in the northeast quadrant of the Glendale Avenue and East- North/South ramp terminal.

There are two power supply cabinets in the Study Area. The power supplies service the street lighting and traffic signals at the East- North/South ramp terminal respectively.

The east-to-north/south ramp terminal is fully signalized with a system consisting of sectional steel poles, complete with pedestrian and traffic signals heads, push buttons, a traffic signal controller cabinet, and power supplies.

There are also traffic counting stations present on the Glendale Avenue East- North/South, West-South and west-to-north ramps.

4.4.2.6 Utilities

Table 4-3 below provides information received from the known utility providers in the area:

<table>
<thead>
<tr>
<th>Utility</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell Canada</td>
<td>Plant present - conduit and pedestals on Glendale Avenue</td>
</tr>
<tr>
<td>Cogeco Cable</td>
<td>No plant present</td>
</tr>
<tr>
<td>Enbridge Gas Distribution</td>
<td>Plant present – gas mains on Glendale Avenue</td>
</tr>
<tr>
<td>Hydro One</td>
<td>No plant present</td>
</tr>
<tr>
<td>Town of Niagara On The Lake – Hydro Services</td>
<td>Plant present - pole lines on Glendale Avenue,</td>
</tr>
<tr>
<td>Niagara Region – Water and Waste Water Services</td>
<td>Watermain present on and crossing Glendale Avenue</td>
</tr>
<tr>
<td>Niagara Peninsula Energy Inc.</td>
<td>No plant present, outside of service area</td>
</tr>
<tr>
<td>Niagara Regional Broadband Network</td>
<td>No plant present</td>
</tr>
<tr>
<td>Rogers Cable Communications Inc.</td>
<td>No plant present</td>
</tr>
<tr>
<td>TELUS</td>
<td>No plant present</td>
</tr>
<tr>
<td>TransCanada Pipelines</td>
<td>No plant present</td>
</tr>
<tr>
<td>Trans-Northern Pipelines Inc.</td>
<td>No plant present</td>
</tr>
<tr>
<td>Zayo (formerly MTS-Allstream)</td>
<td>No plant present</td>
</tr>
</tbody>
</table>
4.4.3 Niagara Region’s Glendale Avenue / York Road Intersection

4.4.3.1 Traffic

Under the existing configuration and volumes, the Glendale Avenue northbound approach to the intersection experiences long queues under certain conditions and, from observations, traffic queues were noted to extend from the York Road intersection as far back as the interchange north ramp terminal intersection.

With significant growth in traffic anticipated between now and the ultimate horizon year, traffic queues along Glendale Avenue are expected to increase between the three signalized intersections, potentially extending from York Road back to the Taylor Road intersection.

4.4.3.2 Drainage

Drainage of Glendale Avenue is split at a crest over the QEW, draining to sags near a culvert approximately 250m south of the QEW and a culvert approximately 430m north of the QEW at the northern boundary of the Study Area. Both ROWs within the Study Area are serviced by curb and gutter with catch basins.

4.4.3.3 Electrical / Illumination

The Glendale Avenue and York Road intersection is illuminated featuring four LED luminaires on four 10.5m light poles. Currently configured to be a signalized intersection, the intersection has a full traffic signal system consisting of sectional steel poles, complete with pedestrian and traffic signals heads, push buttons, a traffic signal controller cabinet, and power supplies.

4.4.3.4 Utilities

Table 4-4 below provides information received from the known utility providers in the area:

<table>
<thead>
<tr>
<th>Utility</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell Canada</td>
<td>Plant present - conduit and pedestals on Glendale Avenue East and York Road</td>
</tr>
<tr>
<td>Enbridge Gas Distribution</td>
<td>Plant present – gas main on Glendale Avenue East and York Road</td>
</tr>
<tr>
<td>Town of Niagara On The Lake – Hydro Services</td>
<td>Plant present – aerial poles on Glendale Avenue East and York Road</td>
</tr>
</tbody>
</table>
| Niagara Region – Water and Waste Water Services | Sanitary present on York Road  
|                                 | Watermain present on and crossing Glendale Avenue East and York Road |

4.4.4 Transit

Niagara-on-the-Lake Transit provides a bus service that travels between Old Town and Glendale, called the Old Town-Glendale Route. This route allows locals and tourists to easily
travel between historic Old Town Niagara-on-the-Lake and the Outlet Collection / Niagara College.

Niagara Region Transit services several bus routes connecting the Glendale area to St. Catharines, Niagara Falls and Welland.

GO Transit has a stop at Niagara College, Niagara-on-the-Lake Campus along its #12 Burlington-Niagara Falls GO Bus route, allowing students from the Greater Toronto Area to easily commute to the college.
5. Transportation Needs Assessment – Problems and Opportunities

5.1 MTO QEW / Glendale Avenue Interchange – Problems and Opportunities

5.1.1 Bridge Condition

The QEW/Glendale Underpass structure has reached the end of service life. Constructed originally in 1963, the structure today exhibits several conditional deficiencies. A holding strategy repair was conducted in 2009 to enable a full structure replacement by Niagara Region’s interchange reconstruction plan. Undertaking rehabilitation of the existing bridge would be a very short term solution as replacement of the structure is required immediately. In addition, opportunities would also be limited to provide improvements to the interchange to improve its existing and forecasted (2041) operational performance if replacement is not undertaken.

5.1.2 Interchange Performance

An integral component of this Study was to conduct a traffic operations analysis. Existing and future transportation deficiencies at the QEW / Glendale Avenue interchange within the Study Area were identified and addressed in the proposed alternatives. The assessment was conducted utilizing traditional traffic demand analysis for 10 and 25-year time horizon for weekday a.m., weekday p.m., and Saturday peak hours.

The current geometric configuration of the interchange has existing and forecasted (2031 and 2041) operational performance deficiencies as follows:

- Northbound left turn movement and queuing from Glendale Avenue to the QEW Toronto bound on-ramp;
- Queuing on the QEW east-to-south off-ramp;
- Weaving issues on southbound Glendale Avenue, south of QEW caused by the vehicles exiting the east-to-south off-ramp to make a left turn at Taylor Road, which is in conflict with the through or right turn movement at the Taylor Road intersection;
- Redundant southbound movement from the east-to-north/south loop ramp; and
- Weaving movements on the QEW Niagara bound between Glendale Avenue and Highway 405 interchange.

5.1.3 Commuter Parking

To support the sustainable transportation goals of the proposed provincial Growth Plan for the Greater Golden Horseshoe (i.e., extensive multi-modal transportation system and efficient
highway systems), MTO Central Region initiated a systematic approach to the implementation of commuter parking lots to meet short- and long-term needs and objectives.

Central Region Carpool Lots Opportunity Study, W.O. No. 05-20002, Final Report recommended a new commuter parking lot at the QEW/Glendale Avenue interchange to satisfy short term needs. The commuter parking lot was to accommodate 100 vehicle parking spaces at a minimum with opportunities for future expansion. It was noted that the proposed location for the commuter parking lot could be combined with the new Ontario Travel Information Centre as one location if required.

5.1.4 Ontario Travel Information Centre

The QEW Garden City Skyway from Niagara Street to Glendale Avenue (W.O. 08-2009) Transportation Environmental Study Report identified a need for the relocation of the Ontario Travel Information Centre (OTIC) currently located adjacent to the QEW Toronto-bound lanes, west of Glendale Avenue interchange. This is a result of proposed improvements for the Garden City Skyway impacting the existing OTIC. The proposed location for the relocation of the OTIC would provide sufficient area such that a building and a parking area similar to the existing OTIC can be integrated into and constructed with the proposed commuter parking lot.

5.2 Niagara Region’s Glendale Avenue / York Road Intersection – Problems and Opportunities – Region’s Transportation Master Plan Completed Requirements of Municipal Class EA Phases 1 and 2

The Niagara Region Transportation Master Plan (October 2017) completed Municipal Class EA Phases 1 and 2 for a number of projects. Key findings that are applicable to this Study are the following:

- A road network opportunity is improvement of the QEW / Glendale Avenue interchange to provide operational and capacity benefits.
- As part of the action plan to implement the goals of the Transportation Master Plan, Niagara Region should work with the MTO and development industry to finalize the detailed design and develop an implementation plan for construction prior to the beginning of the 2021 Canada Summer Games.
- Major regional road crossings of the QEW experience congestion and/or operational constraints, and have long been recognized as challenges to travel in Niagara Region.
- The Niagara Region Transportation Master Plan, approved by Regional Council on July 20, 2017, was conducted in accordance with the Master Plan process following requirements of Phases 1 and 2 of the Municipal Class EA process. A Notice of Study Completion and TESR Submission (Appendix B) was posted on the Region’s Website and advertised in Niagara This Week newspaper on July 27, 2017, and August 3, 2017. The Notice of Study Completion and TESR Submission indicated that the Niagara Transportation Master Plan was placed on public record for a 45-day public review period, requesting that written comments to Niagara Region be provided by Monday, September 11, 2017.
In addition to the above, this current Study included a traffic operations analysis for the intersection to assess the traffic operation, as per Niagara Region guidelines, policies and standards. This analysis found that significant queueing is occurring at the northbound left turn from Glendale Avenue to York Road westbound and from westbound York Road to southbound Glendale Avenue.

As the traffic volumes increase over the planning horizon (2031 and 2041), the intersection Level of Service (LOS) will worsen such that the overall intersection will be operating in a congested state with significant traffic queues for the westbound to southbound movement in the afternoon peak hour.

The Transportation Master Plan built on the findings of the following studies:

- The *Niagara Region Transportation Master Plan – Needs and Opportunities Report (October 2016)*; and
- The *Niagara Region Road Network Strategy Technical Paper (July 2017)*.
6. Assessment of Planning Alternatives / Alternative Solution

Planning alternatives / alternative solutions (alternatives to the undertaking in the EA Act) are broad-based alternatives that represent functionally different ways of addressing the identified study purpose, problems, and opportunities.

A number of planning alternatives / alternative solutions were assessed and screened based on their ability to address the study purpose described in Section 1.2 and problems / opportunities described in Section 5. These alternatives are described in the sections below.

6.1 MTO QEW / Glendale Avenue Interchange – Planning Alternatives

6.1.1 Do Nothing

The “Do Nothing” alternative represents a continuation of current trends, with no significant infrastructure improvements. This alternative was screened out for the following reasons:

- The existing bridge is in need of replacement; and
- The existing geometric configuration of the interchange has existing and forecasted (2031 and 2041) operational performance deficiencies.

6.1.2 Rehabilitate Existing Bridge

Rehabilitation of the existing bridge was screened out for the following reasons:

- Constructed in 1963, the existing bridge exhibits several conditional deficiencies, and has reached the end of its service life; and
- Opportunities would be limited to provide improvements to the interchange to improve its existing and forecasted (2031 and 2041) operational performance.

6.1.3 Replace Existing Bridge within Existing Interchange

Replacement of the existing bridge within the existing interchange was screened for the following reasons:

- The current geometric configuration has existing and forecasted (2031 and 2041) operational performance deficiencies as follows:
  - There is queuing of traffic turning from Glendale Avenue northbound to the QEW Toronto bound, and for traffic exiting the QEW Niagara bound to Glendale Avenue southbound;
6.1.4 Replace Existing Bridge within Improved Interchange – Preferred Planning Alternative

For the reasons discussed above, the preferred planning alternative for the QEW / Glendale Avenue interchange is replacement of the existing bridge within an improved interchange. The Preliminary Design alternatives for this are discussed in Section 7.1.

6.2 Niagara Region’s Glendale Avenue / York Road Intersection – Alternative Solutions

6.2.1 Do Nothing

As indicated above, the “Do Nothing” alternative represents a continuation of current trends, with no significant infrastructure improvements. This alternative was screened out for the following reasons:

- The existing intersection continues to experience longer traffic queues on both the northbound and westbound approaches;
- Traffic signal operations at the existing intersection, along with the northbound left turn movement of over 550 vehicles during the pm peak hour, result in queueing of northbound Glendale Avenue traffic; and
- The existing intersection provides limited gateway features to Niagara-on-the-Lake.

6.2.2 Streamline Traffic Operations at the Glendale Avenue / York Road Intersection

As indicated in Section 5.2, the Niagara Region Transportation Master Plan (October 2017) completed Municipal Class EA Phases 1 and 2 for a number of projects.

- A “road network opportunity” is the improvement of the QEW / Glendale Avenue interchange to provide operational and capacity benefits.
- As part of the action plan to implement the goals of the Transportation Master Plan, Niagara Region should work with the MTO and development industry to finalize the
detailed design and develop an implementation plan for construction prior to the beginning of the 2021 Canada Summer Games.

- Major regional road crossings of the QEW experience congestion and/or operational constraints, and have long been recognized as challenges to travel in Niagara Region.

This Study has determined that streamlining traffic operations at the Glendale Avenue / York Road intersection will achieve the intent of the recommendations noted above by:

- Mitigating queueing occurring at the northbound left turn from Glendale Avenue to York Road westbound, as well as queueing on York Road eastbound and westbound; and
- Establishing an alternate connection from Glendale Avenue to the York Road and Airport Road intersection.

Accordingly, the two alternative solutions described below have been carried forward. The proposed alternative solutions will provide additional network capacity that may delay the proposed northerly extension of Glendale Avenue to Queenston Road, that is identified in the Niagara Region Transportation Master Plan (October 2017).

6.2.3 Improve Intersection with Roundabout – Included in Preferred Alternative Solution

This is one of two alternative solutions carried forward. The reasons are the following:

- It reduces northbound, eastbound and westbound queues at the Glendale Avenue / York Road intersection;
- It provides safer operations for the vehicular traffic by reducing collision types that typically result in injuries, such as approach collisions, angle collisions, and turning collisions; and
- Refuge islands incorporated in the design will address pedestrian and cycling movements at this intersection.

The alternative design concepts for this are discussed in Section 7.2.

6.2.4 New Airport Road Connection from Glendale Avenue – Included in Preferred Alternative Solution

This is one of two alternative solutions carried forward. The reasons are the following:

- It provides a more direct route for traffic to Niagara-on-the-Lake from Glendale Avenue to York Road by eliminating the need to navigate left and right turns through two intersections in close proximity to one another; and
- Through effective distribution of traffic, queuing is reduced with respect to traffic that turns from Glendale Avenue northbound to York Road eastbound on its way to the historic Old Town Niagara-on-the-Lake tourist area. This relief would provide opportunities to access local developments and businesses.

The alternative design concepts for this are discussed in Section 7.3.
7. Assessment and Evaluation of Preliminary Design Alternatives / Alternative Design Concepts

7.1 Improvements to MTO QEW / Glendale Avenue Interchange – Preliminary Design Alternatives

Safety, operational and geometric improvements were the key considerations in the development, assessment and evaluation of Preliminary Design alternatives. The preferred Preliminary Design alternative for the QEW / Glendale Avenue interchange consists of the replacement of the existing bridge within an improved interchange. All alternatives consist of realigning Glendale Avenue to the east of the existing underpass structure, such that new underpass can be constructed offline without impacting traffic operations. The Preliminary Design alternatives considered for QEW / Glendale Avenue interchange were as follows:

7.1.1 Alternative A – Modified Parclo A4 Interchange

Alternative A reconfigures the existing hybrid diamond / Parclo B interchange to a modified Parclo A4. The reconfiguration requires a new Glendale Avenue Underpass and two additional bridge structures with one retaining wall supporting the East-North/South ramp, and another to support the North-East on-ramp. A loop ramp (North/South-East) provides access to the QEW and Highway 405, and the South-East ramp from Glendale Avenue provides access to the QEW exclusively. Glendale Avenue is realigned to the east of the existing roadway such that the new structure can be constructed offline without disrupting traffic operations. Glendale Avenue features four through lanes on the Glendale Avenue Underpass consisting of two lanes in each direction, with a raised median between ramp terminals and speed change lanes. Pedestrians and cyclists utilize a multi-use path on one side of the structure. Furthermore, this alternative consists of four directional ramps (two off-ramps and two on-ramps), and two inner loop ramps, with signalization at the ramp terminals. Of the alternatives considered, this alternative provides the largest commuter car pool lot in the north-west quadrant of the interchange in conjunction with provisions for future expansion and a potential Ontario Travel Information Centre. See Figure 7-1 for a graphical depiction of this alternative.

7.1.2 Alternative B – Modified Parclo A3 Interchange with Roundabouts at Ramp Terminals

Alternative B reconfigures the existing hybrid diamond / Parclo B interchange configuration to a modified Parclo A3 with two ramp terminals being serviced by roundabouts. To facilitate this configuration, a new Glendale Avenue Underpass is required (with no additional bridge structures), as is one additional retaining wall supporting the South-East on-ramp. A loop ramp (North/South-East) provides access to the QEW and Highway 405, and the South-East ramp from Glendale Avenue provides access to the QEW exclusively. Glendale Avenue is realigned to the east of the existing roadway such that the new structure can be constructed offline without disrupting traffic operations. Glendale Avenue features four through lanes on the Glendale
Avenue Underpass – two lanes in each direction, with a raised median between the roundabout terminals. Pedestrian and cyclists are directed to a multi-use path on one side of the structure. The new interchange consists of three directional ramps (two off-ramps, one on-ramp), two inner loop ramps, and roundabouts at the ramp terminals. A commuter parking lot is located in the northwest quadrant of the interchange with provisions for future expansion and a potential Ontario Travel Information Centre. See Figure 7-2 for a graphical depiction of this alternative.

7.1.3 Alternative C – Diverging Diamond Interchange (DDI)

Alternative C replaces the existing hybrid diamond / Parclo B configuration with a diverging diamond. This alternative requires a new Glendale Avenue Underpass and one additional structure to accommodate the new configuration. Glendale Avenue is realigned to the east of the existing roadway such that the new structure can be constructed offline without disrupting traffic operations. Glendale Avenue is composed of four through lanes - two lanes in each direction with a wide separated median. The wide separated median encompasses a multi-use path through the middle of the structure, accommodating all pedestrians and cyclists traffic. The multi-use path extends between the ramp terminals and connects to bike lanes / sidewalks north and south of the ramp terminals. The interchange consists of four directional ramps (two off-ramps, two on-ramps). The commuter parking lot and potential Ontario Travel Information Centre are accommodated in the northwest quadrant of the interchange, with access from Glendale Avenue and westbound egress to the York Road / Airport Road intersection. See Figure 7-3 for a graphical depiction of this alternative.

7.1.4 Evaluation Approach and Criteria

The evaluation criteria were developed such that the prevailing alternative aligned with safety, operational, and geometric improvements specified in MTO guidelines, policies and standards.

The Preliminary Design alternatives were evaluated on a number of facets in conjunction with stakeholder and public input. The selected alternative was to provide a solution that considered safety, impacts to the natural, socio-economic and cultural environments, future transportation needs, and traffic operations, in conjunction with engineering and cost considerations.
Figure 7-1: Modified Parclo A4 Interchange
Figure 7-2: Modified Parclo A3 Interchange with Roundabouts at Ramp Terminals
Figure 7-3: Diverging Diamond Interchange
### 7.1.5 Alternative Evaluation and Selection of Preferred Alternative – Diverging Diamond Interchange

Each alternative provided a range of advantages and disadvantages, with some alternatives being more in line with stakeholder expectations for improvements to the QEW / Glendale Avenue interchange. A breakdown of how each alternative was evaluated is seen below in Table 7-1.

<table>
<thead>
<tr>
<th>Evaluation Factors and Criteria</th>
<th>Alternative A Concept Parclo A4 modified with Airport Road Connection</th>
<th>Alternative B Concept Parclo A2 with Roundabouts</th>
<th>Alternative C Concept Diverging Diamond</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highways</strong></td>
<td><strong>Least Preferred:</strong></td>
<td><strong>Moderately Preferred:</strong></td>
<td><strong>Most Preferred:</strong></td>
</tr>
<tr>
<td>Summary Evaluation of Highways Criteria</td>
<td><em>Highest number of interchange (I/C) ramps, and requires speed change lanes on structure</em></td>
<td><em>Moderate number of I/C ramps, but requires no speed change lanes on structure</em></td>
<td><em>Lowest number of ramps, and requires no speed change lanes on structure</em></td>
</tr>
<tr>
<td></td>
<td><em>Most property required:</em></td>
<td><em>Moderate property required:</em></td>
<td><em>Least property required:</em></td>
</tr>
<tr>
<td></td>
<td><em>Most complex construction staging:</em></td>
<td><em>Moderately complex construction staging:</em></td>
<td><em>Least complex construction Staging:</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traffic Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary Ranking of Traffic Criteria</strong></td>
</tr>
<tr>
<td><strong>Least preferred:</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Moderately preferred:</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Most preferred:</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>
### Environmental Summary Ranking of Environmental Criteria

<table>
<thead>
<tr>
<th>Least Preferred</th>
<th>Moderately Preferred</th>
<th>Most Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest impact to forested areas</td>
<td>Moderate impact to forested areas</td>
<td>Lowest impact to forested areas</td>
</tr>
<tr>
<td>Limited opportunity for Niagara-on-the-Lake (NOTL) gateway</td>
<td>Limited opportunity for NOTL gateway</td>
<td>Good opportunity for NOTL gateway</td>
</tr>
</tbody>
</table>

### Cost Summary Ranking of Cost Criteria

<table>
<thead>
<tr>
<th>Least Preferred</th>
<th>Moderately Preferred</th>
<th>Most Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>Moderate</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

### Overall Evaluation of Alternatives

<table>
<thead>
<tr>
<th>Least preferred</th>
<th>Moderately preferred</th>
<th>Most preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways: Least preferred</td>
<td>Highways: Moderately preferred</td>
<td>Highways: Most preferred</td>
</tr>
<tr>
<td>Traffic: Least preferred</td>
<td>Traffic: Moderately preferred</td>
<td>Traffic: Most preferred</td>
</tr>
<tr>
<td>Environmental: Least preferred</td>
<td>Environmental: Moderately preferred</td>
<td>Environmental: Most preferred</td>
</tr>
<tr>
<td>Cost: Highest</td>
<td>Cost: Moderate</td>
<td>Cost: Lowest</td>
</tr>
</tbody>
</table>

Overall, Alternative C: DDI provides the preferred combination of geometric and operational improvements to the interchange, while ensuring impacts to the natural, socio-economic and cultural environments, as well as future transportation needs, in conjunction with engineering and cost considerations are all accounted for.

### 7.2 Niagara Region’s Roundabout at Glendale Avenue / York Road Intersection – Alternative Design Concepts

This Study included traffic operations analysis for the intersection of Glendale Avenue and York Road that concluded queueing is occurring at the northbound to westbound left turn from Glendale Avenue to York Road and the westbound to southbound left turn from York Road to Glendale Avenue southbound.

In addition to the interchange improvements per the MTO scope of work, considerations were made to address this Regional concern with design alternatives being developed that followed safety, operational, and geometric improvements specified in Niagara Region’s guidelines, policies and standards. See Figure 7-4 for a graphical depiction of this alternative.
7.2.1 Two Lane Roundabout – Presented at PIC

In order to improve traffic operation at the Region’s Glendale Avenue and York Road intersection, it was proposed to replace the existing signalized intersection with a 2-lane roundabout. The roundabout improves intersection operational performance by reducing queuing of northbound Glendale Avenue traffic by eliminating the traffic signals that unnecessarily stop traffic. Minimizing vehicular stoppages is especially beneficial when there is little traffic continuing through the intersection in an east-west direction along York Road. It also improves traffic operations associated with York Road east-to-south and west-to-south movements. The roundabout also maintains existing access roads to adjacent commercial properties.

7.2.2 Refinements to Two Lane Roundabout

In an effort to optimize traffic operations, design refinements were analyzed to determine if a more optimal solution was available. A single lane roundabout with partial channelization was explored to determine if it would be able to service traffic volumes. Vehicular traffic would be provided with unrestricted right turn movements between Glendale Avenue North and York Road East, and York Road West and Glendale Avenue South. As a result, the roundabout would largely service traffic movements from Glendale Avenue northbound to York Road westbound, and from York Road westbound to Glendale Avenue southbound within a smaller roundabout footprint.

7.2.3 Alternative Evaluation and Selection of Preferred Roundabout Alternative – Single Lane Roundabout with Partial Channelization

Based on the refinements, the preferred roundabout alternative is a single lane roundabout with partial channelization, with property protection for a 2-lane roundabout as may be determined through a future Niagara Region study. The proposed roundabout will improve traffic operations for existing and future forecasted volumes while considering impacts to the natural, socio-economic and cultural environments, future transportation needs, in conjunction with engineering and cost considerations.

7.3 Niagara Region’s New Airport Road Connection from Glendale Avenue – Preferred Alternative Design Concept Presented at PIC

Similar to the roundabout alternative discussed in Section 7.2, a new direct connection from Glendale Avenue to the Airport Road / York Road intersection would support the reduction of queuing at the Glendale Avenue / York Road intersection. It would also provide a more direct connection to Old Town Niagara-on-the-Lake. See Figure 7-5 for a graphical depiction of this alternative. This alternative entails a new loop ramp in the northeast quadrant of the interchange that connects to Airport Road via a new road that passes through an underpass located just north of the interchange to the Airport Road / York Road intersection. This alternative widens the westbound egress from the new commuter parking lot to a two lane municipal road, allowing for two way traffic to and from the parking lot (and potential Ontario Travel Information Centre). In addition to reducing traffic volumes at the Glendale Avenue and York Road intersection, this connecting road provides a more direct route to the Airport Road / York Road intersection for
traffic progressing towards Old Town Niagara-on-the-Lake. The new connection will form the fourth (south) leg at the existing intersection of York Road and Airport Road, which will continue to operate as a signalized intersection. Improvements to the Airport Road/York Road intersection include the provision of a northbound to westbound left turn lane.

The loop ramp is expected to reduce the heavy left turning volumes at the Glendale Avenue / York Road intersection by up to 90% (traffic coming from Glendale Avenue South) during peak periods.
Figure 7-4: Roundabout at Glendale Avenue / York Road Intersection
Figure 7-5: New Airport Road Connection from Glendale Avenue
8. The Preferred Preliminary Design / Design Concept

8.1 MTO QEW / Glendale Avenue Interchange Improvements – Bridge Replacement within Diverging Diamond Interchange

8.1.1 Diverging Diamond Interchange and How it Works

The operations of a Diverging Diamond Interchange (DDI) are designed to reduce conflict points and facilitate unrestricted turning movements at the QEW interchange ramps by reconfiguring traffic lanes on Glendale Avenue to allow for direct access to all four ramps. This is accomplished utilizing islands that channel both northbound and southbound vehicular traffic navigating the DDI to the west side of Glendale Avenue in each direction. Crossover intersections are signalized to facilitate the vehicular traffic shift. Shifting traffic to the left side of Glendale Avenue via signalized crossover intersections allows vehicles on Glendale Avenue making a left turn to the QEW on-ramps, and making left turns from the QEW off-ramps to Glendale Avenue, to do so without conflicting with vehicles approaching from opposing directions. Pavement markings clearly denote direction and lanes of travel to assist motorists, pedestrians, and Active Transportation users utilizing this interchange configuration. Through the interchange, pedestrians and Active Transportation users are directed through the middle of the structure between the ramp terminals, connecting to sidewalks/bicycle lanes / multi-use paths north and south of the interchange.

As part of the DDI, a replacement bridge will be constructed 6m to the east of the existing bridge, allowing the new bridge to be constructed beside it with minimal disruption to vehicular traffic using the existing interchange and Glendale Avenue. The proposed interchange is comprised of four directional ramps (two off-ramps, two on-ramps). The QEW Fort Erie bound off-ramp is widened to two lanes increasing storage capacity on the ramp for the high volumes that are anticipated as a result of the nearby developments such as the Outlet Collection at Niagara (mall). Furthermore, the QEW Toronto bound and Fort Erie bound off ramps are signalized to reduce conflict points and to efficiently manage incoming traffic from the QEW.

8.1.2 Bridge

The preferred structure type for the replacement QEW / Glendale Avenue Underpass is an NU (University of Nebraska) Girder Bridge with integral abutments. The proposed structure is a two span bridge spanning 58m (29m +29m), with integral abutments on piles to eliminate expansion joints at the abutments. The elimination of the expansion joints at the abutments will increase the longevity of the structure and reduce overall maintenance requirements. The structure will carry four lanes of travel (two in each direction), four shoulder lanes (shoulders on both sides), a 4m wide multi-use path for pedestrian and Active Transportations purposes along the centre median, and 3m wide multi-use paths outside of the structure limits. Figure 8-1 provides a cross section of the new bridge.
8.1.3 Multi-Use Path

The DDI features a 4m wide raised median between the ramp terminals to route pedestrians and cyclists. The multi-use path features concrete parapet walls on either side, conforming to MTO’s standards and policies, protecting users from the adjacent vehicular traffic. Pedestrians and Active Transportation users are channeled to the east and/or west ends of the structure through dedicated, signalized crossings at the approaches to the interchange. The multi-use paths are highlighted in purple in Figure 8-2.

8.1.4 Commuter Parking Lot

The DDI features a commuter parking lot in the northwest quadrant, supporting the sustainable transportation goals of the Province. Ministry owned commuter parking facilities are being strategically deployed across the Province to support the Regional High Occupancy Vehicle network by promoting ride sharing and to promote integration with existing and planned transit initiatives such as GO Transit. This facility will provide approximately 100 parking spaces, with opportunity for future expansion to the west and north. The commuter parking lot will be accessible from Glendale Avenue, with egress to the Airport Road / York Road intersection. Niagara Region’s new Glendale Avenue connection would allow access to the parking lot from the Airport Road / York Road intersection.
8.1.5 Relocated Ontario Travel Information Centre (OTIC)

The planned twinning of the Garden City Skyway bridge will displace the existing OTIC located on the north side of the QEW just west of the Glendale Avenue interchange. The Glendale Avenue interchange provides a potential site for a relocated OTIC that shares the same footprint as the commuter parking lot. A new OTIC would have similar size and amenities as the existing OTIC. The new facility would be easily accessible to motorists; with decision point signage placed in advance of the interchange and would provide easier access for tourists on their way to the historic Old Town Niagara-on-the-Lake.

8.1.6 Drainage

The QEW within the Study Area is divided into three catchments. The catchment for the QEW / Glendale Avenue interchange extends approximately 1 km along the QEW, and drains to a
A tributary of Six Mile Creek, which is conveyed under the QEW through a culvert at west of the interchange. The interchange will continue to be serviced by curb and gutter with catch basins.

For this Project:
- Five culverts will remain unchanged;
- Four culverts will be extended;
- Eight culverts will be removed (four of which will be replaced by new culverts at adjacent locations); and,
- Nine new culverts will be installed (four of which are replacement for culverts removed at adjacent locations).

Project culvert work is shown in Figure 8-3.

The changes in impervious area for the MTO and Niagara Region projects are summarized in Table 8-1 below.

### Table 8-1: Changes in Impervious Area

<table>
<thead>
<tr>
<th>Project</th>
<th>Existing (m²)</th>
<th>Proposed (m²)</th>
<th>Change (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTO Diverging Diamond Interchange (DDI) - Includes exit from Carpool Lot to Airport Rd.</td>
<td>41595</td>
<td>41195</td>
<td>-400</td>
</tr>
<tr>
<td>Niagara Region Roundabout at the Glendale Avenue / York Road intersection</td>
<td>9430</td>
<td>8805</td>
<td>-625</td>
</tr>
<tr>
<td>Niagara Region new Airport Road Connection from Glendale Avenue</td>
<td>1130</td>
<td>5690</td>
<td>+4560</td>
</tr>
<tr>
<td>MTO Commuter Parking Lot with potential Ontario Travel Information Centre</td>
<td>0</td>
<td>8075</td>
<td>+8075</td>
</tr>
<tr>
<td>Total</td>
<td>52155</td>
<td>63765</td>
<td>+11610</td>
</tr>
</tbody>
</table>
Figure 8-3: Project Culvert Work
8.1.7 Intelligent Transportation Systems (ITS)

The DDI and future OTIC removal for twinning of the Garden City Skyway have implications on the entire St. Catharine’s fiber network and the Intelligent Transportation Systems (ITS) field equipment. The DDI will impact existing fiber optic cable that runs along the north abutment wall of the existing bridge introducing a fiber break within this area will impact operation of all Advanced Traffic Management Systems (ATMS) equipment, located east of the QEW / Glendale Avenue interchange servicing Highway 405 and the QEW. Also, the relocation of the OTIC building will impact the St. Catharine’s network and equipment operation that is connected to third party equipment located in the existing OTIC.

The construction will also have direct impact on the existing ITS equipment within the construction area, namely:

- Variable Messaging Sign overhead structure located just west of the Glendale Avenue interchange;
- Camera site located in the northwest quadrant, and;
- Vehicle Detection Stations.

MTO has initiated a separate Detail Design study to reconfigure the local network within Niagara Region in advance of this Project. The proposed design approach includes:

- Relocation of third party equipment from the OTIC to the existing ATMS field cabinet in the vicinity of the QEW and Fifth Street in St. Catharines;
- Reconfiguration of field networks and devices landing at OTIC away from the construction zone; and
- Establishing a redundant fiber path via the QEW, Thorold Stone Road and Welland Canal to bypass the construction area and allow for all devices east of the QEW / Glendale Avenue interchange to reach the new third party hub location.

8.1.8 Electrical/Illumination

The QEW / Glendale Avenue interchange currently has full illumination. The recommended DDI illumination system incorporates both conventional and high mast illumination poles. While predominately high mast illumination, conventional lighting poles are proposed at several ramp locations in order to minimize concerns with light trespass. The existing high mast poles that are not impacted by the DDI will remain as is with high pressure sodium (HPS) illumination. All new and relocated high mast poles will adopt the current MTO approved list using LED high mast luminaires.

The existing QEW/Glendale Avenue interchange bridge has underpass illumination. The new bridge will have LED luminaires to light the QEW, in compliance with MTO standards.

The commuter parking lot will be illuminated using LED luminaires.

Traffic counting stations located in the existing interchange ramps will be relocated and reinstated in the new interchange...
8.1.9 Utilities

Existing utilities are highlighted in Table 8-2. Conflicts with the proposed construction will be identified and any necessary utility relocation will be determined during Detail Design.

Table 8-2: Existing Utilities within the Interchange Area

<table>
<thead>
<tr>
<th>Utility</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Niagara-on-the-Lake – Hydro Services</td>
<td>Glendale Avenue/ Glendale Avenue East / QEW ramp N/S-E, N/S-W, E/N-S, W-N/S</td>
</tr>
<tr>
<td>Niagara Region – Water and Waste Water Services</td>
<td>Glendale Avenue / Existing N/S-W Ramp / QEW off-ramp W/N-S, QEW on-ramp N/S-W, QEW</td>
</tr>
<tr>
<td>Town of Niagara-on-the-Lake – Hydro Services</td>
<td>Glendale Avenue/ Existing N/S-W Ramp Intersection / Glendale Avenue East / QEW off-ramp N/S-E / QEW on-ramp N/S-W / QEW off-ramp E/N-S</td>
</tr>
<tr>
<td>Enbridge Gas</td>
<td>Glendale Avenue East / QEW off-ramp W/N-S, QEW on-ramp N/S-W, QEW</td>
</tr>
<tr>
<td>MTO (Streetlight), Town of Niagara-on-the-Lake – Hydro Services</td>
<td>QEW off-ramp W/N-S</td>
</tr>
</tbody>
</table>

8.1.10 Construction Staging and Traffic Management

Reconfiguration of the QEW / Glendale Avenue interchange to a DDI will occur in multiple stages. The proposed details of construction staging are detailed below. Staging and sequencing details may change during the future Detail Design phase of the project:

Stage 1
During the first stage, construction of East-North/South and North/South-West interchange ramps, including a temporary connection to Glendale Avenue will be completed. Construction of the new Glendale Avenue structure over the QEW, including partial completion of the embankment will also commence during this stage. During this construction stage, all traffic will be maintained on existing ramps and roadways.

Stage 2
In the second stage traffic will be shifted to the newly constructed East-North/South and North/South-West interchange ramps using the temporary ramp terminal intersection on Glendale Avenue. Traffic from the West-South ramp will be shifted to combine the existing West-North ramp and newly constructed temporary ramp terminal. Construction of the West-North/South ramp will occur at this time. Construction of the commuter parking lot and the Airport Road connection from the commuter parking lot will commence in this stage.

Stage 3
The third stage will shift traffic on the West-North ramp to the newly constructed West-North/South ramp. The (now redundant) existing W-N interchange ramp will be closed at this time. Construction on the re-aligned Glendale Avenue will continue during this stage. Finally, construction of the N/S-E interchange ramp will commence. Traffic using the N/S-E ramp will be maintained during this phase.
Stage 4
The fourth stage will have traffic shifted to the newly constructed North/South-East interchange ramp. The (now redundant) existing North/South-East interchange ramp will be closed at this time. Construction of the new Glendale Avenue will continue in this stage, with works on the segment at the south of the existing roadway. Finally, construction of the Glendale Avenue East will be completed. Traffic will continue to be maintained during these works.

Stage 5
In the fifth and final stage, all traffic will be shifted to the newly aligned Glendale Avenue, with the (now redundant) existing roadway being closed. Construction of the remaining ramp channel sections will be completed at this time. Finally, short-term temporary lane closures will occur on the QEW for the removal of the defunct bridge structure.

8.1.11 Property Requirements
The new DDI will provide a commuter parking lot in the northwest quadrant of the interchange. Motorists leaving the facility are provided access to Airport Road via an egress road from the south of the parking lot. The egress road will require land transfer from Niagara Region unless it becomes part of Niagara Region’s new Airport Road connection from Glendale Avenue.

8.1.12 Maintenance Responsibilities
The DDI and the proposed OTIC/commuter parking lot facility will be owned and maintained by the MTO. It is anticipated that Niagara Region will be responsible for snow clearing operations on Glendale Avenue within the interchange which will be coordinated through an agreement between the MTO and Niagara Region.

8.2 Niagara Region’s Roundabout at Glendale Avenue / York Road Intersection

8.2.1 Intersection
The single lane roundabout at Glendale Avenue / York Road eliminates the existing signalization at the intersection, and reconfigures the road to accommodate partial channelization that provides unrestricted right turn movements travelling northbound on Glendale Avenue to York Road east and from the west of York Road to Glendale Avenue southbound.

8.2.2 Drainage
To accommodate the larger footprint of the roundabout, the culvert east of Glendale Avenue and beneath York Road will need to be extended by approximately 3.5m at both the north and south ends.
8.2.3 Electrical/Illumination

The existing traffic signal and illumination system at the intersection of Glendale Avenue and York Road will be removed. Due to the introduction of the roundabout at the intersection several Municipal light poles along Glendale Avenue and York Road will be impacted and replaced. The municipal illumination design criteria and requirements will be reviewed with Niagara Region during Detail Design.

8.2.4 Utilities

Existing utilities are highlighted in Table 8-3. Conflicts with the proposed construction will be identified and any necessary utility relocation will be determined during Detail Design.

<table>
<thead>
<tr>
<th>Utility Owner</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enbridge Gas</td>
<td>Glendale Avenue/York Road Intersection</td>
</tr>
<tr>
<td>Niagara Region – Water and Waste Water Services</td>
<td>Glendale Avenue/York Road Intersection</td>
</tr>
<tr>
<td>Town of Niagara-on-the-Lake – Hydro Services</td>
<td>Glendale Avenue/York Road Intersection</td>
</tr>
</tbody>
</table>

Table 8-3: Existing Utilities at the Glendale Avenue / York Road Intersection

8.2.5 Construction Staging and Traffic Management

The implementation of the roundabout at the intersection of Glendale Avenue and York Road will be completed independently of the QEW / Glendale Avenue DDI. The implementation of the roundabout can be completed independently, after the completion of either the standalone DDI works or the DDI works including the addition of the new Airport Road connection. It is anticipated that construction works will occur in several stages, so that existing traffic movements are maintained. This entails the widening of the roadway to accommodate the larger footprint of the roundabout. Furthermore, this will allow for further staging strategies to be implemented. Entrances to adjacent properties would be maintained over the course of these works.

8.2.6 Property Requirements

The current preferred plan is for the conversion of the Glendale Road and York Road intersection to a single lane roundabout with partial channelization. In order to accommodate a future potential widening of the roundabout to two lanes, the Detail Design will identify ultimate property requirements in order that Niagara Region can implement required property protection.

8.3 Niagara Region’s New Airport Road Connection from Glendale Avenue

8.3.1 Loop Ramp, Underpass Structure and Connecting Road

The new Airport Road connection from Glendale Avenue entails a new loop ramp in the northeast quadrant of the interchange. The loop ramp consists of one lane that is 4.75m in...
width, with a 2.5m shoulder on the right side and 1.0m shoulder on the left side of the lane. This ramp provides access to the proposed Airport Road connection via an underpass located just north of the Glendale Avenue interchange structure.

A new two lane two-way connection road from the commuter parking lot egress to the Airport Road and York Road intersection allows traffic to and from the parking lot from the York Road / Airport Road intersection. The connection road connection will feature two 3.50m lanes) with 2.0m shoulders on each side of the road platform.

### 8.3.2 Drainage

A new culvert is proposed beneath the 2-lane Airport Road connection, approximately 70m east of the Airport Road / York Road intersection. The implementation of this culvert will encompass removals associated with road embankment construction.

### 8.3.3 Electrical/Illumination

The Glendale Avenue underpass for the new Airport Road connection will be provided with LED luminaires. The connecting roadway will be fully illuminated to Municipal standards with conventional LED lighting. The Municipal illumination design criteria and requirements will be reviewed with Niagara Region.

### 8.3.4 Utilities

Existing utilities are highlighted in Table 8-4 below. Conflicts with the proposed construction will be identified and any necessary utility relocation will be determined during the next phase of the Project.

<table>
<thead>
<tr>
<th>Utility Owner</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enbridge Gas</td>
<td>Airport Road/York Road Intersection</td>
</tr>
<tr>
<td>Town of Niagara-on-the-Lake – Hydro Services</td>
<td>Airport Road/York Road Intersection</td>
</tr>
<tr>
<td>Niagara Region – Water and Waste Water Services</td>
<td>Airport Road/York Road Intersection</td>
</tr>
<tr>
<td>MTO (owned) Streetlight</td>
<td>Glendale Avenue / QEW on-ramp N/S-W</td>
</tr>
</tbody>
</table>

### 8.3.5 Construction Staging and Traffic Management

Construction works for the new Airport Road connection from Glendale Avenue are expected to occur in conjunction with the construction of the DDI to achieve efficiencies and avoid conflicts with the newly constructed Glendale Avenue embankment which is needed to accommodate the new underpass structure just north of the QEW bridge. The works will be strategically incorporated into the construction staging of the overall DDI, in conjunction with the Stage 2 through Stage 5 works outlined in Section 8.1.10.
The loop ramp and associated underpass beneath the new interchange structure will be constructed in conjunction with Stages 2 through 5 works. The Airport Road connection from the proposed OTIC/commuter parking lot ingress/egress to the York Road and Airport Road intersection will constructed in Stage 2 to Stage 4. Finally, the segment connecting the Airport Road connection and the loop ramp will be constructed in Stage 3.

8.3.6 Property Requirements

The South-West loop ramp providing connectivity to the new Airport Road connection from Glendale Avenue falls within the MTO ROW. A section of the connecting road extending from the west commuter parking lot entrance to the Airport Road / York Road intersection falls within Niagara Region road lands.

8.3.7 Maintenance Responsibilities

As stated in Section 8.3.4, the proposed loop ramp within the MTO ROW would be owned by MTO including the ingress/egress of the proposed OTIC/commuter parking lot facility. The road platform extending west of this juncture to the Airport Road / York Road intersection would be owned by Niagara Region. It is anticipated that Niagara Region and MTO will coordinate an agreement for the maintenance of the loop ramp underpass structure. In addition, it is expected that snow clearing operations for the loop ramp and Airport Road connection will be carried out by the Region which will be coordinated through an agreement between MTO and the Region.

9. Environmental Issues, Effects, Mitigation Measures and Commitments

9.1 MTO QEW / Glendale Avenue Diverging Diamond Interchange – Effects, Mitigation, Commitments

9.1.1 Natural Environment

9.1.1.1 Physiography and Soils

Potentials Impacts
Soil disturbance associated with construction activities may result in erosion.

Recommended Mitigation Measures
An erosion and sediment control plan will be implemented during construction. Measures to be incorporated may include but are not limited to: catch basin sediment traps, silt fences, rock check dams, erosion control blankets, etc. Erosion and sediment control structures will be designed, installed, maintained, and removed according to Ontario Provincial Standard Specifications (OPSS).
9.1.1.2 Drainage and Hydrogeology

Areas of Shallow Groundwater Table and Potential Dewatering

The existing water supply wells in the area mainly draw water from the overburden/bedrock interface aquifer. Overburden surficial aquifer systems may be present in the sand and gravel lenses/layers within the clay and silt (till) deposits. There is no groundwater table elevation information readily available for the surficial overburden aquifers within the Study Area. Generally shallow groundwater tables are present along surface water bodies.

A new bridge will be constructed at the interchange to replace the existing bridge. In addition, a number of existing culverts in within the Study Area will be replaced with new culverts. If the construction of the culvert and foundation of the bridge is going below the shallow groundwater table, groundwater dewatering will be needed to maintain dry work conditions.

If dewatering is required during construction (i.e., construction is anticipated to go below the groundwater table), the dewatering activities will have to be registered as “prescribed activities” on the Environmental Activity and Sector Registration (EASR) website if the amount of groundwater taken exceeds 50 m$^3$/day and is below 400 m$^3$/day. A Category 3 Permit to Take Water (PTTW) must be obtained from the Ministry of the Environment, Conservation and Parks (MECP) if the amount of groundwater taken exceeds 400 m$^3$/day during the dewatering activities.

There is no shallow groundwater table elevation data available in the vicinity of the interchange. Borehole work is currently ongoing that will provide information regarding the geological / hydrogeological conditions (stratigraphy, shallow groundwater level, thickness and hydraulic conductivity of the overburden aquifer) in the areas where deep excavations are required. This information will support the accurate evaluation of the need for an EASR or Category 3 PTTW.

Potential Water Well Impacts

As discussed earlier, there are no municipal wells located within the Study Area or in the vicinity. A total of 17 existing private water wells were identified within the 500 m buffer of the Study Area by the MECP well records.

Fourteen (14) of the 17 wells are bedrock aquifer wells with depths ranging from approximately 21.0 to 58.0 m below ground surface (bgs). These three overburden aquifer wells have depths ranging from 28.3 m to 41.1 m bgs. A review of the well record details for the overburden wells indicates that the overburden wells terminated in gravel deposits where water was found. Based on the depths of the gravel layer and soil description in the well records, the gravel deposits in these three wells likely are part of the overburden/bedrock interface zone and the wells actually draw water from the overburden/bedrock interface aquifer. Depths to bedrock ranged from approximately 14.6 m to 51.8 m bgs.

All existing water wells identified by the MECP well records appear drilled with a casing diameter ranging from 12.7 cm to 25.4 cm. The static groundwater level in the existing bedrock water wells ranged from approximately 1.8 m to 24.0 m bgs within the Study Area; the shallow groundwater levels may reflect the confined conditions of the overburden/bedrock interface aquifer. The static groundwater levels in the three overburden wells were reported to be 20.7 m to 23.2 m bgs.
Based on the proposed scope of the rehabilitation work, excavations will be required for the construction of the foundations of the piers and abutments for the new bridge, and/or the replacement of the culverts within the Study Area. If excavations are going below the shallow groundwater table, groundwater dewatering will be needed to maintain dry work conditions. Based on the depth of the water wells identified in the area, potential impact to these wells are unlikely. However it should be noted there could be unregistered water wells within the Study Area which are not documented in the MECP water well database. If dewatering is determined to be required, and the dewatering is carried in the areas where existing water wells are present, potential impacts to the shallow wells water wells in the area may occur.

**Potential Impacts to Local Groundwater**

The potential impacts of the construction work to the local groundwater system include, but are not limited to, the following:

- Changes to recharge/discharge regimes resulting from the disturbance of the ground surface, ground clearing and compaction;
- Potential spills of hydrocarbons and other chemicals used during construction activities could impact the groundwater aquifer and groundwater-dependent water bodies;
- Application of commercial fertilizers during seeding activities to re-establish vegetative cover; and
- Potential dewatering impacts, which include a reduction in groundwater level and/or reduced flow to the nearby water wells and groundwater dependent water bodies.

**Recommended Mitigation Measures**

The following mitigation measures are recommended to manage potential impacts:

- Minimize disturbance to existing vegetation and grassed slopes where re-grading is required (disturbed areas should be re-vegetated as quickly as possible after completion of construction activities);
- Prepare and implement a spill prevention and control management plan as per the MTO’s best management practices;
- Minimize runoff by following the MTO prescribed best management practices and Ontario Provincial Standard Specification (OPSS 804);
- If constructions goes below the shallow groundwater table and dewatering is required during the future structure rehabilitation work:
  - An evaluation of the need for an EASR or Category 3 PTTW shall be conducted based on the hydrogeological data collected from the geotechnical borehole investigations and design specifications;
  - As per Ontario Regulation 387/04 (water taking regulation) and Ontario Regulation 63/16 (water taking registration regulation), the dewatering activities will be registered as “prescribed activities” on the EASR website, if the amount of water taking exceeds 50 m$^3$/day and is below 400 m$^3$/day. A Category 3 PTTW must be obtained from the MECP if the amount of water taken exceeds 400 m$^3$/day;
Dewatering activities should be conducted in accordance with the control procedures as specified in the Ontario Provincial Standard Specification (OPSS) 518 Construction Specification for Control of Water from Dewatering Operations; and

A pre-construction door-to-door water well survey during the next phase of the Project is recommended to confirm the presence or absence of existing water wells in the vicinity (within 500 m radius) of the future dewatering locations and document the baseline conditions (both quality and quantity) of these wells. A water well monitoring program should be developed and implemented during and after the dewatering activities, if deemed necessary.

9.1.1.3 Fish and Fish Habitat

The in-water work timing window (i.e., when in-water works cannot occur) for watercourses within the Study Area is from March 1st to June 30th of any given year. Work must proceed with the restriction.

Figure 8-3 in Section 8.1.6 identifies the watercourses and culverts associated with this Project.

Table 9-1 identifies fish habitat, the proposed work, and gain/loss of fish habitat at each culvert / watercourse crossing. These culvert removals, extensions and replacements can avoid causing serious harm to the commercial, recreational, or Aboriginal (CRA) value of the fishery provided Detail Design:

- Maintains flow and fish passage, promotes substrate colonization within the culvert extensions, and avoids downstream erosion;
- Specifies appropriate environmental protection measures during construction, including compliance with the in-water work timing window; and
- Assesses temporary and/or permanent footprint in or near water, and completes the Fisheries Assessment process, including applicable project notification forms.

Provided that culvert designs maintain fish passage, promote substrate colonization within culvert extensions (e.g. embedded culverts), and avoid downstream erosion, it is expected that the Project can avoid causing serious harm to the commercial, recreational, or Aboriginal (CRA) value of the fishery. However, further Project details (e.g., confirmation of temporary and/or permanent footprint in or near water, the Project approach to construction, etc.) should be assessed during Detail Design to complete the Fisheries Assessment process. Applicable project notification forms should be prepared and submitted during the next phase of the Project.

No aquatic Species at Risk (SAR) were documented in the background review, nor observed during field investigations. Permitting under the federal Species at Risk Act (SARA) and the provincial Endangered Species Act (ESA) is not applicable.
### Table 9-1: Fish Habitat and Proposed Work at Each Culvert / Watercourse Crossing

<table>
<thead>
<tr>
<th>Culvert / Structure</th>
<th>Flow / Thermal Regime</th>
<th>Substrate</th>
<th>Vegetation</th>
<th>Fish Habitat</th>
<th>Change in Culvert Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX-01</td>
<td></td>
<td></td>
<td></td>
<td>Marginal fish habitat</td>
<td>Culvert to remain – No change</td>
</tr>
<tr>
<td>EX-02</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>Culvert to remain – No change</td>
</tr>
<tr>
<td>EX-03</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>Culvert to remain – No change</td>
</tr>
<tr>
<td>EX-04</td>
<td></td>
<td></td>
<td></td>
<td>Marginal fish habitat</td>
<td>Culvert to remain – No change</td>
</tr>
<tr>
<td>EX-05</td>
<td>Intermittent Warm/cool</td>
<td>Angular rip rap, detritus and silt.</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of deciduous trees and shrubs. In-stream: Instream cover (40% total cover) was provided primarily by rock protection and woody debris.</td>
<td>Marginal fish habitat</td>
<td>Culvert extended 3.5 m on north and 5.5 m on south.</td>
</tr>
<tr>
<td>REM-01</td>
<td>Intermittent Warm/cool</td>
<td>Silt, muck and detritus</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of common reed. In-stream: Instream cover (30% total cover) was provided primarily by common reed debris.</td>
<td>Marginal habitat</td>
<td>Culvert extended 8.2 m to north and 5.0 m to south</td>
</tr>
<tr>
<td>REM-02</td>
<td>Permanent</td>
<td>Clay, gravel and detritus</td>
<td>Riparian: Riparian cover was high (90%) which consisted of common reed. In-stream: In-stream cover (30% total cover) was provided by boulders, common reed and common reed debris.</td>
<td>Fish habitat</td>
<td>Culvert extended 6.0 m to north and 11.0 m to south</td>
</tr>
<tr>
<td>REM-04</td>
<td>Permanent</td>
<td>Gravel, silt and clay</td>
<td>Riparian: Riparian cover was moderate (60%) which consisted of shrubs and common reed. In-stream: In-stream cover (70% total cover) was provided by undercut banks and woody debris and common reed.</td>
<td>Fish habitat</td>
<td>Culvert extended 10.5 m to north</td>
</tr>
<tr>
<td>REM-05</td>
<td>Intermittent Warm/cool</td>
<td>Silt</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of common reed. In-stream: Within the assessed reach, instream cover (30% total cover) was provided primarily by common reed debris.</td>
<td>Marginal fish habitat</td>
<td>Removal of existing 22 m culvert (REM-01 and REM-05 removed and replaced by PR-04 at 27.5 m in length)</td>
</tr>
<tr>
<td>EX-06</td>
<td>Permanent</td>
<td>Silt</td>
<td>Riparian: Riparian cover was high (100% cover) which consisted of common reed.</td>
<td>Fish habitat</td>
<td>Existing 31.5 m culvert</td>
</tr>
<tr>
<td>Culvert / Structure</td>
<td>Flow / Thermal Regime</td>
<td>Substrate</td>
<td>Vegetation</td>
<td>Fish Habitat</td>
<td>Change in Culvert Structure</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td>REM-03</td>
<td>Warm/cool</td>
<td>cobble</td>
<td>In-stream: Within the assessed reach, instream cover (60% total cover) was provided primarily by cobble, woody debris and common reed</td>
<td>Not fish habitat</td>
<td>Not replaced</td>
</tr>
<tr>
<td>REM-04</td>
<td>Warm/cool</td>
<td>cobble</td>
<td></td>
<td>Not fish habitat</td>
<td>Replaced with PR-06</td>
</tr>
<tr>
<td>REM-05</td>
<td>Intermittent Warm/cool</td>
<td>Clay, silt and detritus</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of common reed and sumac. In-stream: Within the assessed reach, instream cover (30% total cover) was provided primarily by common reed debris.</td>
<td>Marginal fish habitat</td>
<td>Removal of existing 28 m culvert (REM-05 and REM-01 removed and replaced by PR-04 at 7.5m in length)</td>
</tr>
<tr>
<td>REM-06</td>
<td>Intermittent Warm/cool</td>
<td>Clay, silt and detritus</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of common reed and sumac. In-stream: Within the assessed reach, instream cover (30% total cover) was provided primarily by common reed debris.</td>
<td>Marginal fish habitat</td>
<td>Removal of existing 55 m culvert (Replaced with PR-02 at 35m in length)</td>
</tr>
<tr>
<td>REM-07</td>
<td>Warm/cool</td>
<td>cobble</td>
<td></td>
<td>Not fish habitat</td>
<td>Not replaced</td>
</tr>
<tr>
<td>REM-08</td>
<td>Warm/cool</td>
<td>cobble</td>
<td></td>
<td>Not fish habitat</td>
<td>Not replaced</td>
</tr>
<tr>
<td>PR-01</td>
<td>Permanent Warm/cool</td>
<td>Silt and cobble</td>
<td>Riparian: Riparian cover was high (100% cover) which consisted of common reed. In-stream: Within the assessed reach, instream cover (60% total cover) was provided primarily by cobble, woody debris and common reed</td>
<td>Fish habitat</td>
<td>Installation of 36 m culvert (Replaces REM-02 at 36m in length)</td>
</tr>
<tr>
<td>PR-02</td>
<td>Intermittent Warm/cool</td>
<td>Clay, silt and detritus</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of common reed and sumac. In-stream: Within the assessed reach, instream cover (30% total cover) was provided primarily by common reed debris.</td>
<td>Marginal fish habitat</td>
<td>Installation of 35 m culvert (Replaces REM-06 at 55m in length)</td>
</tr>
<tr>
<td>PR-03</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>New Culvert</td>
</tr>
<tr>
<td>PR-04</td>
<td>Intermittent Warm/cool</td>
<td>Clay, silt and detritus</td>
<td>Riparian: Riparian cover was high (90% cover) which consisted of common reed and sumac. In-stream: Within the assessed reach, instream cover (30% total cover) was provided primarily by common reed debris.</td>
<td>Marginal fish habitat</td>
<td>Installation of 27.5 m culvert (Replaces REM-01 at 22m in length and REM-05 at 28m in length)</td>
</tr>
<tr>
<td>PR-05</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>New culvert</td>
</tr>
<tr>
<td>Culvert / Structure</td>
<td>Flow / Thermal Regime</td>
<td>Substrate</td>
<td>Vegetation</td>
<td>Fish Habitat</td>
<td>Change in Culvert Structure</td>
</tr>
<tr>
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<td>-----------------------</td>
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<td>------------</td>
<td>--------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>PR-06</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>Replaces REM-04</td>
</tr>
<tr>
<td>PR-07</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>New Culvert</td>
</tr>
<tr>
<td>PR-08</td>
<td>(At Niagara Region's New Airport Road Connection Loop Ramp)</td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>New Culvert</td>
</tr>
<tr>
<td>PR-09</td>
<td></td>
<td></td>
<td></td>
<td>Not fish habitat</td>
<td>New Culvert</td>
</tr>
</tbody>
</table>

1EX – existing culvert extended  
2REM – existing culvert to remain  
3PR – new culvert
### 9.1.1.4 Terrestrial Ecosystems

**Figure 4-1**, in Section 4.1.4.3 shows the Ecological Land Classifications / vegetation communities within the Study Area. **Section 4.1.4.3** also provides definitions of the Ecological Land Classifications.

Potential effects on vegetation communities, SWH and SAR habitats are anticipated as result of vegetation removal required for the proposed works and are summarized in **Table 9-2** below.

**Table 9-2: Summary of Potential Effects on Terrestrial Ecosystem Features – QEW / Glendale Avenue Interchange**

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Total Area within Study Area (ha)</th>
<th>Total Area Affected by Diverging Diamond Interchange (ha)</th>
<th>Potentially Affected SWH Types</th>
<th>Potentially Affected SAR Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Cultural Meadow (CUM1)</td>
<td>23.3</td>
<td>9.3</td>
<td>• Candidate SWH for the following SOCC: Monarch</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Cultural Thicket (CUT1)</td>
<td>2.1</td>
<td>0.1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Cultural Woodland (CUW1)</td>
<td>4.0</td>
<td>1.0</td>
<td>• Candidate SWH for the following SOCC: Eastern Wood-Pewee</td>
<td>• Bat SAR: Eastern Small-footed Myotis Little Brown Myotis Northern Myotis Tri-coloured Bat</td>
</tr>
<tr>
<td>Cultural Hedgerow (CUH)</td>
<td>0.7</td>
<td>Negligible(^1)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2)</td>
<td>5.4</td>
<td>0.1</td>
<td>• Candidate SWH for the following SOCC: Eastern Wood-Pewee</td>
<td>• Bat SAR: Eastern Small-footed Myotis Little Brown Myotis Northern Myotis Tri-coloured Bat</td>
</tr>
<tr>
<td>Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4)</td>
<td>0.5</td>
<td>No Vegetation Removal Proposed</td>
<td>• Confirmed SWH for the following: Other Rare Vegetation Communities</td>
<td>N/A</td>
</tr>
<tr>
<td>Manicured Lawn</td>
<td>4.6</td>
<td>0.2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Meadow Marsh (MAM2)</td>
<td>4.8</td>
<td>1.2</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
Vegetation

The potential impacts to vegetation communities are described as follows:

- **Loss and/or Damage to Vegetation Communities within the Construction Disturbance Area (CDA):**

  The majority of vegetation removals will be limited to the QEW ROW; therefore, mostly within the Mineral Cultural Meadow (CUM1), which is subject to existing anthropogenic-based disturbances and contains a high proportion of non-native and/or invasive species. A relatively small area and portion of Mineral Cultural Woodland (CUW1) and Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2) will also be removed. The possibility of accidental intrusion into the adjacent vegetation communities surrounding the vegetation removal areas is also a potential effect. No potential effects on SAR, SOCC or locally rare plants are anticipated as no such plants were found to be naturally occurring within the QEW ROW during field investigations.

  Vegetation communities may be indirectly affected through sedimentation and soil erosion, changes in drainage patterns, and soil and water contamination as described below.

- **Fill and Sediment Deposition within Vegetation Communities:**

  During grading of the site, fill and sediment runoff from the active construction area may enter vegetation communities and adjacent watercourses and wetlands, if not appropriately controlled.

- **Contamination of Soil or Water (including groundwater):**

  Oil, gasoline, grease and other materials from construction equipment, materials, storage and handling may enter vegetation communities and adjacent watercourses and wetlands if not appropriately managed.

- **Introduction or Spread of Invasive Species:**

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Total Area within Study Area (ha)</th>
<th>Total Area Affected by Diverging Diamond Interchange (ha)</th>
<th>Potentially Affected SWH Types</th>
<th>Potentially Affected SAR Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reed Canary Grass Mineral Meadow Marsh (MAM2-2)</td>
<td>0.2</td>
<td>Negligible</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cattail Mineral Shallow Marsh (MAS2-1)</td>
<td>0.04</td>
<td>No Vegetation Removal Proposed</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Open Aquatic (OAO)</td>
<td>0.03</td>
<td>No Vegetation Removal Proposed</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46.8</strong></td>
<td><strong>12.0</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ¹ Negligible indicates 0.01 ha or less.
Removal of at least 1 ha of Mineral Meadow Marsh (MAM2) dominated by common reed within the Study Area is anticipated. Common reed is a very aggressive wetland invasive plant that out-competes native species and forms dense stands, which ultimately decrease the ecological integrity and function of wetlands (MNRF, 2011). Clearing and grading, and movement of equipment may result in the spread of invasive species. Therefore, there is the potential for the establishment and spread of invasive species in new areas and further spread in already established areas if invasive control measures are not implemented.

- **Reduction of Surface Water and Groundwater to Vegetation Communities:**
  Alteration of surface water runoff or groundwater inputs may result in damage or alteration to the vegetation communities.

**Wildlife**

The majority of the Construction Disturbance Area (CDA) consists of vegetation communities that are disturbed from anthropogenic influences. Nevertheless, the vegetation communities identified within the CDAs are likely to support breeding migratory birds that are common and tolerant to disturbances. Structures and culverts within the Study Area provide potentially suitable nesting habitat for migratory birds including Barn Swallow, which is listed as Threatened under the ESA (refer to the section below on Species at Risk for potential impacts to SAR and their habitats). The majority of migratory birds receive protection under the federal *Migratory Birds Convention Act* (MBCA) while others receive protection under the provincial *Fish and Wildlife Conservation Act, 1997*.

Candidate SWH for SOCC (Eastern Wood-pewee and Monarch) was identified for the affected vegetation communities in the CDA for each alternative as described in Table 9-2. Potential impacts to breeding birds, other wildlife and SWH are as follows:

- **Disturbance/Displacement of Breeding Birds and/or Destruction of Their Active Nests:**
  Vegetation removal during the breeding bird season of April 1st to August 31st can cause disturbance/displacement of breeding migratory birds and/or destruction of their active nests, which is prohibited under the MBCA. Potential impacts to migratory birds are anticipated to be negligible provided that mitigation measures such as construction timing constraints and avoidance measures as described in the section below are implemented.

  A cup-shaped nest was identified in the culvert inlet under Glendale Avenue north of York Road by AECOM on October 18, 2017. It is recommended that nest searches be completed during Detail Design to confirm the presence or absence of migratory bird nests affected by the proposed works.

- **Disturbance/Displacement of Other Wildlife and SWH**
  The potential effects described for migratory birds above also apply to bird SOCC, Eastern Wood-pewee. The vegetation removal proposed within the Mineral Cultural Meadow (CUM1) may result in temporary habitat loss for Monarch until this vegetation community becomes re-established following the completion of construction activities. No vegetation removal is proposed within the rare Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4).
Species at Risk (SAR)

As identified in Table 9-2, potentially suitable habitats for the following SAR are anticipated to be affected by vegetation removal: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tricoloured Bat. Potential effects to bat SAR include:

- **Removal of Bat SAR Habitat:**

  According to the Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis and Tri-coloured Bat (MNRF, 2017), “any coniferous, deciduous or mixed wooded ecosite, including treed swamps, that include trees at least 10 cm diameter-at-breast height (dbh) should be considered suitable maternity roost habitat.” Removal of trees at least 10 cm DBH in the forest areas may cause habitat loss to bat SAR (refer to the section below for more details on additional surveys).

- **Disturbance/Displacement and Possible Injury and/or Mortality of Bat SAR:**

  Bat SAR may be inadvertently killed or injured as a result of the removal of or accidental damage to suitable maternity roost trees if proposed works occur during the bat roosting season between May 1st and September 1st (MNRF, 2015b).

Given that a potential Barn Swallow nest was observed within the culvert inlet under Glendale Avenue north of York Road by AECOM on October 18, 2017, Barn Swallows and/or their habitat may be affected by proposed Project works as described below. It is recommended that nest searches be undertaken during Detail Design to confirm the presence or absence of Barn Swallow nests affected by the proposed works (refer to the section below for more details on additional surveys).

- **Disturbance/Displacement and Possible Injury and/or Mortality of Barn Swallow:**

  If, during Detail Design, active Barn Swallow nests are found in culverts that will remain in place, noise and vibration during construction could result in the displacement of Barn Swallows or the abandonment of their nests if proposed works are to occur within the breeding bird period (April 1st to August 31st). These potential impacts would result in a contravention of the ESA.

- **Removal of Barn Swallow Habitat:**

  If, during Detail Design, active Barn Swallow nests are found in culverts to be removed, loss of habitat may result if culvert replacement occurs within the breeding bird period (April 1st to August 31st).

Mitigation Measures

Proposed mitigation and avoidance measures for the potential impacts on terrestrial features based on the proposed works are described below:

- To assist in mitigating potential impacts, the following MTO Provisions should be utilized, as a minimum:
  - OPSS-804: Construction Specification for the Seed and Cover;
• Should any areas be accidentally disturbed, the restoration of the disturbed areas will be required in accordance with OPSS-804: Construction Specification for the Seed and Cover;
  
  o OPSS-801: Construction Specification for the Protection of Trees;
  
  o OPSS-180: General Specification for the Management of Excess Materials;
    • Construction material should be stored within an authorized location and any soil stockpiles should be located within a suitable sediment fenced and protected location only;
  
  o OPSS-182: General Specification for Environmental Protection for Construction in Waterbodies and on Waterbody Banks;
  
  o Special Provision (SP) 199S56: Control of Emissions During Structural Work;
  
  o OC_EN_06: Operation Constraint – Control Measures during Removal of Concrete, Concrete, Repair / Construction, and Concrete Sawcutting;
  
  o OC_EN- Cleaning of Equipment and Invasive Species Prevention. All machinery, construction equipment and vehicles should be washed prior to leaving the construction site in order to prevent the spread of invasive species to other locations;
  
  o Non-Standard Special Provision (NSSP): Operational Constraint- Migratory Bird Protection;
    • Schedule vegetation removal to occur outside of the breeding bird season of April 1st to August 31st to avoid disturbance to breeding birds and destroying active nests, including any bird SAR. If vegetation removal must occur within this time period, active nest searches may be conducted prior to vegetation removal by a qualified biologist within ‘simple habitats’ (e.g., manicured lawn with planted trees within the Study Area) or if minor vegetation clearing is required during this period, to ensure that no active nests of breeding birds or bird SAR are destroyed, in order to prevent any contravention of the MBCA and / or the ESA;
  
• Vegetation removal, grading and soil compaction should be kept to a minimum;

• If during Detail Design it is determined that removal of suitable maternity roost trees is required, the removal of these trees should be scheduled to occur outside of the bat roosting season between May 1st and September 1st. Additional mitigation measures and permitting requirements under the ESA shall be confirmed with the MNRF during the next phase of the Project for removal of bat cavity trees;

• Temporarily disturbed areas should be rehabilitated in accordance with OPSS-804: Construction Specification for the Seed and Cover; and

• Any SAR observations should be reported to MNRF and MTO and protection must be implemented immediately to ensure compliance with the ESA.

Additional Survey Recommendations

The following surveys are recommended for completion during Detail Design:
• Bird nest searches during the peak breeding season for the bulk of Ontario’s species (May 24th and July 10th; OBBA, 2001) should be completed in culverts that will be affected by the proposed works.

• The MNRF should be consulted regarding the required surveys to confirm suitable bat SAR habitat within forests or woodlands wherein vegetation removal is proposed. At a minimum, it is anticipated that leaf-off surveys following the Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis and Tri-coloured Bat (MNRF, 2017) will be required. The MNRF should confirm whether leaf-on surveys for Tri-coloured Bat are required, whether cultural treed areas (e.g., cultural woodlands, hedgerows) within the Study Area are considered suitable bat SAR habitat, and whether specific surveys for Eastern Small-footed Myotis are required.

• Although not listed at the time of this report was prepared, Special Concern species listed under the ESA may be up-listed to Threatened or Endangered during Detail Design and construction. Should this occur, the MNRF should be consulted to determine how to proceed in accordance with the ESA.

9.1.2 Socio-Economic Environment

9.1.2.1 Land Use

As noted in Section 8, the QEW / Glendale Avenue interchange alignment will be shifted slightly to the east to allow the construction of the new bridge to occur while the existing interchange is still operating at full capacity. As a result, impacts to local, tourist and commercial traffic are expected to be low during construction, with potential for minimal night-time closures as the new bridge and interchange are transitioned into full service. Construction staging plans will be developed during Detail Design and potential impacts to local traffic will be identified at that time.

Access to adjacent properties and businesses, and to Niagara College, will be maintained during construction of the new interchange; therefore, no impacts to hospitality, retail, institutional, commercial or industrial facilities are expected.

Any property requirements for the DDI, relative to lands owned by each of MTO and Niagara Region, are being coordinated between MTO and Niagara Region. No private property impacts are anticipated. Property impacts will be confirmed during Detail Design.

Some indirect impacts associated with construction of the interchange improvements to adjacent land uses (e.g. potential noise impacts, construction dust) are anticipated. These impacts are discussed in greater detail below.

The new bridge and interchange will serve as a gateway to the Town of Niagara-on-the-Lake. The QEW / Glendale Avenue interchange serves as the crossroads for local residents and tourists, and the new interchange design allows for efficient flow of traffic and accommodates active transportation while maintaining an aesthetically pleasing appearance due to its unique design.
9.1.2.2  **Aesthetics / Landscape Composition**

The DDI will be built within the existing ROW and result in a minor change to existing views and vistas. A landscape plan will be developed during Detail Design.

9.1.2.3  **Utilities**

All potentially affected utility companies have been contacted regarding the need to develop a utility relocation plan during Detail Design. It is anticipated that all utility relocations will be completed before commencement of construction, but if some relocations are delayed, the construction Contractor will be required to coordinate the timing of each utility operation to ensure that they are carried out independently and do not conflict with construction operations. Special provisions will be included in the next phase of this Project to address this, and to make certain that care and precautions are taken to safeguard existing utilities from damage.

9.1.2.4  **Construction Noise**

In the Construction Noise Assessment completed for this Project, noise predictions were conducted at representative receptors which were selected to be representative of the locations with the worst case construction noise exposure for each noise sensitive area (NSA). Refer to **Figure 9-1** for the location of each NSA. Locations further removed from the construction site will have lower noise exposures from Project related construction activities. Construction noise levels related to the Project presented in **Table 9-3**.

**Figure 9-1: Noise Sensitive Areas**
### Table 9-3: Construction Noise Assessment Results

<table>
<thead>
<tr>
<th>NSA ID</th>
<th>Representative Receptors</th>
<th>Approx. Dist. (m)</th>
<th>Predicted Construction Noise Levels at Dwellings (dBA – $L_{eq,8hr}$)</th>
<th>Above or Below Night Time Basis of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Removals</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Bridge Construction</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Potential Piling Type 1/2/3</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Road Construction</strong></td>
<td></td>
</tr>
<tr>
<td>NSA1</td>
<td>Detached Dwellings</td>
<td>185/590</td>
<td>69</td>
<td>57</td>
</tr>
<tr>
<td>NSA2</td>
<td>School Residence</td>
<td>45/230</td>
<td>81</td>
<td>65</td>
</tr>
<tr>
<td>NSA3</td>
<td>White Oaks Resort</td>
<td>38/125</td>
<td>83</td>
<td>70</td>
</tr>
<tr>
<td>NSA4</td>
<td>Hilton Garden Inn</td>
<td>140/460</td>
<td>71</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Holiday Inn Express</td>
<td>185/470</td>
<td>69</td>
<td>59</td>
</tr>
<tr>
<td>NSA5</td>
<td>Airport Road Residence</td>
<td>265/655</td>
<td>66</td>
<td>56</td>
</tr>
</tbody>
</table>

*Note: For approximate distance - first distance is the shortest distance from assessed receptor to construction area. The second distance is for the Bridge Construction and Potential Piling, the distance is from the receptor to the bridge construction area.*

The results in the above table indicate that construction noise levels due to the Project can range, depending on the location and proximity to construction, between 56 and 83 dBA.

The assessment is based upon conservative assumptions, such as the construction equipment operating at the closest point of the construction areas to the NSAs without any shielding effects. Actual achieved noise levels will likely be lower than the predicted noise levels.

The highest noise levels are expected during the removals/demolition and road construction types due to the close proximity of the construction to the noise sensitive areas. Impact and vibratory piling methods are predicted to be above the night time basis of assessment, while the auger method being below the night time basis of assessment.

Much of the equipment for the removals and road construction types are transient equipment which should not be in any one location for an extended period of time. Other stationary noise sources with high noise emission, such as generators and compressors, should be located as far away from residences as possibly feasible.

Efforts should be taken to control noise levels and to minimize the disturbance to the NSAs surrounding the Project. Recommendations to reduce noise levels and the likelihood of complaints are presented below.
Mitigation Measures

- An exemption from the Town of Niagara-on-the-Lake noise control bylaw 4588-12 will be required to permit operation of construction equipment between the hours of 11:00pm and 9:00am of the next day.
- Equipment should comply with the sound emission standards for construction equipment outlined in MECP publications NPC-115 and NPC-118. Where feasible, equipment with broadband backup alarms instead of tonal backup alarms/beepers should be utilized.
- Equipment should 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 should be restricted to the minimum time necessary to complete the specified work.

9.1.2.5 Air Quality

Construction activities will involve heavy equipment that generates air pollutants and dust; however, these impacts are temporary in nature and are largely unavoidable. The emissions are highly variable and difficult to predict, depending on the specific activities that are taking place and the effectiveness of the mitigation measures. The best manner to deal with these emissions is through the implementation of operating procedures, such as application of dust suppressants, reduced travel speeds for heavy vehicles, efficient staging of activities and minimization of haul distances, covering stockpiles, etc. In order to minimize potential air quality impacts during construction, the contract package will include requirements for implementing best management practices for control of dust and other emissions.

9.1.2.6 Waste and Contamination

As documented in Section 4.2.2.10, nine COS ID parcels were identified as having a “high” potential for environmental contamination; seventeen (17) COS ID parcels were identified as having “medium” potential for environmental contamination; and four significant spill locations were identified within the Study Area.

Further environmental studies / investigations of those high and medium properties directly impacted by improvements to the QEW / Glendale Avenue interchange would be recommended to confirm the environmental conditions of such lands in support of both property acquisition, environmental due diligence, interchange construction and management of surplus / excess soil / materials. These studies / investigations may include Phase One ESAs and Phase Two ESAs. If contamination is identified, mitigation measures may need to be developed and implemented which may include environmental site clean-up / remediation and/or risk assessment.

A Designated Substance Survey (DSS) was undertaken on the QEW / Glendale Avenue bridge and six culverts. Grade level roads surrounding or leading to/from or adjacent to these structures or other surrounding surface highway lanes were not included in the DSS.

Based on the findings of the DSS, the following are recommended:
Sampling has identified that no asbestos is present along the bridge and culverts inspected by AECOM. Should concealed suspect ACM be identified during demolition/renovation/maintenance, then the material must be sampled/analyzed or assumed to be ACM in accordance with O. Reg. 278/05.

A qualified Contractor must control all repair, maintenance, renovation and/or demolition activities on the Site to minimize worker exposure to silica and/or lead dust in accordance with O. Reg. 490/09. As required by O. Reg. 490/09, airborne silica concentrations must not exceed a time-weighted average (TWA) of 0.10 milligrams of silica per cubic metre for quartz/tripoli and a TWA of 0.05 milligrams of lead per cubic metre for elemental lead, inorganic and organic compounds of lead, respectively. Recycling of silica-based materials removed from any work areas should be conducted in accordance with O. Reg. 102/94 and O. Reg. 103/94 under the Ontario Environmental Protection Act. Demolition or any disturbance of any silica-containing bridge materials should be conducted following recommendations detailed within the Ministry of Labour (MOL) silica guidelines, where specific legislation is not included under the Occupational Health and Safety Act (OHSA).

9.1.3 Cultural Environment

9.1.3.1 Archaeological Resources

As documented in Section 4.3.1, the Stage 1 AA was completed by using background research to describe the geography, land use history, previous archaeological fieldwork and current conditions of the property to determine its archaeological potential. In addition, satellite imagery and thematic and historic maps were analyzed, as well as the Official Plan for the Town of Niagara-on-the-Lake, which discusses resource and management policies for archaeological planning and potential. The results of the Stage 1 AA indicate that while portions of the Study Area have been extensively and deeply disturbed by past construction activity of the QEW, Glendale Avenue and associated infrastructure, there appear to be areas that are possibly undisturbed and still contain archaeological potential.

Given the results of this assessment, AECOM makes the following recommendations:

- Due to the presence of deep and extensive disturbance (marked in solid red in Figure 4-3) are deemed to no longer contain archaeological potential. No further work is required in these areas.

- Areas marked in green in Figure 4-3 require Stage 2 test pitting at 5m intervals, as per Section 2.1.2 of the Test Pit Survey of the Standards and Guidelines for Consultant Archaeologists (2011), in order to identify any archaeological sites and to determine the extent and degree of ground disturbance.

- All other areas have been previously assessed and are marked in red cross hatching and red oblique lines (ASI 2015; New Directions 2015). These areas require no further archaeological assessment.

9.1.3.2 Built Heritage and Cultural Resources

No built heritage resources or cultural heritage resources are located within the Study Area. As such, no mitigation measures are proposed.
9.2 Niagara Region’s Roundabout at Glendale Avenue / York Road Intersection – Effects, Mitigation, Commitments (Incremental above those of the MTO Glendale Avenue Interchange Improvements)

9.2.1 Natural Environment

9.2.1.1 Physiography and Soils

See Section 9.1.1.1.

9.2.1.2 Drainage and Hydrogeology

See Section 9.1.1.2.

9.2.1.3 Fish and Fish Habitat

See Section 9.1.1.3.

9.2.1.4 Terrestrial Ecosystems

Figure 4-1, in Section 4.1.4.3 shows the Ecological Land Classifications / vegetation communities within the Study Area. Section 4.1.4.3 also provides definitions of the Ecological Land Classifications.

Potential effects on vegetation communities, SWH and SAR habitats are anticipated as result of vegetation removal required for the proposed works and are summarized in Table 9-4 below.

Table 9-4: Summary of Potential Effects on Terrestrial Ecosystem Features – Roundabout at Glendale Avenue / York Road Intersection

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Total Area within Study Area (ha)</th>
<th>Total Area Affected by Roundabout at Glendale/ York Intersection (ha)</th>
<th>Potentially Affected SWH Types</th>
<th>Potentially Affected SAR Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Cultural Meadow (CUM1)</td>
<td>23.3</td>
<td>Negligible</td>
<td>Candidate SWH for the following SOCC:</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Monarch</td>
<td></td>
</tr>
<tr>
<td>Mineral Cultural Thicket (CUT1)</td>
<td>2.1</td>
<td>No Vegetation Removal Proposed</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Cultural Woodland</td>
<td>4.0</td>
<td>No Vegetation Removal</td>
<td>Candidate SWH for the following</td>
<td>Bat SAR:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Eastern Small-</td>
<td></td>
</tr>
</tbody>
</table>
### Vegetation

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Total Area within Study Area (ha)</th>
<th>Total Area Affected by Roundabout at Glendale/ York Intersection (ha)</th>
<th>Potentially Affected SWH Types</th>
<th>Potentially Affected SAR Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CUW1)</td>
<td>Proposed</td>
<td>SOCC: - Eastern Wood-Pewee - Little Brown Myotis - Northern Myotis - Tri-coloured Bat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural Hedgerow (CUH)</td>
<td>0.7</td>
<td>Negligible</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2)</td>
<td>5.4</td>
<td>0.2</td>
<td>Candidate SWH for the following SOCC: - Eastern Wood-Pewee</td>
<td>Bat SAR: - Eastern Small-footed Myotis - Little Brown Myotis - Northern Myotis - Tri-coloured Bat</td>
</tr>
<tr>
<td>Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4)</td>
<td>0.5</td>
<td>No Vegetation Removal Proposed</td>
<td>Confirmed SWH for the following: - Other Rare Vegetation Communities</td>
<td>N/A</td>
</tr>
<tr>
<td>Manicured Lawn</td>
<td>4.6</td>
<td>0.2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Meadow Marsh (MAM2)</td>
<td>4.8</td>
<td>0.1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Reed Canary Grass Mineral Meadow Marsh (MAM2-2)</td>
<td>0.2</td>
<td>Negligible</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cattail Mineral Shallow Marsh (MAS2-1)</td>
<td>0.04</td>
<td>No Vegetation Removal Proposed</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Open Aquatic (OAO)</td>
<td>0.03</td>
<td>No Vegetation Removal Proposed</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>46.8</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** ¹ Negligible indicates 0.01 ha or less.

### Vegetation

In addition to the potential impacts documented under Vegetation in Section 9.1.1.4 to vegetation communities, the roundabout at the Glendale Avenue / York Road intersection poses the following potential impact to vegetation communities:

- Loss and/or Damage to Vegetation Communities within the Construction Disturbance Area (CDA):
The CDA for the roundabout overlaps 0.3ha of mostly Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2) and Mineral Meadow Marsh (MAM2), resulting in a total of approximately 0.5ha of vegetation communities that may be affected by clearing activities associated with the proposed works. The 0.2 ha of impacted Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2) located northeast of the Glendale Avenue and York Road intersection represents significant woodland.

**Wildlife**

No impacts to wildlife and SWH in addition to those described under Wildlife in Section 9.1.1.4 are anticipated as a result of the Construction Disturbance Area associated with the roundabout at the Glendale Avenue / York Road intersection.

**Species at Risk (SAR)**

No impacts to SAR in addition to those described under Species at Risk in Section 9.1.1.4 are anticipated as a result of the roundabout at the Glendale Avenue / York Road intersection.

**Mitigation Measures**

See Mitigation Measures documented in Section 9.1.1.4.

**Additional Survey Recommendations**

See Additional Survey Recommendations documented in Section 9.1.1.4.

### 9.2.2 Socio-Economic Environment

#### 9.2.2.1 Land Use

As noted in Section 8, the construction of the Region’s roundabout will occur after the construction of the new DDI and Airport Road connection is completed. The Airport Road connection will carry traffic from Glendale Avenue directly to the Airport Road / York Road intersection, reducing the amount of traffic that will need to pass through the roundabout at the Glendale Avenue / York Road intersection during construction. Short-term closures of the intersection are anticipated during the transition between operation of the existing signalized intersection and the new roundabout. Construction staging plans will be developed during the Detail Design, and potential impacts to local traffic will be identified at that time.

Access to adjacent properties and businesses will be maintained during construction of the new roundabout; therefore, no impacts to hospitality, retail, institutional, commercial or industrial facilities are expected.

Construction of the roundabout will require acquisition of minimal private property in the southeast quadrant of the roundabout. Property impacts will be confirmed during Detail Design of the Project, and once they are confirmed representatives from Niagara Region will contact affected property owners to discuss the proposed impacts to their property and begin negotiations to acquire the required property.
Some indirect impacts associated with construction of the roundabout to adjacent land uses (e.g. potential noise impacts, construction dust) are anticipated. These impacts are discussed in greater detail below.

9.2.2.2 Aesthetics / Landscape Composition

There is the opportunity for landscaping within the central island of the roundabout. A landscape plan will be developed during Detail Design.

9.2.2.3 Utilities

See Section 9.1.2.3.

9.2.2.4 Construction Noise

See Section 9.1.2.4.

9.2.2.5 Air Quality

See Section 9.1.2.5.

9.2.2.6 Waste and Contamination

See Section 9.1.2.6.

9.2.3 Cultural Environment

9.2.3.1 Archaeological Resources

See Section 9.1.3.1.

9.2.3.2 Built Heritage and Cultural Resources

See Section 9.1.3.2.
9.3 Niagara Region’s New Airport Road Connection from Glendale Avenue – Effects, Mitigation, Commitments (Incremental above those of the MTO Glendale Avenue Interchange Improvements)

9.3.1 Natural Environment

9.3.1.1 Physiography and Soils

See Section 9.1.1.1.

9.3.1.2 Drainage and Hydrogeology

See Section 9.1.1.2.

9.3.1.3 Fish and Fish Habitat

See Section 9.1.1.3.

9.3.1.4 Terrestrial Ecosystems

Figure 4-1, in Section 4.1.4.3 shows the Ecological Land Classifications / vegetation communities within the Study Area. Section 4.1.4.3 also provides definitions of the Ecological Land Classifications.

Potential effects on vegetation communities, SWH and SAR habitats are anticipated as result of vegetation removal required for the proposed works and are summarized in Table 9-5 below.

Table 9-5: Summary of Potential Effects on Terrestrial Ecosystem Features – New Airport Road Connection

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Total Area within Study Area (ha)</th>
<th>Total Area Affected by New Airport Road Connection from Glendale Avenue (ha)</th>
<th>Potentially Affected SWH Types</th>
<th>Potentially Affected SAR Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Cultural Meadow (CUM1)</td>
<td>23.3</td>
<td>1</td>
<td>• Candidate SWH for the following SOCC:</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Monarch</td>
<td></td>
</tr>
<tr>
<td>Mineral Cultural Thicket (CUT1)</td>
<td>2.1</td>
<td>No Vegetation Removal Proposed</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Cultural</td>
<td>4.0</td>
<td>0.5</td>
<td>• Candidate SWH</td>
<td>• Bat SAR:</td>
</tr>
</tbody>
</table>
### Vegetation

#### Total Area within Study Area (ha) vs. Total Area Affected by New Airport Road Connection from Glendale Avenue (ha)

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Total Area within Study Area (ha)</th>
<th>Total Area Affected by New Airport Road Connection from Glendale Avenue (ha)</th>
<th>Potentially Affected SWH Types</th>
<th>Potentially Affected SAR Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodland (CUW1)</td>
<td></td>
<td></td>
<td>for the following SOCC:</td>
<td>Eastern Small-footed Myotis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Eastern Wood-Pewee</td>
<td>Little Brown Myotis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Little Brown Myotis</td>
<td>Northern Myotis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Tri-coloured Bat</td>
<td></td>
</tr>
<tr>
<td>Cultural Hedgerow (CUH)</td>
<td>0.7</td>
<td>Negligible</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2)</td>
<td>5.4</td>
<td>0.1</td>
<td>Candidate SWH for the following SOCC:</td>
<td>Eastern Small-footed Myotis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Eastern Wood-Pewee</td>
<td>Little Brown Myotis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Little Brown Myotis</td>
<td>Northern Myotis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Tri-coloured Bat</td>
<td></td>
</tr>
<tr>
<td>Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4)</td>
<td>0.5</td>
<td>No Vegetation Removal Proposed</td>
<td>Confirmed SWH for the following:</td>
<td>Other Rare Vegetation Communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Eastern Wood-Pewee</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Little Brown Myotis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Tri-coloured Bat</td>
<td></td>
</tr>
<tr>
<td>Manicured Lawn</td>
<td>4.6</td>
<td>0.2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mineral Meadow Marsh (MAM2)</td>
<td>4.8</td>
<td>0.1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Reed Canary Grass Mineral Meadow Marsh (MAM2-2)</td>
<td>0.2</td>
<td>Negligible</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cattail Mineral Shallow Marsh (MAS2-1)</td>
<td>0.04</td>
<td>No Vegetation Removal Proposed</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Open Aquatic (OAO)</td>
<td>0.03</td>
<td>No Vegetation Removal Proposed</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>46.8</strong></td>
<td><strong>1.9</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Negligible indicates 0.01 ha or less.

In addition to the potential impacts documented under Vegetation in **Section 9.1.1.4** to vegetation communities, the new Airport Road connection from Glendale Avenue poses the following additional potential impact to vegetation communities:
• **Loss and/or Damage to Vegetation Communities within the Construction Disturbance Area (CDA):**

The CDA for the new Airport Road Connection overlaps 1.5 ha of mostly Mineral Cultural Meadow (CUM1) and Mineral Cultural Woodland (CUW1), resulting in a total of approximately 1.9 ha of vegetation communities that may be affected by clearing activities associated with the proposed works. The edge of the Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2) located northeast of the QEW and Glendale Avenue interchange, which represents significant woodland, may also be affected.

**Wildlife**

No impacts to wildlife and SWH in addition to those described under Wildlife in **Section 9.1.1.4** are anticipated as a result of the CDA associated with the new Airport Road connection from Glendale Avenue.

**Species at Risk (SAR)**

No impacts to SAR in addition to those described under Species at Risk in **Section 9.1.1.4** are anticipated as a result of the new Airport Road connection from Glendale Avenue.

**Mitigation Measures**

See Mitigation Measures in **Section 9.1.1.4**.

**Additional Survey Recommendations**

See Additional Survey Recommendations documented in **Section 9.1.1.4**.

**9.3.2 Socio-Economic Environment**

**9.3.2.1 Land Use**

As noted in **Section 8**, construction of the Region’s Airport Road connection is anticipated to occur at the same time as construction of the new DDI. The Airport Road connection is a new roadway, therefore there will be minimal impact to traffic restrictions as a result of construction other than the new south leg of the Airport Road / York Road intersection. Construction staging plans will be developed during Detail Design and potential impacts to local traffic will be identified at that time.

Any property requirements relative to lands owned by each of MTO and Niagara Region for the new Airport Road connection are being coordinated between MTO and Niagara Region. No private property impacts are anticipated. Property impacts will be confirmed during the Detail Design.

Some indirect impacts associated with construction of the Airport Road connection to adjacent land uses (e.g. potential noise impacts, construction dust) are anticipated. These impacts are discussed in greater detail below.
9.3.2.2 Aesthetics / Landscape Composition

The Preferred Preliminary Design / Design Concept results in a minor change to existing views and vistas. A landscape plan will be developed during subsequent design stages.

9.3.2.3 Utilities

See Section 9.1.2.3.

9.3.2.4 Construction Noise

See Section 9.1.2.4.

9.3.2.5 Air Quality

See Section 9.1.2.5.

9.3.2.6 Waste and Contamination

See Section 9.1.2.6.

9.3.3 Cultural Environment

9.3.3.1 Archaeological Resources

See Section 9.1.3.1

9.3.3.2 Built Heritage and Cultural Resources

See Section 9.1.3.2.

9.4 Summary of Environmental Effects, Mitigation and Commitments to Future Work

Summary of environmental effects, mitigation and commitments to future work is presented in Table 9-6 for DDI, Table 9-7 for roundabout at the Glendale / York Road intersection and Table 9-8 for the new Airport Road connection from Glendale Avenue.

9.5 Future Consultation Commitments

The Project Team will continue to consult with agencies, interest groups, Indigenous Communities, property owners, and stakeholders regarding the proposed improvements during the Detail Design of these projects.
9.5.1 Agency Consultation

The Project Team will continue to consult with at a minimum those on the project mailing list which include: Fisheries and Oceans Canada (DFO), the Ministry of Natural Resources and Forestry (MNRF), Niagara Peninsula Conservation Authority (NPCA), the Ministry of the Environment, Conservation and Parks (MECP), Ministry of Tourism, Culture and Sport (MTCS), etc.

Follow-up work, including field investigations will be undertaken as required to identify site specific sensitivities and facilitate the development of mitigation measures / compensation plans, and to obtain any necessary permits and approvals.

9.5.2 Indigenous Community

Indigenous Community and Métis Nation of Ontario consultation is required of all MTO projects as defined by the Supreme Court of Canada and the Constitution Act. Indigenous Communities consulted in this Project will be consulted during Detail Design of these projects.

9.5.3 Public Consultation

For the MTO diverging diamond interchange, a Design and Construction Report will, as indicated in Section 2.3, be submitted to document Detail Design, for which public notices are published in local newspapers advising stakeholders of its availability for 45-day public review.

For the two Niagara Region projects, Detail Design will, as indicated in Section 2.4, be undertaken to complete Phase 4, and implementation of the project completes Phase 5 of the Municipal Class EA process.

There will be opportunities for consultation during the Detail Design of these projects. The level of consultation with the public will be defined at that time. Methods may include a mix of: newspaper advertisements, additional meetings with affected stakeholders, letters, notices delivered via Canada Post, etc.

If the MTO and Niagara Region projects continue to be coordinated through Detail Design and construction (for example, through a shared design-build contract, then coordinated consultation for their projects will also continue.
Table 9-6: MTO Bridge Replacement with Diverging Diamond Interchange at the QEW and Glendale Avenue – Summary of Effects, Mitigation, and Future Work

<table>
<thead>
<tr>
<th>ID #</th>
<th>Environmental Element/Concern and Potential Impact</th>
<th>Concerned Agencies</th>
<th>Mitigation/Protection/Monitoring/Commitments to Future Work</th>
</tr>
</thead>
</table>
| 1.   | Physiography and Soils                           | MTO/Region, MECP, CAs | • An erosion and sediment control plan will be implemented during construction of proposed works.  
• Measures to be incorporated may include but are not limited to: catch basin sediment traps, silt fences, rock check dams, erosion control blankets, etc. Erosion and sediment control structures will be designed, installed, maintained, and removed according to Ontario Provincial Standard Specifications (OPSS). |
| 2.   | Drainage and Hydrogeology                        | MTO/Region, MECP, CAs | • Minimize disturbance to existing vegetation and grassed slopes where re-grading is required (disturbed areas should be re-vegetated as quickly as possible after completion of construction activities);  
• Prepare and implement a spill prevention and control management plan as per the MTO’s best management practices;  
• Minimize runoff by following the MTO prescribed best management practices and Ontario Provincial Standard Specification (OPSS 804);  
• If constructions goes below the shallow groundwater table and dewatering is required during the future structure rehabilitation work:  
  - An evaluation of the need for an EASR or Category 3 PTTW shall be conducted based on the hydrogeological data collected from the geotechnical borehole investigations and design specifications;  
  - As per Ontario Regulation 387/04 (water taking regulation) and Ontario Regulation 63/16 (water taking registration regulation), the dewatering activities will be registered as “prescribed activities” on the EASR website, if the amount of water taking exceeds 50 m³/day and is below 400 m³/day. A Category 3 PTTW must be obtained from the MECP if the amount of water taken exceeds 400 m³/day;  
  - Dewatering activities should be conducted in accordance with the control procedures as specified in the Ontario Provincial Standard Specification (OPSS) 518 Construction Specification for Control of Water from Dewatering Operations; and  
  - A pre-construction door-to-door water well survey during Detail Design is recommended to confirm the presence or absence of existing water wells in the vicinity (within 500 m radius) of the future dewatering locations and document the baseline conditions (both quality and quantity) of these wells. A water well monitoring program should be developed and implemented during and after the dewatering activities, if deemed necessary. |
| 3.   | Fish and Fish Habitat                            | MTO/Region, MECP, CAs, MNRF | • The in-water work timing window (i.e., when in-water works cannot occur) for tributaries of the Six Mile Creek within the Study Area (as provided by MNRF, 2017) is from March 1st to June 30th for the spring timing restriction and September 1st to November 30th for the fall timing restriction.  
• Further Project details (e.g., confirmation of temporary and/or permanent footprint in or near water, the Project approach to construction, etc.) should be assessed during the next phase of the Project to complete the Fisheries Assessment process. Applicable project notification forms should be prepared and submitted during the next phase of the Project. |
| 4.   | Terrestrial Ecosystems                           | MTO/Region, MECP, CAs, MNRF | • To assist in mitigating potential impacts, the following MTO Provisions should be utilized, as a minimum:  
  - OPSS-804: Construction Specification for the Seed and Cover;  
  - OPSS-801: Construction Specification for the Protection of Trees;  
  - OPSS-180: General Specification for the Management of Excess Materials;  
  - Construction material should be stored within an authorized location and any soil stockpiles should be located within a suitable sediment fenced and protected location only;  
  - OPSS-182: General Specification for Environmental Protection for Construction in Waterbodies and on Waterbody Banks;  
  - Special Provision (SP) 1995S6: Control of Emissions During Structural Work;  
  - OC_EN_06: Operation Constraint – Control Measures during Removal of Concrete, Concrete, Repair / Construction, and Concrete Sawcutting;  
  - OC_EN-Cleaning of Equipment and Invasive Species Prevention. All machinery, construction equipment and vehicles should be washed prior to leaving the construction site in order to prevent the spread of invasive species to other locations;  
  - Non-Standard Special Provision (NSSP): Operational Constraint- Migratory Bird Protection;  
  - Schedule vegetation removal to occur outside of the breeding bird season of April 1st to August 31st to avoid disturbance to breeding birds and destroying active nests, including any bird SAR. If vegetation removal must occur within this time period, active nest searches may be conducted prior to vegetation removal by a qualified biologist within ‘simple habitats’ (e.g., manicured lawn with planted trees within the Study Area) or if minor vegetation clearing is required during this period, to ensure that no active nests of breeding birds or bird SAR are destroyed, in order to prevent any contravention of the MBCA and/or the ESA; |

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Mitigation/Protection/Monitoring/Commitments to Future Work

Vegetation removal, grading and soil compaction should be kept to a minimum;
If during Detail Design it is determined that removal of suitable maternity roost trees is required, the removal of these trees should be scheduled to occur outside of the bat roosting season between May 1st and September 1st. Additional mitigation measures and permitting requirements under the ESA shall be confirmed with the MNRNF during The next phase of the Project for removal of bat cavity trees;
Temporarily disturbed areas should be rehabilitated in accordance with OPSS-804: Construction Specification for the Seed and Cover; and
Any SAR observations should be reported to MNRNF and MTO and protection must be implemented immediately to ensure compliance with the ESA.

Socio-Economic Environment

5. Land Use

- Impacts to local, tourist and commercial traffic are expected to be low during construction with potential for minimal night-time closures as the new bridge and interchange are transitioned into full service. Construction staging plans will be developed during the Detail Design phase and potential impacts to local traffic will be identified at that time.
- Access to adjacent properties and businesses and to Niagara College will be maintained during construction of the new interchange.
- Any property requirements for the DDI, relative to lands owned by each of MTO and Niagara Region are being coordinated between MTO and Niagara Region.
- No private property impacts are anticipated. Property impacts will be confirmed during Detail Design.

6. Aesthetics / Landscape Composition

- A landscape plan will be developed during Detail Design.

7. Utilities

- All potentially affected utility companies have been contacted regarding the need to develop a utility relocation plan during Detail Design.
- All utility relocations will be completed before commencement of construction, but if some relocations are delayed, the construction Contractor will be required to coordinate the timing of each utility operation to ensure that they are carried out independently and do not conflict with construction operations.
- Special provisions will be included in the next phase of this Project to address this, and to make certain that care and precautions are taken to safeguard existing utilities from damage.

8. Construction Noise

- An exemption from the Town of Niagara-on-the-Lake noise control bylaw 4586-12 will be required to permit operation of construction equipment between the hours of 11:00pm and 9:00am of the next day.
- Equipment should comply with the sound emission standards for construction equipment outlined in MECP publications NPC-115 and NPC-118. Where feasible, equipment with broadband backup alarms instead of tonal backup alarms/beepers should be utilized.
- Equipment should be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-properly secured components, and the lubrication of moving parts.
- Idling of equipment should be restricted to the minimum time necessary to complete the specified work.

9. Air Quality

- The best manner to deal with these emissions during construction is through the implementation of operating procedures, such as application of dust suppressants, reduced travel speeds for heavy vehicles, efficient staging of activities and minimization of haul distances, covering stockpiles, etc.
- The contract package will include requirements for implementing best management practices for control of dust and other emissions.

10. Waste and Contamination

- Further environmental studies / investigations of high and medium properties directly impacted by improvements to the QEW / Glendale Avenue interchange would be recommended to confirm the environmental conditions of such lands in support of both property acquisition, environmental due diligence, interchange construction and management of surplus / excess soil / materials. If contamination is identified, mitigation measures may need to be developed and implemented which may include environmental site clean-up / remediation and/or risk assessment.
- Should concealed suspect ACM be identified during construction, the material must be sampled/analyzed or assumed to be ACM in accordance with O. Reg. 278/05.
- A qualified Contractor must control all DSS Site repair, maintenance, renovation and/or demolition activities on or at the Site to minimize worker exposure to silica and/or lead dust in accordance with O. Reg. 490/09. As required by O. Reg. 490/09, airborne silica concentrations must not exceed a time-weighted average (TWA) of 0.10 milligrams of silica per cubic metre for quartz/tripoli and a TWA of 0.05 milligrams of lead per cubic metre for elemental lead, inorganic and organic compounds of lead, respectively. Recycling of silica-based materials removed from any work areas should be conducted in accordance with O. Reg. 102/94 and O. Reg. 103/94 under the Ontario Environmental Protection Act. Demolition or any disturbance of any silica-containing DSS Site or bridge materials should be conducted following recommendations detailed within the MOL Silica guidelines, where specific legislation is not included under the OHSA.

Cultural Environment

11. Archaeological Resources

Due to the presence of deep and extensive disturbance (marked in solid red in Figure 4-3) are deemed to no longer contain archaeological potential. No further work is required in these areas.
Areas marked in green in Figure 4-3 should be further evaluated to determine the presence of archaeological potential.
### ID # Environmental Element/Concern and Potential Impact Concerned Agencies Mitigation/Protection/Monitoring/Commitments to Future Work

<table>
<thead>
<tr>
<th>ID #</th>
<th>Environmental Element/Concern and Potential Impact</th>
<th>Concerned Agencies</th>
<th>Mitigation/Protection/Monitoring/Commitments to Future Work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Environmental Element/Concern and Potential Impact</td>
<td>Concerned Agencies</td>
<td>Mitigation/Protection/Monitoring/Commitments to Future Work</td>
</tr>
<tr>
<td></td>
<td>Natural Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Physiography and Soils</td>
<td>MTO/Region, MECP, CAs</td>
<td>• An erosion and sediment control plan will be implemented during construction of proposed works.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Measures to be incorporated may include but are not limited to: catchbasin sediment traps, silt fences, rock check dams, erosion control blankets, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Erosion and sediment control structures will be designed, installed, maintained, and removed according to Ontario Provincial Standard Specifications (OPSS).</td>
</tr>
<tr>
<td>2.</td>
<td>Drainage and Hydrogeology</td>
<td>MTO/Region, MECP, CAs</td>
<td>• Minimize disturbance to existing vegetation and grassed slopes where re-grading is required (disturbed areas should be re-vegetated as quickly as possible after completion of construction activities);</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Prepare and implement a spill prevention and control management plan as per the MTO’s best management practices;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If constructions goes below the shallow groundwater table and dewatering is required during the future structure rehabilitation work:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- An evaluation of the need for an EASR or Category 3 PTTW shall be conducted based on the hydrogeological data collected from the geotechnical borehole investigations and design specifications;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- As per Ontario Regulation 387/04 (water taking regulation) and Ontario Regulation 63/16 (water taking registration regulation), the dewatering activities will be registered as “prescribed activities” on the EASR website, if the amount of water taking exceeds 50 m^3/day and is below 400 m^3/day. A Category 3 PTTW must be obtained from the MECP if the amount of water taken exceeds 400 m^3/day;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Dewatering activities should be conducted in accordance with the control procedures as specified in the Ontario Provincial Standard Specification (OPSS) 518 Construction Specification for Control of Water from Dewatering Operations; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- A pre-construction door-to-door water well survey during Detail Design is recommended to confirm the presence or absence of existing water wells in the vicinity (within 500 m radius) of the future dewatering locations and document the baseline conditions (both quality and quantity) of these wells. A water well monitoring program should be developed and implemented during and after the dewatering activities, if deemed necessary.</td>
</tr>
<tr>
<td>3.</td>
<td>Fish and Fish Habitat</td>
<td>MTO/Region, MECP, CAs, MNRF</td>
<td>• The in-water work timing window (i.e., when in-water works cannot occur) for tributaries of the Six Mile Creek within the Study Area (as provided by MNRF, 2017) is from March 1st to June 30th for the spring timing restriction and September 1st to November 30th for the fall timing restriction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Further Project details (e.g., confirmation of temporary and/or permanent footprint in or near water, the Project approach to construction, etc.) should be assessed during the next phase of the Project to complete the Fisheries Assessment process. Applicable project notification forms should be prepared and submitted during the next phase of the Project.</td>
</tr>
<tr>
<td>4.</td>
<td>Territorial Ecosystems</td>
<td>MTO/Region, MECP, CAs, MNRF</td>
<td>• To assist in mitigating potential impacts, the following MTO Provisions should be utilized, as a minimum:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- OPSS-804: Construction Specification for the Seed and Cover;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Should any areas be accidentally disturbed, the restoration of the disturbed areas will be required in accordance with OPSS-804: Construction Specification for the Seed and Cover;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- OPSS-801: Construction Specification for the Protection of Trees;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- OPSS-180: General Specification for the Management of Excess Materials;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Construction material should be stored within an authorized location and any soil stockpiles should be located within a suitable sediment fenced and protected location only;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- OPSS-182: General Specification for Environmental Protection for Construction in Waterbodies and on Waterbody Banks;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Special Provision (SP) 199S56: Control of Emissions During Structural Work;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- OC EN_06: Operation Constraint – Control Measures during Removal of Concrete, Concrete, Repair / Construction, and Concrete Sawcutting;</td>
</tr>
</tbody>
</table>

Table 9-7: Niagara Region’s Roundabout at Glendale Avenue / York Road Intersection – Summary of Effects, Mitigation, and Future Work
<table>
<thead>
<tr>
<th>ID #</th>
<th>Environmental Element/Concern and Potential Impact</th>
<th>Concerned Agencies</th>
<th>Mitigation/Protection/Monitoring/Commitments to Future Work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OC_EN - Cleaning of Equipment and Invasive Species Prevention. All machinery, construction equipment and vehicles should be washed prior to leaving the construction site in order to prevent the spread of invasive species to other locations;</td>
<td>MTO/Region, Residents, Businesses</td>
<td>- Short-term closures of the intersection are anticipated during the transition between operation of the existing signalized intersection and the new roundabout. Construction staging plans will be developed during Detail Design and potential impacts to local traffic will be identified at that time.</td>
</tr>
<tr>
<td></td>
<td>Non-Standard Special Provision (NSSP): Operational Constraint- Migratory Bird Protection; Schedule vegetation removal to occur outside of the breeding bird season of April 1st to August 31st to avoid disturbance to breeding birds and destroying active nests, including any bird SAR. If vegetation removal must occur within this time period, active nest searches may be conducted prior to vegetation removal by a qualified biologist within 'simple habitats' (e.g., manicured lawn with planted trees within the Study Area) or if minor vegetation clearing is required during this period, to ensure that no active nests of breeding birds or bird SAR are destroyed, in order to prevent any contravention of the MBCA and/or the ESA;</td>
<td>MTO/Region, Residents, Businesses</td>
<td>- All potentially affected utility companies have been contacted regarding the need to develop a utility relocation plan during Detail Design.</td>
</tr>
<tr>
<td></td>
<td>Vegetation removal, grading and soil compaction should be kept to a minimum; If during Detail Design it is determined that removal of suitable maternity roost trees is required, the removal of these trees should be scheduled to occur outside of the bat roosting season between May 1st and September 1st. Additional mitigation measures and permitting requirements under the ESA shall be confirmed with the MNRF during The next phase of the Project for removal of bat cavity trees;</td>
<td>MTO/Region, Utility Companies</td>
<td>- An exemption from the Town of Niagara-on-the-Lake noise control bylaw 4588-12 will be required to permit operation of construction equipment between the hours of 11:00pm and 9:00am of the next day</td>
</tr>
<tr>
<td></td>
<td>Temporarily disturbed areas should be rehabilitated in accordance with OPSS-804: Construction Specification for the Seed and Cover; and Any SAR observations should be reported to MNRF and MTO and protection must be implemented immediately to ensure compliance with the ESA.</td>
<td>MTO/Region, MECP, Residents, Businesses</td>
<td>- Equipment should comply with the sound emission standards for construction equipment outlined in MECP publications NPC-115 and NPC-118. Where feasible, equipment with broadband backup alarms instead of tonal backup alarms/beepers should be utilized</td>
</tr>
<tr>
<td></td>
<td>Aesthetics / Landscape Composition</td>
<td>MTO/Region, Residents, Businesses</td>
<td>- Equipment should 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.</td>
</tr>
<tr>
<td></td>
<td>Utilities</td>
<td>MTO/Region, Utility Companies</td>
<td>- Idling of equipment should be restricted to the minimum time necessary to complete the specified work.</td>
</tr>
<tr>
<td></td>
<td>Construction Noise</td>
<td>MTO/Region, MECP, Residents, Businesses</td>
<td>- The best manner to deal with these emissions during construction is through the implementation of operating procedures, such as application of dust suppressants, reduced travel speeds for heavy vehicles, efficient staging of activities and minimization of haul distances, covering stockpiles, etc.</td>
</tr>
<tr>
<td></td>
<td>Air Quality</td>
<td>MTO/Region, MECP, Residents</td>
<td>- The contract package will include requirements for implementing best management practices for control of dust and other emissions.</td>
</tr>
<tr>
<td></td>
<td>Waste and Contamination</td>
<td>MTO/Region, MECP</td>
<td>- Further environmental studies / investigations of high and medium properties directly impacted by improvements to the QEW / Glendale Avenue interchange would be recommended to confirm the environmental conditions of such lands in support of both property acquisition, environmental due diligence, interchange construction and management of surplus / excess soil / materials. If contamination is identified, mitigation measures may need to be developed and implemented which may include environmental site clean-up / remediation and/or risk assessment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Should concealed suspect ACM be identified during construction, the material must be sampled/analyzed or assumed to be ACM in accordance with O. Reg. 278/05.</td>
</tr>
</tbody>
</table>
|      | | | - A qualified Contractor must control all DSS Site repair, maintenance, renovation and/or demolition activities on at the Site to minimize worker exposure to silica and/or lead dust in accordance with O. Reg. 490/09. As required by O. Reg. 490/09, airborne silica concentrations must not exceed a time-weighted average (TWA) of 0.10 milligrams of silica per cubic metre for quartz/tripoli and a TWA of 0.05 milligrams of lead per cubic metre for elemental lead, inorganic and organic compounds of lead, respectively. Recycling of silica-based materials removed from any work areas should be conducted in accordance with O. Reg. 102/94 and O. Reg. 103/94 under the Ontario Environmental Protection Act. Demolition or any disturbance of any silica-
Table 9-8: Niagara Region’s New Airport Road Connection from Glendale Avenue – Summary of Effects, Mitigation, and Future Work

<table>
<thead>
<tr>
<th>ID #</th>
<th>Environmental Element/Concern and Potential Impact</th>
<th>Concerned Agencies</th>
<th>Mitigation/Protection/Monitoring/Commitments to Future Work</th>
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<tbody>
<tr>
<td></td>
<td>Environmental Element/Concern and Potential Impact</td>
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<tr>
<td></td>
<td>Natural Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Physiography and Soils</td>
<td>MTO/Region, MECP, CAs</td>
<td>• An erosion and sediment control plan will be implemented during construction of proposed works.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Measures to be incorporated may include but are not limited to: catchbasin sediment traps, silt fences, rock check dams, erosion control blankets, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Erosion and sediment control structures will be designed, installed, maintained, and removed according to Ontario Provincial Standard Specifications (OPSS).</td>
</tr>
<tr>
<td>2.</td>
<td>Drainage and Hydrogeology</td>
<td>MTO/Region, MECP, CAs</td>
<td>• Minimize disturbance to existing vegetation and grassed slopes where re-grading is required (disturbed areas should be re-vegetated as quickly as possible after completion of construction activities);</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Prepare and implement a spill prevention and control management plan as per the MTO’s best management practices;</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Minimize runoff by following the MTO prescribed best management practices and Ontario Provincial Standard Specification (OPSS 804);</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• If constructions goes below the shallow groundwater table and dewatering is required during the future structure rehabilitation work:</td>
</tr>
<tr>
<td></td>
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<td>- An evaluation of the need for an EASR or Category 3 PTTW shall be conducted based on the hydrogeological data collected from the geotechnical borehole investigations and design specifications;</td>
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<td></td>
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<td>- As per Ontario Regulation 387/04 (water taking regulation) and Ontario Regulation 63/16 (water taking registration regulation), the dewatering activities will be registered as “prescribed activities” on the EASR website, if the amount of water taking exceeds 50 m³/day and is below 400 m³/day. A Category 3 PTTW must be obtained from the MECP if the amount of water taken exceeds 400 m³/day;</td>
</tr>
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<td></td>
<td>- Dewatering activities should be conducted in accordance with the control procedures as specified in the Ontario Provincial Standard Specification (OPSS)-518 Construction Specification for Control of Water from Dewatering Operations; and</td>
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<td></td>
<td>- A pre-construction door-to-door water well survey during Detail Design is recommended to confirm the presence or absence of existing water wells in the vicinity (within 500 m radius) of the future dewatering locations and document the baseline conditions (both quality and quantity) of these wells. A water well monitoring program should be developed and implemented during and after the dewatering activities, if deemed necessary.</td>
</tr>
<tr>
<td>3.</td>
<td>Fish and Fish Habitat</td>
<td>MTO/Region, MECP, CAs, MNRF</td>
<td>• The in-water work timing window (i.e., when in-water works cannot occur) for tributaries of the Six Mile Creek within the Study Area (as provided by MNRF, 2017) is from March 1 to June 30 for the spring timing restriction and September 1 to November 30 for the fall timing restriction.</td>
</tr>
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<td></td>
<td></td>
<td>• Further Project details (e.g., confirmation of temporary and/or permanent footprint in or near water, the Project approach to construction, etc.) should be assessed during the next phase of the Project to complete the Fisheries Assessment process. Applicable project notification forms should be prepared and submitted during the next phase of the Project;</td>
</tr>
<tr>
<td>4.</td>
<td>Terrestrial Ecosystems</td>
<td>MTO/Region, MECP, CAs, MNRF</td>
<td>• To assist in mitigating potential impacts, the following MTO Provisions should be utilized, as a minimum:</td>
</tr>
<tr>
<td></td>
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<td>- OPSS-804: Construction Specification for the Seed and Cover;</td>
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<td></td>
<td>- Should any areas be accidentally disturbed, the restoration of the disturbed areas will be required in accordance with OPSS-804: Construction Specification for the Seed and Cover;</td>
</tr>
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<td></td>
<td>- OPSS-801: Construction Specification for the Protection of Trees;</td>
</tr>
</tbody>
</table>

Cultural Environment

11. Archaeological Resources MTO/Region, MTCS • Due to the presence of deep and extensive disturbance (marked in solid red in Figure 4-3) are deemed to no longer contain archaeological potential. No further work is required in these areas. • Areas marked in green in Figure 4-3 require Stage 2 test pitting at 5m intervals, as per Section 2.1.2 of the Test Pit Survey of the Standards and Guidelines for Consultant Archaeologists (2011), in order to identify any archaeological sites and to determine the extent and degree of ground disturbance. • All other areas have been previously assessed and are marked in red cross hatching and red oblique line (ASI 2015; New Directions 2015). These areas require no further archaeological assessment.

12. Built Heritage and Cultural Resources MTO/Region, MTCS • No built heritage resources or cultural heritage resources are located within the Study Area. As such, no mitigation measures are proposed.
### Environmental Element/Concern and Potential Impact

<table>
<thead>
<tr>
<th>ID</th>
<th>Environmental Element/Concern and Potential Impact</th>
<th>Concerned Agencies</th>
<th>Mitigation/Protection/Monitoring/Commitments to Future Work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Schedule vegetation removal to occur outside of the breeding bird season of April 1st to August 31st to avoid disturbance to breeding birds and destroying active nests, including any bird SAR. If vegetation removal must occur within this time period, active nest searches may be conducted prior to vegetation removal by a qualified biologist within ‘simple habitats’ (e.g., manicured lawn with planted trees within the Study Area) or if minor vegetation clearing is required during this period, to ensure that no active nests of breeding birds or bird SAR are destroyed, in order to prevent any contravention of the MBCA and/or the ESA;</td>
<td></td>
<td>- OC_EN- Cleaning of Equipment and Invasive Species Prevention. All machinery, construction equipment and vehicles should be washed prior to leaving the construction site in order to prevent the spread of invasive species to other locations;</td>
</tr>
<tr>
<td></td>
<td>- Temporarily disturbed areas should be rehabilitated in accordance with OPSS-604: Construction Specification for the Seed and Cover; and Any SAR observations should be reported to MNRF and MTO and protection must be implemented immediately to ensure compliance with the ESA.</td>
<td></td>
<td>- OPSS-180: General Specification for the Management of Excess Materials; Construction material should be stored within an authorized location and any soil stockpiles should be located within a suitable sediment fenced and protected location only;</td>
</tr>
<tr>
<td></td>
<td>- If during Detail Design it is determined that removal of suitable maternity roost trees is required, the removal of these trees should be scheduled to occur outside of the bat roosting season between May 1st and September 1st. Additional mitigation measures and permitting requirements under the ESA shall be confirmed with the MNRF during the next phase of the Project for removal of bat cavity trees;</td>
<td></td>
<td>- OC_EN_06: Operation Constraint – Control Measures during Removal of Concrete, Concrete, Repair / Construction, and Concrete Sawcutting;</td>
</tr>
<tr>
<td></td>
<td>- Temporarily disturbed areas should be rehabilitated in accordance with OPSS-604: Construction Specification for the Seed and Cover; and Any SAR observations should be reported to MNRF and MTO and protection must be implemented immediately to ensure compliance with the ESA.</td>
<td></td>
<td>- Special Provision (SP) 199S56: Control of Emissions During Structural Work;</td>
</tr>
<tr>
<td></td>
<td>- Further environmental studies / investigations of high and medium properties directly impacted by improvements to the QEW / Glendale Avenue interchange would be recommended to confirm the environmental conditions of such lands in support of both property acquisition, environmental due diligence, interchange construction and management of surplus / excess soil / materials. If contamination is identified, mitigation measures may need to be developed and implemented which may include environmental site clean-up / remediation and/or risk assessment.</td>
<td></td>
<td>- OC_EN_06: Operation Constraint – Control Measures during Removal of Concrete, Concrete, Repair / Construction, and Concrete Sawcutting;</td>
</tr>
<tr>
<td></td>
<td>- Should concealed suspect ACM be identified during construction, the material must be sampled/analyzed or assumed to be ACM in accordance with O.</td>
<td></td>
<td>- OC_EN- Cleaning of Equipment and Invasive Species Prevention. All machinery, construction equipment and vehicles should be washed prior to leaving the construction site in order to prevent the spread of invasive species to other locations;</td>
</tr>
</tbody>
</table>

### Socio-Economic Environment

5. **Land Use**

- MTO/Region, Residents, Businesses

  - The Airport Road connection is a new roadway, therefore there will be minimal impact to traffic as a result of construction other than the new south leg of the Airport Road / York Road intersection. Construction staging plans will be developed during Detail Design and potential impacts to local traffic will be identified at that time.

  - Any property requirements relative to lands owned by each of MTO and Niagara Region for the new Airport Road connection are being coordinated between MTO and Niagara Region. No private property impacts are anticipated. Property impacts will be confirmed during Detail Design.

6. **Aesthetics / Landscape Composition**

- MTO/Region, Residents, Businesses

  - A landscape plan will be developed during Detail Design.

7. **Utilities**

- MTO/Region, Utility Companies

  - All potentially affected utility companies have been contacted regarding the need to develop a utility relocation plan during Detail Design.

  - All utility relocations will be completed before commencement of construction, but if some relocations are delayed, the construction Contractor will be required to coordinate the timing of each utility operation to ensure that they are carried out independently and do not conflict with construction operations.

  - Special provisions will be included in the next phase of this Project to address this, and to make certain that care and precautions are taken to safeguard existing utilities from damage.

8. **Construction Noise**

- MTO/Region, MECP, Residents, Businesses

  - An exemption from the Town of Niagara-on-the-Lake noise control bylaw 4588-12 will be required to permit operation of construction equipment between the hours of 11:00pm and 9:00am of the next day.

  - Equipment should comply with the sound emission standards for construction equipment outlined in MECP publications NPC-115 and NPC-118. Where feasible, equipment with broadband backup alarms instead of tonal backup alarms/beepers should be utilized.

  - Equipment should be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-proprietary components, and the lubrication of moving parts.

  - Lifting of equipment should be restricted to the minimum time necessary to complete the specified work.

9. **Air Quality**

- MTO/Region, MECP, Residents

  - The best manner to deal with these emissions during construction is through the implementation of operating procedures, such as application of dust suppressants, reduced travel speeds for heavy vehicles, efficient staging of activities and minimization of haul distances, covering stockpiles, etc.

  - The contract package will include requirements for implementing best management practices for control of dust and other emissions.

10. **Waste and Contamination**

- MTO/Region, MECP

  - Further environmental studies / investigations of high and medium properties directly impacted by improvements to the QEW / Glendale Avenue interchange would be recommended to confirm the environmental conditions of such lands in support of both property acquisition, environmental due diligence, interchange construction and management of surplus / excess soil / materials. If contamination is identified, mitigation measures may need to be developed and implemented which may include environmental site clean-up / remediation and/or risk assessment.

  - Should concealed suspect ACM be identified during construction, the material must be sampled/analyzed or assumed to be ACM in accordance with O.
### Mitigation/Protection/Monitoring/Commitments to Future Work

- A qualified Contractor must control all DSS Site repair, maintenance, renovation and/or demolition activities on at the Site to minimize worker exposure to silica and/or lead dust in accordance with O. Reg. 490/09. As required by O. Reg. 490/09, airborne silica concentrations must not exceed a time-weighted average (TWA) of 0.10 milligrams of silica per cubic metre for quartz/tripoli and a TWA of 0.05 milligrams of lead per cubic metre for elemental lead, inorganic and organic compounds of lead, respectively. Recycling of silica-based materials removed from any work areas should be conducted in accordance with O. Reg. 102/94 and O. Reg. 103/94 under the *Ontario Environmental Protection Act*. Demolition or any disturbance of any silica-containing DSS Site or bridge materials should be conducted following recommendations detailed within the MOL Silica guidelines, where specific legislation is not included under the OHSAA.

### Cultural Environment

11. **Archaeological Resources**  
   MTO/Region, MTCS  
   - Due to the presence of deep and extensive disturbance (marked in solid red in Figure 4-3) are deemed to no longer contain archaeological potential. No further work is required in these areas.  
   - Areas marked in green in Figure 4-3 require Stage 2 test pitting at 5m intervals, as per Section 2.1.2 Test Pit Survey of the Standards and Guidelines for Consultant Archaeologists (2011), in order to identify any archaeological sites and to determine the extent and degree of ground disturbance.  
   - All other areas have been previously assessed and are marked in red cross hatching and red oblique lines (ASI 2015; New Directions 2015). These areas require no further archaeological assessment.

12. **Built Heritage and Cultural Resources**  
   MTO/Region, MTCS  
   - No built heritage resources or cultural heritage resources are located within the Study Area. As such, no mitigation measures are proposed.
10. Permits and Approvals

10.1 Provincial Permits and Approvals

10.1.1 Ministry of the Environment, Conservation and Parks (MECP)

10.1.1.1 Water Taking Permit

The project works may require groundwater dewatering activities to facilitate dry working conditions during construction. If dewatering is required during the future structure rehabilitation work (i.e., construction is anticipated to go below the groundwater table), the dewatering activities will have to be registered as “prescribed activities” on the Environmental Activity and Sector Registration (EASR) website if the amount of groundwater taken exceeds 50 m$^3$/day and is below 400 m$^3$/day. A Category 3 Permit to Take Water (PTTW) must be obtained from the MECP if the amount of groundwater taken exceeds 400 m$^3$/day during the dewatering activities.

10.1.1.2 O. Reg. 153/04 as Amended

It is anticipated that excess soils may be generated during construction, grading and excavation. These soils may need to be shipped off the site, either for reuse elsewhere or disposal. Soil will be managed in accordance with the MECP’s requirements such as Management of Excess Soil - A Guide for Best Management Practices; published April 5, 2016, updated: June 6, 2017. The MECP is also proposing additional guidance and legislation including the Ontario Regulation to be made under the Environmental Protection Act On-Site and Excess Soil Management (currently under 60 day comment period until June 15, 2018) and which will be incorporated in project planning as they are put into effect.

10.1.2 Ministry of Natural Resources and Forestry (MNRF)

Subsection 9(1) and 10(1) of the provincial Endangered Species Act, 2007, (ESA) protects wildlife species classified as extirpated, endangered or threatened on the Species at Risk List Ontario, as well as their habitats.

10.1.2.1 Bird Species at Risk

Barn Swallows occur in close association with human-made structures, building their cup-shaped mud nests almost exclusively on structures such as open barns, under bridges and in culverts (MNRF, 2018c). Structures within the Study Area provide suitable habitat and one possible Barn Swallow nest was observed near the culvert inlet under Glendale Avenue north of York Road on October 18, 2017; however, given the time of surveys, identity of the species could not be confirmed.

Additional field studies should be completed during the next phase of the Project to confirm presence of Barn Swallow nests on structures anticipated to be impacted by the Project. Should
Barn Swallow nesting activity be identified, and if project activities require removal of SAR habitat, a registration of construction activity with the MNRF via a Notice of Activity (NOA) in accordance with O. Reg. 242/08 under the ESA will likely be required.

10.1.2.2 Mammal Species at Risk

Bat SAR use wooded areas for summer or maternity roosting. Suitable habitat within the Study Area is represented by Mineral Cultural Woodland (CUW1) and Deciduous Forest (FOD) communities. Assessment of potential for bat habitat should be completed following the MNRF methods outlined within the MNRF’s Technical Note Species at Risk (2015e) and Bat and Bat Habitat Surveys of Treed Habitats (MNRF, 2016a).

10.2 Municipal Permits and Approvals

An exemption from the Town of Niagara-on-the-Lake noise control bylaw 4588-12 will be required to permit operation of construction equipment between the hours of 11:00pm and 9:00am of the next day.

In order to complete the necessary construction works under the recommended plan, the follow Municipal permits will be required:

- Permission To Enter (PTE) for the construction of the Airport Road Connection near the York Road and Airport Road intersection.
- Road Occupancy Permit for bridge works

10.3 MTO Permits and Approvals

In order to complete the necessary construction works under the recommended plan, the follow MTO permits will be required:

- MTO Encroachment Permit for relocation works.
11. Project Monitoring

During construction, MTO and Niagara Region will ensure that the key design, construction, and associated environmental protection/mitigation measures are implemented as outlined in this Transportation Environmental Study Report (TESR).

If the projects are constructed / implemented though the traditional Detail Design / tender / construct process, MTO and Niagara Region will:

- Ensure that the required information, in compliance with this TESR, is stipulated in the tender documents, and,
- Retain a construction contract administrator who will ensure that the construction contractor implements the key design, construction, and associated environmental protection/mitigation measures in compliance with those requirements.

For MTO projects that are constructed though the traditional Detail Design / tender / construct process, the construction contract administrator undertakes daily on-site inspection to ensure correct execution of the work, and to deal with problems that develop during construction. Construction administration staff use the inspection tasks outlined in the Construction Administration and Inspection Task (CAIT) Manual in conjunction with contract Special Provisions and Ontario Provincial Standard Specifications (OPSS) as a guide for the monitoring of all aspects of the work.

If the projects are constructed / implemented through the tendering of a design-build contract, MTO and Niagara Region will:

- Ensure that the tender documents require the design-build contractor to undertake Detail Design, construction/implementation, and associated environmental protection/mitigation in compliance with this TESR; and
- Require regular submission of reports that document ongoing compliance with the above.

For environmental protection and mitigation measures, the contract administrator or design-build contractor will ensure the following:

- Mitigating measures are providing the intended control and/or protection;
- The control and/or protection provided by mitigating measure is adequate;
- Additional mitigating measures are provided as required for any unanticipated environmental conditions which may develop during construction;
- Information is available regarding required mitigating measures; and
- Environmental monitoring, after a project is completed, may involve follow-up monitoring of significant measures and/or significant concerns.

If design and construction/implementation of the MTO and Niagara Region projects is tendered jointly, monitoring responsibility is shared. If design and construction/implementation of the MTO and Niagara Region projects is tendered separately, MTO and Niagara Region will each be responsible for monitoring of their own projects.
Contact

Joanne Wang
Senior Environmental Planner
T +1-905-747-1788
E joanne.wang@aecom.com

Fred Leech
Senior Environmental Planner
T +1-905-390-2030
E fred.leech@aecom.com
Appendix A

Notification
Additional public contacts were identified throughout the study. Due to the Freedom of Information and Protection of Privacy Act, these contacts have been omitted from the Transportation Environmental Study Report.
Notice of Study Commencement
Ontario
Government Notice
ONTARIO GOVERNMENT NOTICE
NOTICE OF STUDY COMMENCEMENT

Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue, G.W.P. 2423-15-00

THE STUDY
The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00). The Study is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study will develop a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

THE PROCESS
This Study will follow the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

Alternatives will be generated and evaluated based on technical and environmental factors and in consultation with Indigenous communities, public stakeholders, municipalities and government agencies. One Public Information Centre (PIC) will be held to provide interested parties with the opportunity to discuss the Study and provide input to the Project Team.

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study which will document:

- The need and justification for the Study;
- Existing environmental conditions;
- The generation, assessment and evaluation of alternatives;
- The preferred alternative;
- A summary of potential environmental issues and mitigation measures; and,
- A summary of consultation undertaken throughout the Study.

Notifications advising of the time and location of the PIC and of the availability of the TESR for review will be published in a local newspaper.

For additional study details, please visit the study website at http://QEW-Glendale-Interchange.ca

COMMENTS
To obtain additional information, provide initial comments, or to be placed on the mailing list for this Study, please contact the Project Team as follows:

Hossein Hosseini, P.Eng., M.Eng., PMP
MTO Project Manager
Ministry of Transportation
159 Sir William Hearst Avenue, 4th Floor
Toronto, ON M3M 0B7
Tel.: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

Jon Newman, P. Eng.
Consultant Project Manager
AECOM
300 Water Street
Whitby, ON L1N 9J2
Tel.: 905-668-4021 ext. 2228
Fax: 905-668-0221
E-mail: jon.newman@aecom.com

Comments are being collected to assist MTO in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the Study and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

If you have any accessibility requirements in order to participate in this Study, please contact one of the Project Team members listed above.
Indigenous Communities
December 7, 2017

Dear «Greeting»:

RE: Notice of Study Commencement
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue, G.W.P. 2423-15-00

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Alternatives will be generated and evaluated based on technical and environmental factors and in consultation with Indigenous communities, public stakeholders, municipalities and government agencies. One Public Information Centre (PIC) will be held to provide interested parties with the opportunity to discuss the Study and provide input to the Project Team.

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study which will document the need and justification for the Study; existing environmental conditions; the generation, assessment and evaluation of alternatives; the preferred alternative; a summary of potential environmental issues and mitigation measures; and, a summary of consultation undertaken throughout the Study.

Notifications advising of the time and location of the PIC and of the availability of the TESR for review will be published in a local newspaper and mailed to those on the study mailing list.

The purpose of this letter is to notify you of project start-up (refer to the enclosed “Notice of Study Commencement”) and inquire if your community has an interest in the Study. We would also ask
that you please confirm who will act as the main contact for your community. This individual's name will be added to our study mailing list, and as such, will be notified of key project milestones.

As part of the Study, a Stage 1 Archaeological Assessment will be undertaken. A Stage 1 Archaeological Assessment Report will be prepared to document the results of all background research and fieldwork, and will contain all necessary photographic and cartographic documentation, including recommendations for Stage 2 work, should it be required.

The Project Team will also be conducting a natural sciences review of the study area. Background information relating to natural heritage features will be collected and field investigations will be performed within the study area to characterize vegetation communities, fish and fish habitat, as well as wildlife and wildlife habitat. The sensitivity / significance of environmental features identified will be determined, and impact analysis will be performed to identify impact management measures. This work will be documented in various reports.

For additional study details, please visit the study website at http://QEW-Glendale-Interchange.ca

If you would like to provide comments, or if you require further information regarding this study, please feel free to contact the undersigned at 416-235-5513. In addition, if you are interested in meeting as a result of receiving this letter, please contact the undersigned to arrange a meeting at your earliest convenience.

Thank you for your cooperation and assistance.

Yours truly,

Ministry of Transportation

Hossein Hosseini, P.Eng., M.Eng., PMP
Project Manager
hossein.hosseini@ontario.ca

Cc. C. Barber - Ministry of Transportation, Environmental Planner
J. Newman - AECOM, Consultant Project Manager

Encl. Notice of Study Commencement
Agencies
December 7, 2017

Dear «Greeting»,

RE: Notice of Study Commencement
Preliminary Design and Class Environmental Assessment Study
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Notifications advising of the time and location of the PIC and of the availability of the TESR for review will be published in a local newspaper and mailed to those on the study mailing list.

The purpose of this letter is to notify your organization of the study commencement (refer to the enclosed “Notice of Study Commencement”). On the attached Contact Information Form, please indicate whether your organization has an interest in the Study and who will act as your organization’s contact. In order to assist us with our planning process, please also indicate if this Study will affect the delivery of your organization’s programs or services. A reply by Thursday January 4, 2018 would be appreciated.
For additional study details, please visit the study website at http://QEW-Glendale-Interchange.ca

If you would like to provide comments, or require further information regarding this study, please feel free to contact the undersigned.

Thank you for your cooperation and assistance.

Yours truly,
AECOM

Jon Newman, P. Eng.
Consultant Project Manager

Cc. H. Hosseini - Ministry of Transportation, Project Manager
C. Barber - Ministry of Transportation, Environmental Planner

Encl. Notice of Study Commencement
Contact Information Form
December 7, 2017

Dear «Greeting»:

RE: Notice of Study Commencement

Preliminary Design and Class Environmental Assessment Study

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If you would like to provide comments, or require further information regarding this study, please feel free to contact the undersigned.

Comments are being collected to assist MTO in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the Study and may be included in
Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

If you have any accessibility requirements in order to participate in this Study, please contact one of the Project Team members listed in the enclosed “Notice of Study Commencement”.

Thank you for your cooperation and assistance.

Yours truly,
AECOM

Jon Newman, P. Eng.
Consultant Project Manager

Cc. H. Hosseini - Ministry of Transportation, Project Manager
C. Barber - Ministry of Transportation, Environmental Planner

Encl. Notice of Study Commencement
Elected Officials
December 7, 2017

Dear [Greeting]:

RE: Notice of Study Commencement
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue, G.W.P. 2423-15-00

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Notifications advising of the time and location of the PIC and of the availability of the TESR for review will be published in a local newspaper and mailed to those on the study mailing list.
The purpose of this letter is to notify you of the study commencement. The enclosed “Notice of Study Commencement” will appear in the Niagara This Week newspaper on Thursday December 7, 2017.

For additional study details, please visit the study website at http://QEW-Glendale-Interchange.ca

If you would like to provide comments, or if you require further information regarding this study, please feel free to contact the undersigned at 416-235-5513.

Thank you for your cooperation and assistance.

Yours truly,
Ministry of Transportation

Hossein Hosseini, P.Eng., M.Eng., PMP
Project Manager
hossein.hosseini@ontario.ca

Cc. C. Barber - Ministry of Transportation, Environmental Planner
     J. Newman - AECOM, Consultant Project Manager

Encl. Notice of Study Commencement
Notice of Public Information Centre
Ontario
Government Notice
ONTARIO GOVERNMENT NOTICE
NOTICE OF PUBLIC INFORMATION CENTRE
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue, G.W.P. 2423-15-00

THE STUDY
The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00). The Study is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study is developing a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

THE PROCESS
This Study is following the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study. Its purpose is to document the need and justification for the Study; existing environmental conditions; the generation, assessment and evaluation of alternatives; the preferred alternative; and to summarize potential environmental issues, mitigation measures and consultation undertaken throughout the Study. A notice announcing the availability of the TESR for public review will be published in a local newspaper and sent to all contacts on the project mailing list. To be added to the project mailing list so you receive this future notice, please contact one of the Project Team members listed below.

PUBLIC INFORMATION CENTRE (PIC)
Interchange improvement alternatives have been generated and evaluated, and a preferred interchange improvement alternative selected based on technical and environmental factors.

A PIC is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. Members of the public, residents and stakeholders are invited to attend the PIC as follows:

Wednesday April 25, 2018
4:00 p.m. to 8:00 p.m.
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study. For additional study details or to be added to the project mailing list, please visit the study website at http://QEW-Glendale-Interchange.ca.

COMMENTS
To obtain additional information, provide comments, or to be placed on the mailing list for this Study, you are also welcome to contact the Project Team directly, as follows:

Hossein Hosseini, P.Eng., M.Eng., PMP
MTO Project Manager
Ministry of Transportation
159 Sir William Hearst Avenue, 4th Floor
Toronto, ON M3M 0B7
Tel.: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

Jon Newman, P. Eng.
Consultant Project Manager
AECOM
300 Water Street
Whitby, ON L1N 9J2
Tel.: 905-668-4021 ext. 2228
Fax: 905-668-0221
E-mail: jon.newman@aecom.com

Comments are being collected to assist MTO in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the Study and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

If you have any accessibility requirements in order to participate in this Study, please contact one of the Project Team members listed above.
Indigenous Communities
April 9, 2018

Dear «Greeting»:

RE: Notice of Public Information Centre
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue
G.W.P. 2423-15-00

The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange, which is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study is developing a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

This Study is following the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study. Its purpose is to document the need and justification for the Study; existing environmental conditions; the generation, assessment and evaluation of alternatives; the preferred alternative, and to summarize potential environmental issues, mitigation measures and consultation undertaken throughout the Study. A notice announcing the availability of the TESR for public review will be published in a local newspaper and sent to you via mail.

The purpose of this letter is to notify you that a Public Information Centre (PIC) has been scheduled (refer to the enclosed “Notice of Public Information Centre). This PIC is being held to introduce the Study, present the considered alternatives to
improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. **Your council and community members are invited to attend the following session:**

**Wednesday April 25, 2018**  
3:00 p.m. to 4:00 p.m.  
Hilton Garden Inn  
500 York Road, Niagara-on-the-Lake

The public has been invited to attend the PIC between 4:00 p.m. and 8:00 p.m. at the same venue. The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Enclosed is a copy of the PIC notice should you wish to post it for members of your community to view. If you would like to provide comments, or if you require further information regarding this Study, please feel free to contact the undersigned at 416-235-5513. Additional information about the Study can be found at [http://QEW-Glendale-Interchange.ca](http://QEW-Glendale-Interchange.ca). In addition, if you are interested in meeting as a result of receiving this letter, please contact the undersigned to arrange a meeting at your earliest convenience.

We look forward to hearing your views on this project.

Yours truly,

Ministry of Transportation

Hossein Hosseini, P.Eng., M.Eng., PMP  
Project Manager  
hossein.hosseini@ontario.ca

Cc. K. Coulter - Ministry of Transportation, Environmental Planner  
J. Newman - AECOM, Consultant Project Manager

Encl. Notice of Public Information Centre
Agencies
April 9, 2018

Dear «Greeting»:

RE: Notice of Public Information Centre
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue
G.W.P. 2423-15-00

The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange, which is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study is developing a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

This Study is following the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study. Its purpose is to document the need and justification for the Study; existing environmental conditions; the generation, assessment and evaluation of alternatives; the preferred alternative, and to summarize potential environmental issues, mitigation measures and consultation undertaken throughout the Study. A notice announcing the availability of the TESR for public review will be pushed in a local newspaper and sent to you via mail.

The purpose of this letter is to notify you that a Public Information Centre (PIC) has been scheduled (refer to the enclosed “Notice of Public Information Centre”). This PIC is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input.

Your organization is invited to attend the following session:
Wednesday April 25, 2018
3:00 p.m. to 4:00 p.m.
Hilton Garden Inn
500 York Road, Niagara-on-the-Lake

The public has been invited to attend the PIC between 4:00 p.m. and 8:00 p.m. at the same venue. The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

If you would like to provide comments, or require further information regarding this Study, please feel free to contact the undersigned or visit http://QEW-Glendale-Interchange.ca.

We look forward to hearing your views on this project.
Yours truly,
AECOM

Jon Newman, P. Eng.
Consultant Project Manager

Cc. H. Hoscaini - Ministry of Transportation, Project Manager
    K. Coulter - Ministry of Transportation, Environmental Planner

Encl. Notice of Public Information Centre
Public
April 9, 2018

Dear «Greeting»:

RE: Notice of Public Information Centre
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue
G.W.P. 2423-15-00

The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange, which is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study is developing a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

This Study is following the approved planning process for a Group 'B' project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

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The purpose of this letter is to notify you that a Public Information Centre (PIC) has been scheduled (refer to the enclosed “Notice of Public Information Centre”). This PIC is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input.

You are invited to attend the PIC as follows:
The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

If you would like to provide comments, or require further information regarding this Study, please feel free to contact the undersigned or visit http://QEW-Glendale-Interchange.ca.

Comments are being collected to assist MTO in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the Study and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

If you have any accessibility requirements in order to participate in this Study, please contact one of the Project Team members listed in the enclosed “Notice of Public Information Centre”.

We look forward to hearing your views on this project.

Yours truly,

AECOM

---

Jon Newman, P. Eng.
Consultant Project Manager

Cc. H. Hosseini - Ministry of Transportation, Project Manager
     K. Coulter - Ministry of Transportation, Environmental Planner

Encl. Notice of Public Information Centre
Local Businesses
April 9, 2018

Dear «Greeting»:

RE: Notice of Public Information Centre
Preliminary Design and Class Environmental Assessment Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue
G.W.P. 2423-15-00

The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange, which is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study is developing a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

This Study is following the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study. Its purpose is to document the need and justification for the Study; existing environmental conditions; the generation, assessment and evaluation of alternatives; the preferred alternative, and to summarize potential environmental issues, mitigation measures and consultation undertaken throughout the Study. A notice announcing the availability of the TESR for public review will be pushed in a local newspaper and sent to you via mail.

The purpose of this letter is to notify you that a Public Information Centre (PIC) has been scheduled (refer to the enclosed “Notice of Public Information Centre). This PIC is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. We are hosting a separate session dedicated to nearby businesses the day of the PIC to ensure that we can devote sufficient attention to your unique needs and perspective. Details for this local-business session are as follows:
The public has been invited to attend the PIC between 4:00 p.m. and 8:00 p.m. at the same venue. The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

If you would like to provide comments, or require further information regarding this Study, please feel free to contact the undersigned or visit http://QEW-Glendale-Interchange.ca.

Comments are being collected to assist MTO in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the Study and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

If you have any accessibility requirements in order to participate in this Study, please contact one of the Project Team members listed in the enclosed “Notice of Public Information Centre”.

We look forward to hearing your views on this project.

Yours truly,
AECOM

Jon Newman, P. Eng.
Consultant Project Manager

Cc. H. Hosseini - Ministry of Transportation, Project Manager
     K. Coulter - Ministry of Transportation, Environmental Planner

Encl. Notice of Public Information Centre
Notice of Study Completion and TESR Filing
Ontario
Government Notice
NOTICE OF STUDY COMPLETION AND TRANSPORTATION ENVIRONMENTAL STUDY
REPORT SUBMISSION

Preliminary / Concept Design and Class Environmental Assessment Study
Bridge Replacement Within New Diverging Diamond Interchange at the Queen Elizabeth Way and Glendale Avenue (G.W.P. 2423-15-00), Roundabout at the Glendale Avenue / York Road Intersection, and New Airport Road Connection from Glendale Avenue

THE STUDY
On behalf of the Ministry of Transportation (MTO) and Niagara Region, AECOM was retained to undertake a Preliminary / Concept Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00) and to the Glendale Avenue / York Road intersection. The Study is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study has developed a Preliminary / Concept Design to replace the Glendale Avenue Bridge over the QEW with a diverging diamond interchange to improve traffic operations at the interchange, and to provide for a roundabout at the Glendale Avenue / York Road intersection and new Airport Road connection from Glendale Avenue to improve traffic operations at the intersection.

THE PROCESS
This Study has followed the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000), as well as the planning process for a Schedule ‘C’ project under the Municipal Class Environmental Assessment (amended 2007, 2011 and 2015). A Transportation Environmental Study Report (TESR) has been prepared to document this work.

TESR FOR PUBLIC REVIEW
The TESR is available for a review period commencing August 16, 2018 and ending October 1, 2018 at the review locations identified below. Interested persons are encouraged to review the TESR and provide written comments to the MTO, Niagara Region and/or AECOM by October 1, 2018.

If you feel that significant outstanding issues have not been addressed through the Class EA process for this Study, and cannot be resolved through discussions with MTO or Niagara Region during the TESR review period, you may request the Minister of the Environment, Conservation and Parks (MECP) to make a Part II Order, or bump-up, that would require an Individual Environmental Assessment. The decision of whether a Part II Order is appropriate or necessary rests with the MECP Minister.

MECP provides Form 012-22-2206E, Part II Order Request, to give the Ministry the minimum information needed to commence a review of the request. This form, which requires the requestor to provide a statement of their participation in the study, their identifying information, and the details of their request, can be obtained at: http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&Srch=&ENV=WWE&TIT=2206&NO=012-2206E. MECP requests that the completed form and any supporting information be provided to the following, in addition to the Project Team contacts noted below:

<table>
<thead>
<tr>
<th>Minister</th>
<th>Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of the Environment, Conservation and Parks, 77 Wellesley St. W, 11th Floor</td>
<td>Environmental Assessment and Permissions Branch, Ministry of the Environment, Conservation and Parks</td>
</tr>
<tr>
<td>159 Sir William Hearst Avenue, 4th Floor</td>
<td>135 St. Clair Ave W, 1st Floor</td>
</tr>
<tr>
<td>Tel: 416-314-8452</td>
<td>Toronto ON M4V 1P5</td>
</tr>
<tr>
<td>Fax: 416-314-8452</td>
<td><a href="mailto:MOECCpermissions@ontario.ca">MOECCpermissions@ontario.ca</a></td>
</tr>
<tr>
<td><a href="mailto:Minister.MOECC@ontario.ca">Minister.MOECC@ontario.ca</a></td>
<td>135 Taylor Road, S.S. #4</td>
</tr>
<tr>
<td>Carolyn Ryall</td>
<td>Niagara-on-the-Lake, ON LOS 1J0</td>
</tr>
<tr>
<td>10 Anderson Lane, P.O. Box 430</td>
<td>Tel: 905-641-2252 ext. 4413</td>
</tr>
<tr>
<td>Tel: 905-468-0223</td>
<td></td>
</tr>
<tr>
<td>MTO Project Manager</td>
<td>Consultant Project Manager</td>
</tr>
<tr>
<td>Ministry of Transportation</td>
<td>AECOM</td>
</tr>
<tr>
<td>159 Sir William Hearst Avenue, 4th Floor</td>
<td>300 Water Street</td>
</tr>
<tr>
<td>Toronto, ON M3M 0B7</td>
<td>Whitby, ON L1N 8J2</td>
</tr>
<tr>
<td>Tel: 416-235-5513</td>
<td>Tel: 905-668-4021 ext. 2228</td>
</tr>
<tr>
<td>Fax: 416-235-3576</td>
<td>Toll Free: 1-800-668-1983</td>
</tr>
<tr>
<td><a href="mailto:hossein.hosseini@ontario.ca">hossein.hosseini@ontario.ca</a></td>
<td>Fax: 905-668-0221</td>
</tr>
<tr>
<td><a href="mailto:Carolyn.Ryall@niagararegion.ca">Carolyn.Ryall@niagararegion.ca</a></td>
<td><a href="mailto:jon.newman@aecom.com">jon.newman@aecom.com</a></td>
</tr>
</tbody>
</table>

If no Part II Orders are received or outstanding at the end of the review period, the projects are considered to have met the requirements of the Class EA, and MTO and Niagara Region may proceed to Detailed Design.

For additional study details or to view an electronic copy of the TESR, please visit the study website at http://QEW-Glendale-Interchange.ca

COMMENTS
To obtain additional information or to provide input, please contact the Project Team as follows:

Hossein Hosseini, P. Eng., P.M.P
MTO Project Manager
Ministry of Transportation
159 Sir William Hearst Avenue, 4th Floor
Toronto, ON M3M 0B7
Tel: 416-235-5513
Fax: 416-235-3576
hossein.hosseini@ontario.ca

Carolyn Ryall
Niagara Region Project Manager
Director
Transportation Services Division
Public Works, Niagara Region
1815 Sir Isaac Brock Way, PO Box 1042
Thorold, ON L2V 4T7
Tel: 905-980-6000 ext. 3620
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Carolyn.Ryall@niagararegion.ca

Jon Newman, P. Eng.
Consultant Project Manager
AECOM
300 Water Street
Whitby, ON L1N 8J2
Tel: 905-668-4021 ext. 2228
Toll Free: 1-800-668-1983
Fax: 905-668-0221
jon.newman@aecom.com

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. If you have any accessibility requirements in order to participate in this project, please contact one of the project team members listed above.
Indigenous Communities
August 13, 2018

Dear [Greeting]:

RE: Notice of Study Completion and Transportation Environmental Study Report Submission
Preliminary / Concept Design and Class Environmental Assessment Study
Bridge Replacement with New Diverging Diamond Interchange at the Queen Elizabeth Way and
Glendale Avenue (G.W.P. 2423-15-00), Roundabout at the Glendale Avenue / York Road Intersection,
and New Airport Road Connection from Glendale Avenue

On behalf of the Ministry of Transportation (MTO) and Niagara Region, AECOM was retained to
undertake a Preliminary / Concept Design and Class Environmental Assessment Study for improvements
to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00) and to the
Glendale Avenue / York Road intersection. The Study is located in the Town of Niagara-on-the-Lake,
Regional Municipality of Niagara.

This Study has developed a Preliminary / Concept Design to replace the Glendale Avenue Bridge over
the QEW and to reconstruct the existing interchange into a diverging diamond interchange to improve
traffic operations at the interchange. Also included in the Study are additional transportation
improvements by Niagara Region that provide for a roundabout at the Glendale Avenue / York Road
intersection and new Airport Road connection from Glendale Avenue to improve traffic operations at the
intersection.

This Study has followed the approved planning process for a Group ‘B’ project under the MTO Class
Environmental Assessment for Provincial Transportation Facilities (2000), as well as the planning process
for a Schedule ‘C’ project under the Municipal Class Environmental Assessment (amended 2007 and
2011). A Transportation Environmental Study Report (TESR) has been prepared to document this work.

The TESR is available for review commencing August 16, 2018, and ending October 1, 2018, at several
locations. See the enclosed “Notice of Study Completion and TESR Submission” for more information.
The TESR will also be available on the Project Website (http://QEW-Glendale-Interchange.ca) starting
August 16, 2018. Interested persons are encouraged to review the TESR and provide written comments
to the MTO, Niagara Region and/or AECOM by October 1, 2018.

If you feel that significant outstanding issues have not been addressed through the Class EA process for
this Study, and cannot be resolved through discussions with MTO or Niagara Region during the TESR
During the review period, you may request the Minister of the Environment, Conservation and Parks (MECP) make a Part II Order, or bump-up, that would require an Individual Environmental Assessment. The decision of whether a Part II Order is appropriate or necessary rests with the MECP Minister.

MECP provides Form 012-22-2206E, Part II Order Request, to give the Ministry the minimum information needed to commence a review of the request. This form, which requires the requestor to provide a statement of their participation in the Study, their identifying information, and the details of their request, can be obtained at: http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=&ENV=WWE&TIT=2206&NO=012-2206E. MECP requests that the completed form and any supporting information be provided, in addition to the Project Team contacts. See the enclosed "Notice of Study Completion and TESR Submission" for more information.

If no Part II Orders are received or outstanding at the end of the review period, the Study is considered to have met the requirements of the Class EA and MTO may proceed to Detailed Design.

As always, MTO would like to extend an invitation to meet with you to discuss this Study, and any concerns you might have. Please feel free to contact us at your convenience to set up a meeting prior to October 1, 2018, if there is anything you would like to discuss.

Thank you for your cooperation and assistance.

Yours truly,
Ministry of Transportation

Hossein Hosseini, P.Eng.
Project Manager
hossein.hosseini@ontario.ca

Cc. K. Coulter - Ministry of Transportation, Environmental Planner
     J. Newman - AECOM, Consultant Project Manager

Encl. Notice of Study Completion and TESR Submission
August 13, 2018

Dear «Greeting»:

RE: Notice of Study Completion and Transportation Environmental Study Report Submission
Preliminary / Concept Design and Class Environmental Assessment Study
Bridge Replacement with New Diverging Diamond Interchange at the Queen Elizabeth Way and Glendale Avenue (G.W.P. 2423-15-00), Roundabout at the Glendale Avenue / York Road Intersection, and New Airport Road Connection from Glendale Avenue

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This Study has developed a Preliminary / Concept Design to replace the Glendale Avenue Bridge over the QEW and to reconstruct the existing interchange into a diverging diamond interchange to improve traffic operations at the interchange. Also included in the Study are additional transportation improvements by Niagara Region that provide for a roundabout at the Glendale Avenue / York Road intersection and new Airport Road connection from Glendale Avenue to improve traffic operations at the intersection.

This Study has followed the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000), as well as the planning process for a Schedule ‘C’ project under the Municipal Class Environmental Assessment (amended 2007 and 2011). A Transportation Environmental Study Report (TESR) has been prepared to document this work.

The TESR is available for review commencing August 16, 2018, and ending October 1, 2018, at several locations. See the enclosed “Notice of Study Completion and TESR Submission” for more information. The TESR will also be available on the Project Website (http://QEW-Glendale-Interchange.ca) starting August 16, 2018. Interested persons are encouraged to review the TESR and provide written comments to the MTO, Niagara Region and/or AECOM by October 1, 2018.

If you feel that significant outstanding issues have not been addressed through the Class EA process for this Study, and cannot be resolved through discussions with MTO or Niagara Region during the TESR review period, you may request the Minister of the Environment, Conservation and Parks (MECP) make a Part II Order, or bump-up, that would require an Individual Environmental Assessment. The decision of whether a Part II Order is appropriate or necessary rests with the MECP Minister.
MECP provides Form 012-22-2206E, Part II Order Request, to give the Ministry the minimum information needed to commence a review of the request. This form, which requires the requestor to provide a statement of their participation in the Study, their identifying information, and the details of their request, can be obtained at: http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=&ENV=WWE&TIT=2206&NO=012-2206E. MECP requests that the completed form and any supporting information be provided, in addition to the Project Team contacts. See the enclosed “Notice of Study Completion and TESR Submission” for more information.

If no Part II Orders are received or outstanding at the end of the review period, the Study is considered to have met the requirements of the Class EA and MTO may proceed to Detailed Design.

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

Thank you for your cooperation and assistance.

Yours truly,

AECOM

Jon Newman, P. Eng.
Consultant Project Manager

Cc. H. Hosseini - Ministry of Transportation, Project Manager
     K. Coulter - Ministry of Transportation, Environmental Planner

Encl. Notice of Study Completion and TESR Submission
Elected Officials
August 13, 2018

Dear «Greeting»:

RE: Notice of Study Completion and Transportation Environmental Study Report Submission
Preliminary / Concept Design and Class Environmental Assessment Study
Bridge Replacement with New Diverging Diamond Interchange at the Queen Elizabeth Way and Glendale Avenue (G.W.P. 2423-15-00), Roundabout at the Glendale Avenue / York Road Intersection, and New Airport Road Connection from Glendale Avenue

On behalf of the Ministry of Transportation (MTO) and Niagara Region, AECOM was retained to undertake a Preliminary / Concept Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00) and to the Glendale Avenue / York Road intersection. The Study is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study has developed a Preliminary / Concept Design to replace the Glendale Avenue Bridge over the QEW and to reconstruct the existing interchange into a diverging diamond interchange to improve traffic operations at the interchange. Also included in the Study are additional transportation improvements by Niagara Region that provide for a roundabout at the Glendale Avenue / York Road intersection and new Airport Road connection from Glendale Avenue to improve traffic operations at the intersection.

This Study has followed the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000), as well as the planning process for a Schedule ‘C’ project under the Municipal Class Environmental Assessment (amended 2007 and 2011). A Transportation Environmental Study Report (TESR) has been prepared to document this work.

The TESR is available for review commencing August 16, 2018, and ending October 1, 2018, at several locations. See the enclosed “Notice of Study Completion and TESR Submission” for more information. The TESR will also be available on the Project Website (http://QEW-Glendale-Interchange.ca) starting August 16, 2018. Interested persons are encouraged to review the TESR and provide written comments to the MTO, Niagara Region and/or AECOM by October 1, 2018.

The enclosed “Notice of Study Completion and TESR Submission” will appear in the Niagara This Week newspaper on Thursday August 16, 2018.
If you feel that significant outstanding issues have not been addressed through the Class EA process for this Study, and cannot be resolved through discussions with MTO or Niagara Region during the TESR review period, you may request the Minister of the Environment, Conservation and Parks (MECP) to make a Part II Order, or bump-up, that would require an Individual Environmental Assessment. The decision of whether a Part II Order is appropriate or necessary rests with the MECP Minister.

MECP provides Form 012-22-2206E, Part II Order Request, to give the Ministry the minimum information needed to commence a review of the request. This form, which requires the requestor to provide a statement of their participation in the Study, their identifying information, and the details of their request, can be obtained at:

http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=&ENV=WWE&TIT=2206&NO=012-2206E. MECP requests that the completed form and any supporting information be provided, in addition to the Project Team contacts. See the enclosed “Notice of Study Completion and TESR Submission” for more information.

If no Part II Orders are received or outstanding at the end of the review period, the Study is considered to have met the requirements of the Class EA and MTO may proceed to Detailed Design.

If you would like to provide comments, or if you require further information regarding this Study, please feel free to contact the undersigned at 416-235-5513.

Thank you for your cooperation and assistance.

Yours truly,
Ministry of Transportation

Hossein Hosseini, P.Eng.
Project Manager
hossein.hosseini@ontario.ca

Cc. K. Coulter - Ministry of Transportation, Environmental Planner
J. Newman - AECOM, Consultant Project Manager

Encl. Notice of Study Completion and TESR Submission
TESR Review Locations
August 13, 2018

Dear «Greeting»:

RE: Notice of Study Completion and Transportation Environmental Study Report Submission
Preliminary / Concept Design and Class Environmental Assessment Study
Bridge Replacement with New Diverging Diamond Interchange at the Queen Elizabeth Way and
Glendale Avenue (G.W.P. 2423-15-00), Roundabout at the Glendale Avenue / York Road Intersection,
and New Airport Road Connection from Glendale Avenue

On behalf of the Ministry of Transportation (MTO) and Niagara Region, AECOM was retained to
undertake a Preliminary / Concept Design and Class Environmental Assessment Study for improvements
to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00) and to the
Glendale Avenue / York Road intersection. The Study is located in the Town of Niagara-on-the-Lake,
Regional Municipality of Niagara.

This Study has developed a Preliminary / Concept Design to replace the Glendale Avenue Bridge over
the QEW and to reconstruct the existing interchange into a diverging diamond interchange to improve
traffic operations at the interchange. Also included in the Study are additional transportation
improvements by Niagara Region that provide for a roundabout at the Glendale Avenue / York Road
intersection and new Airport Road connection from Glendale Avenue to improve traffic operations at the
intersection.

This Study has followed the approved planning process for a Group ‘B’ project under the MTO Class
Environmental Assessment for Provincial Transportation Facilities (2000), as well as the planning process
for a Schedule ‘C’ project under the Municipal Class Environmental Assessment (amended 2007 and
2011). A Transportation Environmental Study Report (TESR) has been prepared to document this work.

The TESR is available for review commencing August 16, 2018, and ending October 1, 2018, at several
locations. Your office has been identified as a public review location for the TESR (refer to the enclosed
“Notice of Study Completion and Transportation Environmental Study Report Submission”). Please have
the report along with the enclosed notice available for the public to review during this time.

Thank you for your cooperation and assistance.

Yours truly,

AECOM
Jon Newman, P. Eng.
Consultant Project Manager

Cc.          H. Hosseini - Ministry of Transportation, Project Manager
             K. Coulter - Ministry of Transportation, Environmental Planner

Encl.    Notice of Study Completion and TESR Submission
Appendix B

Public Information Centre Materials
Welcome to the Public Information Centre for the

Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue

Class Environmental Assessment and Preliminary Design Study
G.W.P. 2423-15-00
http://QEW-Glendale-Interchange.ca

April 25, 2018

Please Sign In Here

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members.
The purpose of this Public Information Centre (PIC) is to present and receive feedback on:

- Study Area, Purpose and Scope
- Class EA Process for Group 'B' Projects
- Overview of Traffic / Interchange Issues
- Overview of Existing Land Use and Environmental Conditions
- Identification of Interchange Improvement Alternatives
- Diverging Diamond Interchange (DDI) Schematic, Motorist & Pedestrian Example
- DDI Base Case and Benefits
- DDI Plus Potential Roundabout at Glendale / York Intersection
- DDI Plus Potential Airport Connection Road
- Evaluation of DDI Alternatives, and Selection of the Preferred Alternative
- Next Steps
- Project Schedule

Your input on each of these and other study issues is important to us!
The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00).

The Study is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study is developing a preliminary design for:

- Replacement of the Glendale Avenue Bridge over the QEW
- Improvements to interchange operational, geometric, and safety features
- A relocated Ontario Travel Information Centre and new commuter parking lot
- Partnership with the Region and the Town for potential enhancements to address operational deficiencies at the Glendale Avenue / York Road intersection
This Study is following the approved planning process for a Group ‘B’ project under the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000).

One Public Information Centre (PIC) is being held for the Study to provide interested parties with the opportunity to discuss it and provide input to the Project Team.

A Transportation Environmental Study Report (TESR) will be prepared and made available for public review at the completion of the Study.
Overview of Traffic / Interchange Issues

• Traffic queues within the interchange and adjacent municipal road intersections are a concern as documented in the following graphic. These include:
  - Queuing on QEW Niagara Bound exit ramps to Glendale Avenue (north and south)
  - Left turn queue on Glendale Avenue to QEW Toronto Bound
  - Left turn queue on Glendale Avenue to York Road (westbound)
  - Queuing on Glendale Avenue due to congestion at commercial development during peak periods.

• Over the 5-year period between 2011 and 2015, there were 218 collisions recorded within the Study Area:
  - The 5-year average collision rate within the Study Area was below the provincial average collision rate.
QEW Interchange Improvements at Glendale Avenue

Overview of Traffic / Interchange Issues

- Relocation of OTIC to QEW / Glendale Ave. Interchange
- Glendale Ave. Underpass - End of service life
- Traffic congestion within commercial development during peak causing queueing on Taylor Rd. / Glendale Ave. to the Interchange ramp terminal
- Illegal U-turns to NB Glendale Ave. Weaving issue to WB left turn
- Glendale Ave. / York Rd. Intersection - Queueing at intersection to the Interchange during peak
- Glendale northbound to QEW Toronto bound - Queueing
- Weaving on QEW between Glendale Ave. and Highway 405
- Ramp terminal queues - QEW / Niagara bound off-ramp queues due to traffic backup on Glendale Ave. north and southbound

MTO Issues
Regional Issues
QEW Interchange Improvements at Glendale Avenue

Overview of Existing Land Use and Environmental Conditions

- This interchange is a key highway access point to the Niagara-on-the-Lake tourist area, community of Virgil, Niagara District Airport, and eastern St. Catharines.

- Significant retail, hospitality, food and fuel services and college land uses abut the interchange, such as:
  - Outlet Collection at Niagara Mall
  - White Oaks Resort & Spa; Garden Hilton Inn; Staybridge Suites; Holiday Inn Express
  - Tim Hortons; Wendy’s, Mr. Sub, Esso
  - Niagara College

- Forested areas in the NE and SE interchange quadrants, and abutting Homer Escarpment Life Area of Natural and Scientific Interest

- Several nearby watercourses

Source: Town of Niagara on the Lake Official Plan, July 17, 2017
### QEW Interchange Improvements at Glendale Avenue

#### Alternatives: Key Considerations

| Evaluation Factors and Criteria | Alternative A  
Modified Parclo A4 |
|----------------------------------|-------------------|
| **Highways Criteria**            | Highest number of interchange ramps  
Requires speed change lanes on structure  
Most property required  
Most complex construction staging |
| **Traffic Criteria**             | Safety: highest number of conflict points  
Interchange ramp terminal operates at a very good level of service  
Cyclists and pedestrians well-accommodated |
| **Environmental Criteria**       | Highest impact to forested areas  
Limited opportunity for NOTL gateway |
| **Cost Criteria**                | Highest cost |
### Alternatives: Key Considerations

#### Evaluation Factors and Criteria

| Highways Criteria                      | Alternative B  
<table>
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<tr>
<td>• Moderate number of interchange ramps, but requires no speed change lanes on structure</td>
<td>Modified Parclo A3 with Roundabouts</td>
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<tr>
<td>• Moderate property required</td>
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<tr>
<td>• Moderately complex construction staging</td>
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<table>
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<td>• Interchange ramp terminal operates at a very good level of service</td>
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<tr>
<td>• Most challenging for cyclists and pedestrians</td>
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<td>• Moderate impact to forested areas</td>
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<tr>
<td>• Limited opportunity for NOTL gateway</td>
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<th>Cost Criteria</th>
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<td>• Moderate cost</td>
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## QEW Interchange Improvements at Glendale Avenue

### Alternatives: Key Considerations

| Evaluation Factors and Criteria | Alternative C  
Diverging Diamond Interchange  
PREFERRED ALTERNATIVE |
|---------------------------------|---------------------------------|
| **Highways Criteria**           | • Lowest number of ramps  
• Requires no speed change lanes on structure  
• Least property required  
• Least complex construction staging |
| **Traffic Criteria**            | • Safety: lowest number of vehicle conflict points  
• Interchange ramp terminal operates at best level of service  
• Cyclists and pedestrians well-accommodated |
| **Environmental Criteria**      | • Lowest impact to forested areas  
• Good opportunity for NOTL gateway |
| **Cost Criteria**               | • Lowest Cost |

---

*Images of roads and intersections are shown.*
The recommended interchange configuration is a Diverging Diamond Interchange (DDI), an innovative design that addresses a number of the operational concerns at this location.

- **Interchange Concerns Addressed:**
  - Eliminates left-turn queueing and conflict points for Glendale S-QEW Toronto bound movements.
  - Improves interchange ramp operations.
  - Provides excellent opportunity for gateway to Niagara-on-the-Lake.
  - Maintains good spacing for QEW traffic between and the Glendale Avenue and Highway 405 interchanges.
  - Has fewer impacts to road users during construction.

- **Cyclists and Pedestrians Better Accommodated:**
  - Accommodates safe passage of cyclist and pedestrian traffic through the interchange, consistent with Region's Transportation Master Plan.

- **Site for Ontario Tourism Information Centre (OTIC) and Carpool Lot Provided:**
  - Accommodates the relocation of the OTIC on the direct route to Niagara-on-the-Lake.

- **Minimal Property Impacts to Nearby Land Uses:**
  - Negligible footprint impact to nearby business and services.

- **Forest Areas Protected:**
  - Minimal intrusion into nearby forests and natural areas.
QEW Interchange Improvements at Glendale Avenue

Diverging Diamond Interchange – Motorist and Pedestrian Example

How to drive a Diverging Diamond Interchange (DDI)

Pedestrians:
Access a central pedestrian island in the middle of the bridge. The walkway is protected with concrete barriers.

Motorists:
Proceed through the first traffic signal, and simply follow their lane to the opposite side of the roadway. Drivers accessing Highway 15 will turn left at the ramps without stopping or waiting for traffic to pass. Through traffic proceeds to a traffic signal and follows their lane back to the right side of the roadway.

Source – Washington DOT
Diverging Diamond Interchange – Conceptual Schematic – How it Works

- The number of conflict points is reduced relative to conventional diamond interchanges.
The recommended interchange configuration is a Diverging Diamond Interchange (DDI), an innovative design that addresses a number of the operational concerns at this location.

In addition, in partnership with the Region of Niagara and the Town of Niagara-on-the-Lake, two potential enhancements are being considered to address operational issues at the Glendale Avenue / York Road intersection.

As a result the following three alternatives are being considered:

- Alternative C1: DDI – MTO interchange improvement (base case)
- Alternative C2: DDI by MTO plus Regional enhancement that provides a Roundabout at the Glendale Avenue / York Road intersection
- Alternative C3: DDI by MTO plus Regional enhancement that provides an Airport Road Connection

These alternatives are presented on the following slides.
Alternative C1: Diverging Diamond Interchange – MTO Base Case

- Alignment of Glendale Avenue through the interchange is shifted slightly to the east
- Bridge has four Glendale Avenue through lanes with a wide separate median
- Traffic on the bridge drives on the opposite side of the road between the ramp terminals, reducing conflict points and allowing for unrestricted turning movements
- Interchange consists of four directional ramps, and a direct connection to Airport Road via a loop ramp from Glendale Avenue northbound
- Traffic signals required
- Combined carpool lot and Ontario Travel Information Centre in the northwest quadrant
QEW Interchange Improvements at Glendale Avenue

Alternative C2: DDI Plus Regional Roundabout Enhancement at Glendale Avenue / York Road Intersection

- DDI is enhanced by replacing the Glendale Avenue / York Road intersection with a two-lane roundabout
- Traffic performance at the Glendale Avenue / York Road intersection improves
QEW Interchange Improvements at Glendale Avenue

Alternative C3: DDI Plus
Regional Airport Road Connection Enhancement

- DDI is enhanced by the addition of a new Airport Road connection via a loop ramp from Glendale Avenue northbound under Glendale Avenue to a new roadway connection to the Airport Road / York Road intersection
- Traffic performance at the Glendale Avenue / York Road intersection improves
- Provides enhanced gateway opportunities to Niagara-on-the-Lake via the Airport Road connection
QEW Interchange Improvements at Glendale Avenue

Alternatives Comparison

• Alternative C1: DDI – MTO interchange improvement (base case).
  ➢ Addresses the key considerations within the interchange (interchange operations, cyclists and pedestrians, site for OTIC and carpool lot, minimal property impacts to nearby land uses, and forested areas protected).

• Alternative C2: DDI by MTO plus Regional enhancement that provides a Roundabout at the Glendale Avenue / York Road intersection.
  ➢ In addition to Alternative C1, this alternative improves the traffic operations at the existing Glendale Avenue / York Road intersection through infrastructure improvements.

• Alternative C3: DDI by MTO plus Regional enhancement that provides an Airport Road Connection.
  ➢ In addition to Alternative C1, Traffic performance at the Glendale Avenue / York Road intersection improves through additional route to Airport Rd.
The three diverging diamond interchange alternatives will be subjected to further evaluation based on the following categories:

- Highways
- Traffic
- Structural
- Environmental
- Cost

This evaluation will be documented in a Transportation Environmental Study Report (TESR) which will be made available for public review at the completion of the Study.

Please fill out a comment form with your contact information to be added to the Project’s mailing list and receive notification once the TESR is available for review.
Following this PIC:

- MTO, Region and Town staff will work together to:
  - Consider comments received at this PIC.
  - Consider potential revisions and enhancements to the conceptual design for:
    - The MTO base case DDI interchange Alternative C1
    - Potential Region / Town enhancement Alternatives C2 and C3
    - Other potential Region / Town enhancements
  - Select the preferred DDI Alternative.
  - Determine how best to coordinate MTO, Region and Town responsibilities for design, EA process and funding.
  - Complete design and develop mitigation measures to minimize or avoid environmental impacts.
- MTO will prepare a Transportation Environmental Study Report for public and agency review.
## Project Schedule

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<th>TASKS</th>
<th>2017</th>
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<td>OCT NOV DEC</td>
<td>JAN FEB MAR APR MAY JUNE JULY AUG SEPT</td>
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<td>Data Collection, Field Reviews &amp; Review of Existing Conditions</td>
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<td>Generate &amp; Assess Alternatives</td>
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<td>Public Information Centre</td>
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<td>Evaluate Alternatives &amp; Select Technically Preferred Alternative</td>
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<td>Preliminary Design of Technically Preferred Alternative</td>
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<td>Finalize Preliminary Design and Mitigation Measures</td>
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<td>Transportation Environmental Study Report (TESR) Development</td>
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<td>Final TESR Submission</td>
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Schedule subject to change based on study findings and/or input received through consultation.
Thank you for attending.

Please feel free to ask questions and fill out a comment sheet. Please submit your comments by May 25, 2018.

For additional study details or to be added to the project mailing list, please visit the study website at http://QEW-Glendale-Interchange.ca.

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members.
Comments and information regarding this study are being collected to assist the Ministry of Transportation in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in project documentation.

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

You are encouraged to contact members of the Project Team if you have any questions or concerns regarding the above information.
Appendix C

Correspondence
Indigenous Communities Correspondence
Please find the attached letters regarding projects within the Mississaugas of the New Credit First Nation’s (MNCFN) treaty territory.

Thank you for your assistance,

Joelle Williams  
Archaeological/Environmental Assistant  
Mississaugas of the New Credit First Nation  
Department of Consultation & Accommodation  
4065 Highway 6 North, Hagersville, ON N0A 1H0  
P: 905-768-4260 | M: 905-870-2918  

Email: doca@mncfn.ca  
http://www.mncfn.ca

****This e-mail and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the intended recipient, you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited. Please note that any views or opinions presented in this e-mail are solely those of the author and do not necessarily represent those of the Mississaugas of the New Credit First Nation.****
March 6th, 2018

Dear Mr. Kearsley,

I am writing on behalf of the Department of Consultation and Accommodation [DOCA], requesting information on a project within the Mississaugas of the New Credit First Nation’s [MNCFN] treaty territory.

MNCFN are an Aboriginal people within the meaning of section 35 of the Constitution Act, 29182. We have signed numerous treaties with the Crown, reaffirming our rights as the original owners of the lands in our territory and establishing Treaty rights over the same. Furthermore, we have un-surrendered Aboriginal title to the waters, beds of water, and foreshore within our territory. Our constitutionally protected rights give rise to specific legal obligations and duties which supersede policies and guidelines.

We are an Indigenous community as understood by the United Nations and our rights include those referenced in the United Nations Declaration on the Rights of Indigenous Peoples ("UNDRIP"). Article 11 of UNDRIP states that Indigenous peoples have "the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts..." In May, 2016, the Federal Government committed to adopting and implementing UNDRIP; therefore, the rights of Indigenous peoples outlined in it deserve renewed consideration and respect.

These lands have been the territory and home of MNCFN and our ancestors for many generations. As such, there is significant potential for archaeological and other cultural resources of our people to be located during the archaeological fieldwork required for projects or development. Such resources are of critical importance to MNCFN given the increasing urbanization and development of our territory that effectively whitewashes our past. Without our active participation and monitoring during archaeological fieldwork, our history stands to be lost forever. As the original stewards of these lands – and continuing owners of the waters – we have ongoing obligations to ensure the protection of our cultural and natural resources for future generations. This is our responsibility and our right.
DOCA has been notified that in February 2018, project information files were submitted for the following Stage 1 archaeological assessments:

1. Ministry of Transportation Stage 1 Archaeological Assessment Detail Design and Class Environmental Assessment Study, Rehabilitation of 5 Bridges and 3 Culvert Brant’s Block, Nelson Township, Halton County G.W.P 2031-17-00 G.W.P 2117-15-00

2. Ministry of Transportation Ontario Stage 1 Archaeological Assessment Southeast Portion of the Queen Elizabeth Way and Glendale Avenue Intersection, Part of Lots 2 Concession 9, Lot 2 Concession 10 and Lot 1 Concession 10 in the Town of Niagara on the Lake, Regional Municipality of Niagara, Ontario

Please provide the draft reports when available for our review.

We would like to speak directly with the proponent, whose development may have impacts on MNCFN’s treaty and aboriginal rights and who may have not properly consulted with our Nation on this project. We would greatly appreciate if you can provide the contact information so that we may communicate these responsibilities. Until a reasonable understanding has been reached between MNCFN and the proponent regarding the project and our participation to ensure that the fieldwork is conducted in a respectful manner that protects our rights, we are of the opinion that any duty to consult over the project has not been met and all subsequent approvals relating to the project are subject to challenge on this basis.

Finally, we would like to take this opportunity to remind you that DOCA requires that our Field Liaison Representatives participate in all archaeological fieldwork within MNCFN treaty territory, including Stages 2 through 4. Please feel free to convey this expectation to your clients as well. It is my hope that in light of the above considerations and with a renewed focus on reconciliation, we can navigate through these issues towards a relationship of respect, partnership, and mutual benefit, and in the future the participation of our FLRs will not be overlooked.

I ask that the information requested above be directed to the attention of my Archaeological Coordinator, Megan DeVries, at meagen.deVries@mnecn.ca. Please provide the requested information by 4pm on March 21st, 2018, or we must conclude that you are unwilling or unable to assist us.

Thank you.

Mark LaForme, Director

Department of Consultation and Accommodation
Mississaugas of the New Credit First Nation
6 First Line Road, Unit 1, R.R. #6, Hagersville, ON N0A 1H0

Tel: 905-768-4260
Municipal Correspondence
Hello Joanne,

Shirley Cater is no longer with the Town. Please add me as the Planning contact on this Study.

Thank you in advance,

Craig Larmour, BA, MCIP, RPP
Director of Community & Development Services
Town of Niagara-on-the-Lake
1593 Four Mile Creek Road
P.O. Box 100, Virgil, Ontario L0S 1T0
905-468-3061 ext. 243 Fax: 905-468-0301
Website: www.notl.org Facebook: @Town.of.NOTL
Twitter: @Town.of.NOTL & @NOTLfiredept

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-----Original Message-----
From: SCater@notl.org [mailto:SCater@notl.org]
Sent: Wednesday, April 04, 2018 10:58 AM
To: Wang, Joanne <joanne.wang@aecom.com>
Subject: AUTO: Shirley Cater

Shirley Cater is no longer associated with the Town of Niagara-on-the-Lake.

Your email has been forwarded to the appropriate Department and will be replied to accordingly. If this matter is urgent, please call the Community and Development Services Department at Town Hall 905-468-3266 and ask for Planning.

Note: This is an automated response to your message "G.W.P. 2423-15-00, Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue, Preliminary Design and Class Environmental Assessment Study" sent on 04/04/2018 10:54:02 AM.

This is the only notification you will receive while this person is away.

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Dear Malcolm,

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

Hi Hossein,

Could you please add me to the circulation list for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue EA?

Thanks,

Malcolm Mackay
Senior Planning Officer | GO Planning
Metrolinx | 97 Front Street West | Toronto | ON | M5J 1E6
Tel: 416.202.5988 | E-mail: Malcolm.Mackay@metrolinx.com

This e-mail is intended only for the person or entity to which it is addressed. If you received this in error, please contact the sender and delete all copies of the e-mail together with any attachments.
Hi Jon,

Please see the attached contact Information Form.

Also, it would be appreciated if AECOM could update your organization's EA contact list according to the geographic information on the Ministry’s webpage/map at http://www.omafra.gov.on.ca/english/landuse/staff.htm. Our Ministry often gets EA information sent to the wrong Rural Planner and this delays our initial responses, as was the case for this EA.

Thanks,

Jackie

Jackie Van de Valk, P.Ag., Rural Planner
Land Use Policy and Stewardship
Ontario Ministry of Agriculture, Food and Rural Affairs
10 – 6484 Wellington Road 7, Elora, ON N0B 1S0 • Tel: 519.846.3415

-----Original Message-----
From: ONP2F00871236@ontario.ca [mailto:ONP2F00871236@ontario.ca]
Sent: January 9, 2018 3:50 PM
To: Van de Valk, Jackie (OMAFRA)
Subject: Scanned from a Xerox Multifunction Device

Please open the attached document. It was scanned and sent to you using a Xerox Multifunction Device.

Attachment File Type: pdf, Multi-Page

Multifunction Device Location:
Device Name: ONP2F00871236
Preliminary Design and Class EA Study
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue
G.W.P. 2423-15-00

Contact Information Form

1.) Does your organization wish to participate in the Study and continue to receive notices of study activities and information as the Study progresses?
   Yes [ ] No [ ]

2.) If your organization wishes to participate in the Study, please specify who will act as the Project Team’s contact.
   NAME: Jackie Vande Valk
   TITLE: Rural Planner
   DEPARTMENT: Land Use Policy & Stewardship
   ORGANIZATION: OMAFRA
   MAILING ADDRESS: 16-6484 Wellington Rd. 7
   Elora, ON N0B 1S0
   PHONE NUMBER: 519-846-3405
   FAX: 
   E-MAIL ADDRESS: jackie.vande Valk@ontario.ca

3.) Please indicate if this Study will affect the delivery of your organization’s programs or services, and/or any other relevant information in this regard.

   potential for impacts to agriculture - loss of prime agricultural land, including specialty crop land, and impacts to agricultural operations

Submitted By: Jackie Vande Valk

Your information and comments will be kept on file for use during the study. Please submit this form by Thursday January 4, 2018 to:

Jon Newman, P. Eng.
Consultant Project Manager
AECOM
300 Water Street
Whitby, ON L1N 9J2
Tel.: 905-668-4021 ext. 2228
Fax: 905-668-0221
Email: jon.newman@aecom.com
With regards,

Barb Slattery, EA/Planning Coordinator
*Ministry of the Environment and Climate Change*
West Central Region
(905) 521-7864
January 8, 2018

Mr. Jon Newman
AECOM

- Via email only –

Dear Mr. Newman:

Re: QEW and Glendale Avenue Interchange Improvements
Preliminary Design and Class EA Study
Notice of Study Commencement
Your File G.W.P. 2423-15-00

Thank you for your letter dated December 7, 2017 wherein you have indicated that MTO will be undertaking a preliminary design and class environmental assessment study focused on the Glendale Avenue Interchange. Bridge and operational improvements including the possible relocation of the Ontario Travel Information Centre will be addressed. You have also advised that the EA will be undertaken as a Group “B” project in accordance with the requirements of the Class Environmental Assessment for Provincial Transportation Facilities (2000).

Thank you for bringing this project to our attention. During the course of the EA process, I am your MOECC contact. All documentation (ie. Notices of upcoming PICs, final TESR) should be filed with the ministry and provided to my attention. If you have any questions about the requirements of the environmental assessment process or of any environmental issues that may arise during the course of the study, please contact me at (905) 521-7864 or at Barbara.slattery@ontario.ca

Sincerely,

Barbara Slattery, EA/Planning Coordinator
West Central Region

cc. Ms. K. Groombridge, MOECC – Niagara District Office (FYI)
Hi Joanne

This is a copy of what I sent Jon back in December. As you will see Sue Harrison should’ve added to your contact list for the Travel Centres.

Thanks Jackie

Jackie Phillip
Manager, Ontario Travel Information Centres

DESTINATION ONTARIO
5355 Stanley Avenue | Niagara Falls, Ontario | L2E 7C2
W: 905.358.2920 | C: 905.321.2404 | F: 905.358.6441
E: jackie.phillip@ontario.ca

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Hi Jon,

I received your notice along with the contact information form you need completed. The form is attached.

Please be sure to add both myself and my Director Sue Harrison to all future correspondence on this study going forward. We will be the main contacts.

Much appreciated

Jackie Phillip

Jackie Phillip
Manager
Ontario Travel Information Centres
Ontario Tourism Marketing Partnership Corporation
5355 Stanley Avenue | Niagara Falls, Ontario | L2E 7C2
W: 905.358.2920 | C: 905.321.2404 | F: 905.358.6441
E: jackie.phillip@ontario.ca

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This E-mail was sent from "ONM3F02172126" (MP C401).

Scan Date: 12.12.2017 14:53:38 (-0500)
Queries to: ONM3F02172126@ontario.ca
Preliminary Design and Class EA Study  
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue  
G.W.P. 2423-15-00  

Contact Information Form  

1.) Does your organization wish to participate in the Study and continue to receive notices of study activities and information as the Study progresses?  
   Yes [ ]  No [X]  

2.) If your organization wishes to participate in the Study, please specify who will act as the Project Team’s contact.  
   NAME: Jackie Phillip  
   TITLE: Manager, Ontario Travel Information Centres  
   DEPARTMENT: MTCS / OTMPC / OTICS  
   ORGANIZATION: MTCS  
   MAILING ADDRESS: 5355 Stanley Ave  
                     Niagara Falls, ON L2E 7C2  
   PHONE NUMBER: 905 358 2920  
   FAX: 905 358 6441  
   E-MAIL ADDRESS: jackie.phillip@ontario.ca  

3.) Please indicate if this Study will affect the delivery of your organization’s programs or services, and/or any other relevant information in this regard.  
   From our understanding this Study will affect our Travel Centre deliverables. We will need to be kept up to date at all times in order to plan well in advance. Any proposed road closures, traffic pattern alternation will severely impact our business  

Submitted By: Jackie Phillip  

Your information and comments will be kept on file for use during the study. Please submit this form by Thursday January 4, 2018 to:  
Jon Newman, P. Eng.  
Consultant Project Manager  
AECOM  
300 Water Street  
Whitby, ON L1N 9J2  
Tel.: 905-668-4021 ext. 2228  
Fax: 905-668-0221  
Email: jon.newman@aecom.com  

Pls. include:  
Sue Harrison  
Director, Ont Travel Information Centres  
OTMPC / MTCS  
10 Dundas Street East  
Toronto, ON M5B 269  
Sue.Harrison@ontario.ca  

P- 416 325 6659  
F- 416 314 7563
Hi Joanne,

I am taking over this file from Rosi Zirger, who had been the main contact for MTCS Culture Division. You can also remove Chris Schiller and Neal Ferris from your email list.

Jackie and Sue – as background, MTCS Culture Division has reviewed earlier work on this EA project from a cultural heritage perspective (i.e. archaeology and potential built heritage resources).

After March 19, my schedule is fairly open.

Thanks,
Laura

Laura Hatcher, MCIP, RPP
Heritage Planner
Heritage Program | Programs and Services Branch | Ministry of Tourism, Culture and Sport
401 Bay Street Suite 1700 Toronto ON M7A 0A7
Tel. 416.314.3108 | email: laura.e.hatcher@ontario.ca

Hi Joanne

My Director Sue Harrison should be at this meeting. I’ve checked her schedule along with mine and we are available after March 19th.
Where would the meeting take place?
Can you provide us with some dates and times and we’ll go from there. I’ve included Sue on this email, please add her to all future correspondence.

Thanks very much
Jackie Phillip

Jackie Phillip
Manager, Ontario Travel Information Centres

DESTINATION ONTARIO
5355 Stanley Avenue | Niagara Falls, Ontario | L2E 7C2
W: 905.358.2920 | C: 905.321.2404 | F: 905.358.6441
E: jackie.phillip@ontario.ca

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Hi everyone,

The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Preliminary Design and Class Environmental Assessment Study for improvements to the Queen Elizabeth Way (QEW) / Glendale Avenue interchange (G.W.P. 2423-15-00). The Study is located in the Town of Niagara-on-the-Lake, Regional Municipality of Niagara.

This Study will develop a preliminary design to replace the Glendale Avenue Bridge over the QEW and to improve operational, geometric, and safety features of the interchange. The preliminary design may also include relocation of the Ontario Travel Information Centre and establishment of a commuter parking lot.

In preparation of the upcoming Public Information Centre, the Project Team would like to meet with MTCS. Please advise your availability after February 27, 2018 and early March.

Thank you.

Regards,
Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788  C:1-647-523-9816
joanne.wang@aecom.com

AECOM
4th Floor, 30 Leek Crescent, Richmond Hill, Ontario, L4B 4N4
T 1-905-882-4401  F 1-905-882-4399
www.aecom.com

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Please consider the environment before printing this e-mail.
Hi Hossein,

Thanks for the information below.

I think it best if we have a conference call early next week to discuss our approach and situational analysis so that we can best determine how to move forward. Can you let me know who you would like on the call?

Let me know if Wednesday at 9:30 am works for your team.

Thanks, enjoy the weekend.

Sue

Hi Sue,

Thank you for your comments.

I assume land availability is not the only criteria for MTCS when it comes to a new OTIC location and some sort of research study have been conducted by your ministry to see what other locations in Niagara could better attract visitors, if the current OTIC is under performing. During the PIC, we did receive positive comments from the public regarding the proposed location as it brings the location to a more direct route to a major tourist destination, being the Town of Niagara on the Lake, but I assume MTCS has other criteria to consider. As far as know, there were no representation from MTCS at the PIC to engage in the discussions.

Having said that, it would be best if you could please advise which other areas you have in mind so we can focus on specific areas rather than looking at the entire Niagara area. I assume there are areas in Niagara that MTCS is NOT interested in and knowing the specific areas of interest would definitely help our land search exercise.

Based on your preferred areas, I’ll ask our Property Office to advise if there are any feasible options. We will advise you in a timely manner as we need to know if the OTIC is to remain part of this project as we finalize the EA process. I would like to bring to your attention that, in addition to the risks outlined in my previous email, MTCS may also wish to consider that MTO may not be able to legitimately pursue a stand-alone OTIC under the Class EA for Provincial Transportation Facilities.

Please advise at your earliest.

Regards,

Hossein

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5613
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca
Hi Hossein,

Thanks for your thoughtful and informative response.

Our key priority for the travel centres is to always ensure high visibility and accessibility. Therefore the general area/region and not just the specific location is extremely important to us.

Over the last number of years, the St. Catharines centre has not performed as well as other centres (low visitation) and we believe the current highway corridor location is a contributing factor to the relative underperformance of that centre.

Whether the centre is rebuilt as part of the Glendale project or in another potential location is something that we would like to explore further with MTO. We understand that your responsibility is with the Glendale project and would like to open up the dialogue with MTO about other potential lands and location options. Is there someone we can consult with at MTO to explore the possibilities outside of the Glendale project?

We also recognize that there are risks involved in exploring outside of the Glendale project (timing of build and vacating the current property) but we want to ensure that we are using tax payers dollars effectively to achieve the best results and so would like to take a measured, thoughtful approach.

As you can appreciate this is a significant decision for our agency and one that cannot be made any time soon, especially given the upcoming political event in June. However, if we could start by broadening the discussions, (understanding that it would be a separate exercise outside of the Glendale project) that would be appreciated.

I look forward to hearing from you.

 Regards,
Sue

---

From: Hosseini, Hossein (MTO)
Sent: April-17-18 2:10 PM
To: Harrison, Sue (MTO)
Cc: Ronaldi, Vincenza (MTCS); Phillip, Jackie (MTCS); Newman, Jon; Sheikh, Riyaz; Wang, Joanne; Leech, Fred; Coulter, Kevin (MTO)

Hi Sue,

Thank you for your email.

I would like to have your specific comments about the proposed location before we look at other possibilities. Based on your email below, it is not quite clear to me if the proposed location at the northwest quadrant of Glendale interchange is not quite satisfactory, or you have other locations elsewhere, other than Glendale interchange, in mind. Please clarify.

As you are aware, the existing OTIC requires relocation because of the conflict with the upcoming Garden City Skyway twin structure project. The Garden City Skyway EA does not make any specific commitment to the future OTIC location; however, the Glendale interchange is noted as a likely possibility. Based on the initial discussions with MTCS in Fall 2017 prior to start of Glendale project, we were under impression that Glendale interchange is also preferred by the MTCS, subject to logistical details to be worked out. Given the existing nearby OTIC on Stanley Avenue in Niagara Falls and Town of Niagara-On-The-Lake being the next tourist destination in Niagara, it made sense to place the new location at a gateway location with improved access to the town.

As mentioned earlier, I’d like to have your specific comments on the proposed Glendale Avenue location to see if they can be addressed within this project. Although there are limited supply of disposable lands around the provincial highway network in Niagara, I think MTO would be open to looking at other potential locations in Niagara if we are unable to accommodate your concerns at Glendale. In this case, however, it would be a separate exercise that won’t fit into the overall Glendale project study area, scope and schedule, and there’s no guarantee that such a suitable location can be found. There are also some risks associated with this as further investigations to find other potential suitable locations would need to be included as part of future MTO planning projects in Niagara. Depending on specific geographic area you may have in mind, a stand-alone project issued specifically for the relocation exercise may also be required.

In the event that the OTIC is not included within the Glendale Interchange project, it is likely that a new location will not be identified, designed, constructed and made operational in time prior to the Garden City Skyway project construction (which could start as early as 2021), and the OTIC could be facing operational interruptions for an uncertain period of time. In addition, any future planning exercise for an alternate location elsewhere would require a stand-alone environmental assessment, consultation and technical analysis, where this can now be efficiently achieved under the overall environmental assessment efforts for the Glendale project.

I look forward to your comments and will be happy to discuss further if you have any questions or comments.

Regards,
Hi Hossein,

I wanted to follow up after our meeting a few weeks back with yourself and the consultants. Thank you to your team for the thoughtful presentation and information regarding the upcoming Glendale construction project.

We are in the process of reviewing our current program needs and the evolving needs of our visitors.

At this point Destination Ontario and MTCS need to explore all options available before any design and spec discussions for a new building can take place.

The location you proposed is not 100% satisfactory for Destination Ontario. Therefore we wanted to know if MTO owns any other land in the Niagara Region that might be available to build on?

As mentioned we want to ensure we have explored all options including a different location, if available.

If you could get back to us at your earliest convenience it would be appreciated.

Thanks, and if you have any questions please let me know.

Sue

Sue Harrison
Director, Ontario Travel Information Centres

DESTINATION ONTARIO
10 Dundas Street East, Suite 900 | Toronto, Ontario | M7A 2A1
W: 416.325.6656 | F: 416.514.7563
E: sue.harrison@ontario.ca

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Dear [Name],

Thank you for taking the time to visit the project website and submit your comments.

The Project Team is the process of generating and evaluating interchange improvement alternatives based on technical and environmental factors and in consultation with Indigenous communities, public stakeholders, municipalities and government agencies. The generation, assessment and evaluation of alternatives will be presented at a Public Information Centre.

You have been added to the project contact list and will be notified of future project consultation activities (i.e. the Public Information Centre).

Regards,
Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788     C:1-647-523-9816
joanne.wang@aecom.com

AECOM
4th Floor, 30 Leek Crescent, Richmond Hill, Ontario, L4B 4N4 T 1-905-882-4401 F 1-905-882-4399 www.aecom.com

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-----Original Message-----
From: [Name] <[Email]>
Sent: Wednesday, December 20, 2017 3:55 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [Name]
Address: [Address]
City: [City]
Province: [Province]
Postal Code: [Postal Code]
Email: [Email]

Message:
Is an independent ramp off the QEW to the outlet mall under consideration?

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
Dear [Name],

Thank you for taking the time to visit the project website and submit your comments.

The closure of the interchange at the QEW and Glendale Avenue is not being considered as an improvement. The Project Team is the process of generating and evaluating interchange improvement alternatives based on technical and environmental factors and in consultation with Indigenous communities, public stakeholders, municipalities and government agencies. The generation, assessment and evaluation of alternatives will be presented at a Public Information Centre.

You have been added to the project contact list and will be notified of future project consultation activities (i.e. the Public Information Centre).

Regards,
Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788     C:1-647-523-9816
joanne.wang@aecom.com

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Please consider the environment before printing this e-mail.

Name: [Redacted]
Address: [Redacted]
City: [Redacted]
Province: [Redacted]
Postal Code: [Redacted]
Email: [Redacted]

Message: This intersection is the only viable means for Niagara on the Lake residents to access the QEW. Other routes involve bridge crossing (with possible long delays while the bridge is up) or very long detours. Any "improvements" should not involve closure of this access.

Notices: Email

This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
Dear [Name],

Thank you for taking the time to visit the project website and submit your contact information.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,

Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788     C: 1-647-523-9816
joanne.wang@aecom.com

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Please consider the environment before printing this e-mail.
Dear [Name],

Thank you for taking the time to visit the project website and submit your contact information. You have been added to the project contact list and will be notified of future project consultation activities.

Regards,
Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting

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T 1-905-882-4401 F 1-905-882-4399
www.aecom.com

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Please consider the environment before printing this e-mail.

-----Original Message-----
From: Wang, Joanne
Sent: Friday, December 15, 2017 9:21 AM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [Redacted]
Address: [Redacted]
City: [Redacted]
Province: [Redacted]
Postal Code: [Redacted]
Email: [Redacted]

Message:
Request to be added to the project contact list.
Thank you.

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
Dear [Name],

Thank you for taking the time to visit the project website and submit your contact information. You have been added to the project contact list and will be notified of future project consultation activities.

Regards,
Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788     C:1-647-523-9816
joanne.wang@aecom.com

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-----Original Message-----
From: Wang, Joanne
Sent: Tuesday, January 02, 2018 2:09 PM
To: [Redacted]
Cc: Leech, Fred <Fred.Leech@aecom.com>
Subject: RE: QEW Glendale Interchange Contact Form

Dear [Name],

Thank you for taking the time to visit the project website and submit your contact information.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,
Joanne

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788     C:1-647-523-9816
joanne.wang@aecom.com

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-----Original Message-----
From: [Redacted]
Sent: Wednesday, December 13, 2017 1:32 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [Redacted]
Address: [Redacted]
City: [Redacted]
Province: [Redacted]
Postal Code: [Redacted]
Email: [Redacted]

Message:

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
Dear [Name],

Thank you for taking the time to provide your comments.

The Project Team is in the process of generating and evaluating interchange improvement alternatives based on technical and environmental factors and in consultation with Indigenous communities, public stakeholders, municipalities and government agencies. We have noted your comments regarding signage and traffic on York Road through St. Davids. The generation, assessment and evaluation of alternatives will be presented at a Public Information Centre.

You have been added to the project contact list and will be notified of future project consultation activities (i.e. the Public Information Centre).

If you have further comments on this project, please do not hesitate to contact me. Thank you again for your interest in this project.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

-----Original Message-----
From: [Name]
Sent: December 22, 2017 8:22 AM
To: Hosseini, Hossein (MTO)
Subject: Glendale bridge

Please add me to the mailing list.
My initial comments are:
The need for adequate signage on the Qew giving alternate exits info.
Signage for traffic Leaving NOTL. To efficiently routing back to Qew.
Accommodating the extra traffic on York Road through St. Davids.

Thank you
Dear [Name],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca
Hello!

I received a notice in the mail in regards to the a study commencement in the Glendale area of Niagara-on-the-Lake. I would like to be put on your mailing list as we live in that area.

Thanks so much!
Dear [Name],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downtown, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

Interchange Improvements at QEW & Glendale Ave.

G.W.P. 2423-15-00

Please place me on the mailing list for the Study.
Dear [Name],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca
Dear Sirs,

We live in the and are concerned with access to St. Catharines during the re-construction of the interchange. We access St. Catharines and/or the QEW daily. The current condition of York Road is very poor between Highway 55 and Glendale. It is the most direct route for us to the east side of St. Catharines. This route will be especially necessary during construction and needs to be widened and improved before the onset of construction. We are hoping that you will consider improving that access before undertaking destruction of the current interchange at QEW.

This comment may be more appropriately directed to the Niagara-on-the-Lake planning and road maintenance departments, however, we are also concerned with the York Road access to that interchange from the St Davids area. With the recent construction of hundreds of homes in St. Davids, the York Road access is critical. While we require the speed limit to remain at 80, the road in winter can be treacherous given the current grading/construction. Construction of the shoulders, and maintenance such as ploughing and de-icing in winter is of utmost importance to safety. It is the most efficient and direct access to the QEW. To access QEW and St. Catharines by Mountain Road or 405, on a permanent basis, is a lengthy and inefficient detour for the residents of St. Davids.

Please forward my comments to your town of Niagara-on-the-Lake contact in the planning department.

Thank you,
Hi

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,
Joanne Wang (on behalf of the Project Team)

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788    C:1-647-523-9816
joanne.wang@aecom.com

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www.aecom.com

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-----Original Message-----
From: [redacted]
Sent: Wednesday, March 07, 2018 11:11 AM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [redacted]
Address: [redacted]
City: [redacted]
Province: [redacted]
Postal Code: [redacted]
Email: [redacted]

Message: Please add my list to all communications with respect to this project will be significantly impacted by the results of this study.

THX

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
Hi,

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,

Joanne Wang (on behalf of the Project Team)

Joanne Wang, M.E.S.
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788     C: 1-647-523-9816
joanne.wang@aecom.com

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T 1-905-882-4401 F1-905-882-4399
www.aecom.com

Please consider the environment before printing this e-mail.
Hi Joanne,

, a resident from , called me in December and asked a couple of questions on the phone (sorry, I should have told you earlier). I’ve explained the details of our conversation below. Please document this item somewhere. I’m not sure how. He didn’t want to be added on the mailing list, etc. and was satisfied with my answer.

asked about the bridge replacement and was concerned about closing Glendale Avenue during construction. I explained that a traffic management plan will be developed during the detail design phase of the project and the flow of traffic will be maintained during all phases of construction. The bridge will be constructed off site, close to the existing alignment and the new bridge will be built before the existing bridge is demolished. He was satisfied with the answer and did need further action. He also asked when the construction will start. I explained that the anticipated construction start year for the project is 2019, subject to environmental assessment and approval.

Thanks,
Hossein
From: Hosseini, Hossein (MTO) [mailto:Hossein.Hosseini@ontario.ca]
Sent: Wednesday, April 11, 2018 12:24 PM
To: [redacted]
Subject: RE: Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue

Dear [redacted],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future ways to be involved in the Study.

A Public Information Centre (PIC) is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. You are invited to attend the PIC as follows:

Wednesday April 25, 2018
4:00 p.m. to 8:00 p.m.
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Thank you for your interest.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca
Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue Preliminary Design and Class Environmental Assessment Study G.W.P. 2423-15-00

Please add us to list of interest parties to be notified.
---Original Message------
From: 
Sent: Wednesday, April 04, 2018 7:31 AM 
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: 
Address: 
City: 
Province: 
Postal Code: 
Email: 

Message: 

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
-----Original Message-----
From: Wang, Joanne
Sent: Thursday, April 05, 2018 10:32 AM
To: [REDACTED]
Subject: RE: QEW Glendale Interchange Contact Form

Hi [REDACTED],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. We are responding to your inquiry below as well as the attached.

You have been added to the project contact list and will be notified of future ways to be involved in the Study.

A Public Information Centre (PIC) is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. You are invited to attend the PIC as follows:

Wednesday April 25, 2018
4:00 p.m. to 8:00 p.m.
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Thank you for your interest.

Regards,
Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788  C:1-647-523-9816
joanne.wang@aecom.com

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-----Original Message-----
From: [Redacted]
Sent: Tuesday, April 03, 2018 9:18 AM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [Redacted]
Address: [Redacted]
City: [Redacted]
Province: [Redacted]
Postal Code: [Redacted]
Email: [Redacted]

Message:
I use this interchange very frequently and would like to be kept in touch with the assessment process and then the construction schedule.

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
-----Original Message-----
From: [Redacted]
Sent: Wednesday, April 04, 2018 12:49 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [Redacted]
Address: [Redacted]
City: [Redacted]
Province: [Redacted]
Postal Code: [Redacted]
Email: [Redacted]

Message:

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
-----Original Message-----
From: Wang, Joanne
Sent: Wednesday, April 11, 2018 11:58 PM
To: [Redacted]
Subject: RE: QEW Glendale Interchange Contact Form

Hi [Redacted],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future ways to be involved in the Study.

A Public Information Centre (PIC) is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. You are invited to attend the PIC as follows:

Wednesday April 25, 2018
4:00 p.m. to 8:00 p.m.
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Thank you for your interest.

Regards,
Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788   C:1-647-523-9816
joanne.wang@aecom.com

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-----Original Message-----
From: [redacted]
Sent: Wednesday, April 11, 2018 3:09 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

Name: [redacted]
Address: [redacted]
City: [redacted]
Province: [redacted]
Postal Code: [redacted]
Email: [redacted]

Message:

Notices: Email

--
This e-mail was sent from a contact form on QEW Glendale Interchange (https://qew-glendale-interchange.ca)
From: Leech, Fred  
Sent: Thursday, April 19, 2018 10:43 AM  
To: Hosseini, Hossein (MTO); Coulter, Kevin (MTO); Snoop, Martin (MTO) (Martin.Snoop@ontario.ca)  
Cc: Newman, Jon; Sheikh, Riyaz; Wang, Joanne; Fleming, Braden  
Subject: RE: QEW/Glendale - Ivanhoe Cambridge Outlet Mall Contact

Please see attached.

I was directed to [redacted].

[redacted] indicated that:
- He had received the PIC invitation;
- On a go-forward basis he will be the lead contact for this project;
- The advance session will be attended by [redacted];
- Future correspondence to [redacted] should be directed through [redacted] after a first contact to [redacted];
- He has recently shared traffic studies with MTO, Region and Town that do not support allegations of traffic backups onto the interchange ramps.

I indicated to [redacted] that we would revise our contact list so that future correspondence is directed to him personally.

Regards,

Fred Leech  
Senior Environmental Planner  
Impact Assessment and Permitting  
Direct: 905.390.2030  
Cisco Extension: 3312030  
Cell: 289-260-8038  
fred.leech@aecom.com

AECOM  
201-45 Goderich Road  
Hamilton, ON L8E 4W8  
T 905.578.3040  F 905.578.4129

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Fred,

Please see the contact info below as discussed.

Thanks

Hossein:

Here’s the contact we have for [REDACTED]

Note it has been quite a while since we had any correspondence with [REDACTED].

With regard to signage, send Chris anything you have w r t what is being sought, even conceptual.

Thanks

Hugh
From: Wang, Joanne
Sent: Thursday, April 19, 2018 3:56 PM
To:                                      
Cc:  
Subject: RE: April 25th - MTO - GWP 2423-15-00

Hi,

Please see the attachment as per your request.

The public has been invited to attend the Public Information Centre between 4:00 p.m. and 8:00 p.m. at the same venue. You are welcome to attend the public session as well if you wish.

Regards,
Joanne

On behalf of the Project Team

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788  C: 1-647-523-9816
joanne.wang@aecom.com

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From: Newman, Jon  
Sent: Saturday, April 14, 2018 2:29 PM  
To: Newman, Jon; hossein@ontario.ca  
Cc:  
Subject: April 25th - MTO - GWP 2423-15-00

Hello Mr. Hosseini and Mr. Newman,

I will attend on behalf of [redacted]. Please email relevant particulars.
From: Wang, Joanne  
Sent: Thursday, April 19, 2018 3:19 PM  
To:  
Cc: 'hossein.hosseini@ontario.ca'; Coulter, Kevin (MTO) <Kevin.Coulter@ontario.ca>; Newman, Jon <Jon.Newman@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Leech, Fred <Fred.Leech@aecom.com>  
Subject: RE: PIC for Glendale Overpass TESR - April 25th, 2018

Dear [Redacted],

Thank you for contacting me for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. For additional study details, please visit the study website at: http://QEWS-Glendale-Interchange.ca.

You are correct in that we are hosting separate sessions on April 25 before the public is set to arrive. We have one session scheduled between 1:00 and 2:00 pm for nearby businesses, and another session from 3:00 to 4:00 pm for agencies, municipal staff and other external stakeholders. You are welcome to attend whichever advance session best accommodates your schedule. The sessions will be held at the Hilton Garden Inn (500 York Road, Niagara-on-the-Lake).

Regards,

Joanne

On behalf of the Project Team

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788    C:1-647-523-9816
joanne.wang@aecom.com

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Hello Jon,

Further to my voice mail, I would like to have more information on the MTO’s proposed overpass replacement project. I have recently had a discussions with Ron Tripp and Carolyn Ryall from the Niagara Region indicating that there is a stakeholder meeting at 1:00pm before the April 25th PIC. I would like to be invited to this session as well.

Thank you,
From: Wang, Joanne  
Sent: Thursday, April 19, 2018 2:18 PM  
To: [REDACTED]  
Cc: hossein.hosseini@ontario.ca <hossein.hosseini@ontario.ca>; Coulter, Kevin (MTO) <Kevin.Coulter@ontario.ca>; Newman, Jon <Jon.Newman@aecom.com>; Sheikh, Riyaz <Riyaz.Sheik@aecom.com>; Leech, Fred <Fred.Leech@aecom.com>  
Subject: RE: QEW Glendale Interchange Contact Form

Dear [REDACTED],  

Thank you for visiting the project website for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. You have been added to the project contact list and will be notified of future ways to be involved in the Study.

The Project Team has noted your concerns (the on-ramp for the QEW Niagara) and suggestions (signage) regarding safety at this interchange. As part of this Study, the Project Team is developing a preliminary design for improvements to interchange operational, geometric, and safety features. A Public Information Centre (PIC) is being held to introduce the Study, present the considered alternatives to improve the QEW Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. You are invited to attend the PIC as follows:

Wednesday April 25, 2018  
4:00 p.m. to 8:00 p.m.  
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Thank you for your interest.

Regards,  
Joanne

Joanne Wang, M.E.S., MCIP, RPP  
Senior Environmental Planner  
Impact Assessment and Permitting  
D: 1-905-747-1788  C:1-647-523-9816  
joanne.wang@aecom.com
-----Original Message-----
From: [Redacted]
Sent: Monday, April 16, 2018 3:39 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

From: [Redacted]
Address: [Redacted]
City: [Redacted]
Province: [Redacted]
Postal Code: [Redacted]
Email: [Redacted]

Message:
I'm not sure if this is part of the consideration of the study but the on-ramp for the QEW Niagara is quite dangerous. There are two lanes that become one (before you get to the highway) with the right lane yielding to the left. I have had to slam on my brakes so many times as drivers from the right lane either do not notice, or don't care, that they are to yield to traffic in the left. Perhaps painted signs on the roads or larger signs would be helpful?

Thank you!

Notices: Email

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This e-mail was sent from a contact form on Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue (https://qew-glendale-interchange.ca)
Hi,

Thank you for visiting the project website for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. You have been added to the project contact list and will be notified of future ways to be involved in the Study.

Various interchange ramp configurations have been considered. Information on the recommended interchange configuration will be presented at the upcoming Public Information Centre (PIC). You are invited to attend the PIC as follows:

Wednesday April 25, 2018
4:00 p.m. to 8:00 p.m.
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Thank you for your interest.

Regards,
Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
do away with the lights in the middle of the bridge, either add more on ramps and off ramps or design a confusing traffic circle like you did on the Seventh Avenue bridge which is a complete
Hi Kevin,

We have added [redacted] to our contact list.

He also sent a comment through the project website, which I just sent the draft response to the team for review (attached to this email also for reference). Perhaps review that response first?

Thanks.

Regards,

Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788  C:1-647-523-9816
joanne.wang@aecom.com

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----Original Message-----
From: Coulter, Kevin (MTO) [mailto:Kevin.Coulter@ontario.ca]
Sent: Tuesday, April 17, 2018 9:40 AM
To: Wang, Joanne <joanne.wang@aecom.com>
Cc: Leech, Fred <Fred.Leech@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Newman, Jon <Jon.Newman@aecom.com>; Hosseini, Hossein (MTO) <Hossein.Hosseini@ontario.ca>
Subject: FW: Glendale/QEW PIC

Hi Joanne:

Can you please confirm this gentlemen was added to our mailing list and prepare a response for review? You can tell him that the PIC display materials will be uploaded to our project website within a week of the event. Please also speak to how the three DDI alternatives accommodate pedestrian and cyclist movement. It might be beneficial to mark up the 'base case' figure and trace how the movements will occur. Include a disclaimer that the design is subject to further changes following that PIC, and let him know that he will be made aware of the TESR so that he can review the final Preliminary Design.
Lastly, please forward us a copy of his original submission to the website for records purposes.

Thanks,

-Kevin

Kevin Coulter | Environmental Planner
Central Region Environmental Section | Ontario Ministry of Transportation telephone 416.235.5272 | fax 416.235.3446 | e-mail Kevin.Coulter@ontario.ca

-----Original Message-----
From: Hosseini, Hossein (MTO)
Sent: April 16, 2018 3:59 PM
To: Coulter, Kevin (MTO)
Subject: FW: Glendale/QEW PIC

Let's talk about how to respond to this.

-----Original Message-----
From: [blacked out]
Sent: April 16, 2018 10:24 AM
To: Hosseini, Hossein (MTO)
Subject: Glendale/QEW PIC

Mr Hosseini,

Moments ago I completed the online contact form on the consultant’s website. It was unclear if I would automatically be added to an information email list.

My interest lies in accommodation of cyclists with the new bridge. The website did not have a schematic of the proposed design. As I am unable to attend the PIC on April 25, I was hoping to review the proposed road platform crossing the QEW.

From the low resolution image provided to local newspapers, I was able to trace the movement of motor vehicles exiting/entering the QEW, and how motor vehicles will cross the highway. Hopefully enough width will be provided to enable cyclists to safely cross the highway with minimal interference with other traffic.

Respectfully,
Thank you for visiting the project website for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. You have been added to the project contact list and will be notified of future ways to be involved in the Study.

We are sorry to hear that you will not be able to attend the Public Information Centre on April 25. The display boards will be made available on the project website within a week of the event, so please continue to visit the project website at http://qew-glendale-interchange.ca/.

With regard to your comment, the Diverging Diamond Interchange designs we are presenting at the Public Information Centre accommodate pedestrians and cyclists through a centre island in the middle of the bridge, protected with concrete barriers. The preferred alternative design remains a work in progress, but it will eventually be documented in a Transportation Environmental Study Report (TESR) at the completion of the Study. You will be notified of the availability of the TESR for public review.

Thank you for your interest.

Regards,
Joanne
On behalf of the Project Team

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788 C:1-647-523-9816
joanne.wang@aecom.com

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-----Original Message-----
From: Anonymous
Sent: Monday, April 16, 2018 10:10 AM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

From:
Address:
City:
Province:
Postal Code:
Email:

Message:
The local newspapers were provided a proposed design that will be featured at the upcoming PIC. Is this proposed design available on the website?

Unfortunately I have a conflict on April 25 and will be unable to attend. My personal concern relates to how bicycles will be accommodated on the proposed bridge. Is it possible to provide details?

Thanking you in advance,

Notices: Email

--
This e-mail was sent from a contact form on Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue (https://qew-glendale-interchange.ca)
HI:

Thanks for the follow-up.

We look forward to discussing the project with [redacted] on April 25!

Regards,

Fred Leech
Senior Environmental Planner
Impact Assessment and Permitting
Direct: 905.390.2030
Cisco Extension: 3312030
Cell: 289-260-8038
fred.leech@aecom.com

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Good afternoon Fred,

This email is to confirm that [redacted] and [redacted] from [redacted], will be attending the upcoming PIC at the Hilton Garden Inn, regarding QEW/Glendale on April 25, 2018.

Thank you,
Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

You have been added to the project contact list and will be notified of future ways to be involved in the Study.

A Public Information Centre (PIC) is being held to introduce the Study, present the considered alternatives to improve the QE
c

Glendale Avenue interchange, and provide interested parties with the opportunity to discuss the Study with the Project Team and provide input. You are invited to attend the PIC as follows:

Wednesday April 25, 2018
4:00 p.m. to 8:00 p.m.
Hilton Garden Inn, 500 York Road, Niagara-on-the-Lake

The PIC will be an informal drop-in centre and representatives from the MTO and the Consultant Team will be available to answer questions and discuss the Study.

Thank you for your interest.

Regards,

Hossein

---

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-6513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

---

Good afternoon,

I am [redacted] and I would like to be added to the mailing list for the Study for the above-noted project.

Please let me know if you need anything else.

Thank you,
Hi All,

[Name] contacted me yesterday and wanted to know if we are having a liaison person for the project in Niagara area, other than the contacts noted in the brochures. I returned his call today and provided him some info about the project, timeline, etc. and noted that he can contact the project team at any time if he has any questions or comments or visit the project website for more information. I also invited him to attend our PIC tomorrow. He had received the invitation and was aware of the PIC and is planning to attend.

Thanks,

Hossein

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5613
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca
Thank you for your prompt response. Much appreciated. See you then.

On Mon, Apr 23, 2018 at 11:57 AM Hossein, Hossein (MTO) <Hossein.Hosseini@ontario.ca> wrote:

Hi [name],

Thank you for contacting me with regard to the proposed improvements to the Queen Elizabeth Way and Glendale Avenue interchange. I can confirm that you have been added to the project’s mailing list and will receive updates throughout the project.

I'm glad to hear that you are able to attend the Public Information Centre on April 25, 2018. Please be sure to fill out a comment card before leaving so we have a written record of your thoughts. Current information about the project can also be found at http://QEW-Glendale-Interchange.ca.

Thank you for your interest in the project. I look forward to meeting you on April 25th at the Public Information Centre.

Yours truly,

Hossein

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

From: [name]
Sent: Monday, April 23, 2018 1:56 PM
To: Hossein, Hossein (MTO) <Hossein.Hosseini@ontario.ca>
Cc: Coulters, Kevin (MTO) <Kevin.Coulters@ontario.ca>; Leech, Fred <Fred.Leech@aecom.com>; Newman, Jon <Jon.Newman@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Wang, Joanne <Joanne.wang@aecom.com>

Subject: Re: Interchange Improvements at QEW & Glendale Ave G.W.P. 2423-15-00

Hello Mr. Hosseini,

Please place me on the mailing list for any updates on this study. As a resident who lives in this affected area and who uses this interchange several times a day, I will need to know how I will be affected and would also like to provide input where possible. I plan on attending the Public Information Centre open-house on April 25, from 4 - 8 pm.

Thank-you!
From: Wang, Joanne  
Sent: Thursday, April 26, 2018 11:28 AM  
To: Newman, Jon <Jon.Newman@aecom.com>; Coulter, Kevin (MTO) (Kevin.Coulter@ontario.ca) <Kevin.Coulter@ontario.ca>; Leech, Fred <Fred.Leech@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Hosseini, Hossein (MTO) (Hossein.Hosseini@ontario.ca) <Hossein.Hosseini@ontario.ca>  
Subject: RE: QEW - Glendale

Thank you Jon.

We will add him to the contact list.

From: Newman, Jon  
Sent: Thursday, April 26, 2018 11:02 AM  
To: Wang, Joanne <joanne.wang@aecom.com>; Coulter, Kevin (MTO) (Kevin.Coulter@ontario.ca) <Kevin.Coulter@ontario.ca>; Leech, Fred <Fred.Leech@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Hosseini, Hossein (MTO) (Hossein.Hosseini@ontario.ca) <Hossein.Hosseini@ontario.ca>  
Subject: QEW - Glendale

All

I receive a call this morning from a [redacted], a resident of [redacted]. He indicated that he was unable to attend yesterday’s PIC and wanted to be added to the mailing list and also asked to be sent any information on the project.

I told him we would add him to our mailing list and also directed him to the website.

He had some other general questions on how the meeting went yesterday and specifically wanted to know if a roundabout at the York Road intersection was being considered. He indicated that he had some definite concerns with the roundabout and preferred a traffic signal.

I advised him that I would note his comments and suggested that he could add any comments on the website.

His address is as follows:
Thanks, Jon

Jon Newman, P. Eng.
Senior Project Manager, Transportation, Greater Toronto Area
D +1-905-668-4021x2228
M +1-905-242-1765
jon.newman@aecom.com

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T +1-905-668-9363
aecom.com

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LinkedIn Twitter Facebook Instagram
Subject: FW: QEW/Glendale Avenue - public inquiry

From: Hosseini, Hossein [mailto:Hossein.Hosseini@ontario.ca]
Sent: Thursday, April 26, 2018 1:11 PM
To: Newman, Jon <Jon.Newman@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>
Cc: Wang, Joanne <joanne.wang@aecom.com>; Coulter, Kevin (MTO) <Kevin.Coulter@ontario.ca>; Leech, Fred <Fred.Leech@aecom.com>
Subject: QEW/Glendale Avenue - public inquiry

Jon,

FYI - I just spoke with [redacted]. He mentioned that he has already talked with you earlier today and made some comments about the roundabout option at York/Glendale. He couldn’t make it to the PIC but he had the project website address and told me that he will check the site for any updates.

His address and phone number is below and he wanted to be added to the mailing list

[blank]

Thanks

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca
Subject: FW: No notice of meeting Received

From: Hosseini, Hossein (MTO) [mailto:Hossein.Hosseini@ontario.ca]
Sent: Tuesday, May 01, 2018 9:41 AM
To: [redacted]
Cc: Barber, Chris (MTO) <Chris.Barber@ontario.ca>; Coulter, Kevin (MTO) <Kevin.Coulter@ontario.ca>; Newman, Jon <Jon.Newman@aecom.com>; Wang, Joanne <joanne.wang@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Leech, Fred <Fred.Leech@aecom.com>
Subject: RE: No notice of meeting Received

Hi [redacted],

Thank you for your email.

Please be advised that the Public Information Centre that was held on April 25, 2018 was for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue, Preliminary Design and Class Environmental Assessment Study, which is a separate study from QEW Garden City Skyway. This Study is developing a preliminary design for:
- Replacement of the Glendale Avenue Bridge over the QEW, required in the short term due to its age and condition;
- Improvements to the interchange: operation, geometric and safety features;
- A relocated Ontario Travel Information Centre and new commuter parking lot; and
- Partnership with the Region of Niagara and the Town of Niagara on the Lake for potential enhancements to address operational deficiencies at the Glendale Avenue / York Road intersection.

For additional study details, please visit the study website at: http://QEW-Glendale-Interchange.ca.

Please let me know if you wish to be added to the contact list for the QEW Glendale Interchange Improvements study.

Regards,

Hossein Hosseini, P. Eng., P.M.P
Project Engineer
Ministry of Transportation Ontario
Central Region Planning and Design Office, Hamilton/Niagara
159 Sir William Hearst Avenue, Building D, 4th Floor
Downsview, Ontario M3M 0B7
Phone: 416-235-5513
Fax: 416-235-3576
E-mail: hossein.hosseini@ontario.ca

From: [redacted]
Sent: April-26-18 12:08 PM
To: project-team@gewgcs.ca
Subject: No notice of meeting Received

Good Day,

As landowners who are affected on several sites by the upcoming Garden City bridge twinning we were not notified of yesterdays meeting at the Hilton Garden Inn.

We are supposedly on you list as we were at previous meetings.
Subject: RE: QEW Glendale Interchange Contact Form

Dear [Name],

Thank you for visiting the project website for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. You have been added to the project contact list and will be notified of future ways to be involved in the Study.

Thank you for your interest.

Regards,
Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788 C: 1-647-523-9816
joanne.wang@aecom.com

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T 1-905-882-4401 F 1-905-882-4399
www.aecom.com

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-----Original Message-----
From: [Name]
Sent: Wednesday, April 25, 2018 5:30 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

From: 
Address: 
City: 
Province: 
Postal Code: 
Email: 

Message:

Notices: Email

---

This e-mail was sent from a contact form on Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue (https://qew-glendale-interchange.ca)
Hi [Name],

Thank you for contacting me for the Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue. For additional study details, please visit the study website at:
http://QEW-Glendale-Interchange.ca

Both you and [Name] have been added to the project contact list and will be notified of future ways to be involved in the Study.

Regards,
Joanne

On behalf of the Project Team

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788  C: 1-647-523-9816
joanne.wang@aecom.com

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T 1-905-882-4401  F 1-905-882-4399
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From: [Name] 25, 2018 1:00 PM
To: Hosseini, Hossein (MTO); jon.newman@aecom.com
Cc: 
Subject: Preliminary Design and Class Environmental Assessment Study - Interchange Improvements at the QEW and Glendale Ave

Good afternoon,

Could you please add myself and [Name] to the mailing list for the Preliminary Design and Class Environmental Assessment Study - Interchange Improvements at the QEW and Glendale Avenue

Email is preferred:

Alternatively mailing address is:

Thank you very much!

--
Subject: RE: Interchange QEW/Glendale Ave.

From: Newman, Jon
Sent: Sunday, April 29, 2018 5:56 PM
To:  
Cc: Hosseini, Hossein (MTO) <Hossein.Hosseini@ontario.ca>; Leech, Fred <Fred.Leech@aecom.com>; Wang, Joanne <joanne.wang@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Coulter, Kevin (MTO) <Kevin.Coulter@ontario.ca>

Subject: RE: Interchange QEW/Glendale Ave.

Dear [Name],

Thank you for contacting the Project Team about the Preliminary Design and Class Environmental Assessment Study for Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue.

We are sorry that you were not able to join us on Wednesday night for the Public Information Centre. We have added your names to the project mailing list and you will be notified of future ways to be involved in the Study.

Regards, Jon

Jon Newman, P. Eng.
Senior Project Manager, Transportation, Greater Toronto Area
D +1-905-668-4021 x2228
M +1-905-242-1765
jon.newman@aecom.com

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-----Original Message-----

From: [Name]
Sent: Thursday, April 26, 2018 2:28 PM
To: Newman, Jon
Subject: Interchange QEW/Glendale Ave.

Dear Sir

We were unable to attend Study Review on Wednesday 25th April - but would be interested in those results. Assuming some kind of collation of results will have been taken, we would appreciate being placed on the project mailing list in order to be appraised of further developments, Thank you.
Subject: RE: QEW Glendale Interchange Contact Form

Dear [Name],

Thank you for taking the time to visit the project website and submit your contact information.

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,
Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788 C: 1-647-523-9816
joanne.wang@aecom.com

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-----Original Message-----
From: [Name]@example.com
Sent: Thursday, May 03, 2018 7:42 PM
To: Wang, Joanne <joanne.wang@aecom.com>; Crowell, Mark <mark.crowell@aecom.com>
Subject: QEW Glendale Interchange Contact Form

From:
Address:
City:
Province:
Postal Code:
Email:

Message:

Notices: Email

--
This e-mail was sent from a contact form on Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue (https://qew-glendale-interchange.ca)
Good afternoon:

Please find attached comments RE: The Interchange Improvements at the QEW and Glendale Ave Preliminary Design and Class Environmental Assessment Study.

Regards,
May 24, 2018

Hossein Hosseini, P.Eng., M.Eng., PMP
MTO Project Manager
159 Sir William Hearst Ave., 4th Floor
Toronto, ON M3M 0B7

Jon Newman, P.Eng.
Consultant Project Manager
300 Water St.
Whitby, ON L1N 9J2

Dear Sirs:

RE: Interchange Improvements at the Queen Elizabeth Way and Glendale Avenue Preliminary Design and Class Environmental Assessment Study – Public Information Centre Wednesday, April 25th, 2018.

Thank you for this opportunity to comment on the Ministry of Transportation’s project to reconstruct the Glendale Avenue - QEW interchange. In general, we are supportive of this project as it secures vital access to our [redacted] in addition to other important Regional destinations. In general, we do not have a preference between the alternatives.

The interchange and construction activities affect the natural and built environment in several ways. At the PIC session, we raised our concerns with the project team and now we would like to document these concerns below:

1. Many of [redacted] community use the on-ramps and off-ramps of this interchange. Currently the surrounding intersections can break down during peak times. This is especially true when the signalized intersections are on fixed timing. Will the new design improve the capacity for these intersections?

2. Will the construction affect the traffic going in to [redacted]?

3. The new design has stop conditions at the end of the ramps. Is this safer than the existing free flow off-ramps?

4. The [redacted] community is a walking community and values active transportation. Will pedestrian access be improved with the preferred alternative? Will the local road authorities upgrade their bicycling and walking facilities to match the facilities on the overpass?

5. How much will construction affect the vehicular, transit, walking and bicycling traffic?
6. Will our directional signage (i.e., TODS and wayfinding) be affected?

7. Will the transit hub (Regional Transit and GO transit) located at the be affected (during construction and afterwards)?

8. Will there be any impact of the storm-water capacity through the overpass area? The upstream open storm-water system passes through. The system currently works very well and has not been breached. We are sensitive to the potential for flooding, as our main electrical plant is located at the lowest point on the north side of. We would like assurances that the current design capacity will be maintained or improved by the project.

Again thank you for this opportunity to comment on this project, I hope that our comments will add to the overall public input component of your study. We will require a written response to our comments.

Should you have any questions or require clarification of our comments, please contact the undersigned. In addition, please direct further correspondence related to this project to the undersigned.

Regards,
From: Wang, Joanne
Sent: Friday, June 01, 2018 12:09 AM
To: hossein.hosseini@ontario.ca; Newman, Jon <Jon.Newman@aecom.com>; Sheikh, Riyaz <Riyaz.Sheikh@aecom.com>; Leech, Fred <Fred.Leech@aecom.com>
Cc: 
Subject: RE: Glendale Interchange

Hi,

Thank you for contacting the Project Team. Please note that the displays at the April 25, 2018 Public Information Centre are available for download at the link below: https://qew-glendale-interchange.ca/wp-content/uploads/2018/05/QEW-Glendale-PIC-Boards.pdf

You have been added to the project contact list and will be notified of future project consultation activities.

Regards,
Joanne

Joanne Wang, M.E.S., MCIP, RPP
Senior Environmental Planner
Impact Assessment and Permitting
D: 1-905-747-1788  C:1-647-523-9816
joanne.wang@aecom.com

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www.aecom.com

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Please consider the environment before printing this e-mail.
Subject: Glendale Interchange

Good Morning. Sorry for the shot gun approach here, but could one of you forward me a pdf of the plan/design for Glendale at this point.

THX

Best Wishes,