



Barrie Rail Corridor Expansion Project Transit Project Assessment Process Environmental Project Report Addendum

Network Wide Structures Project - McNaughton Road Grade Separation

Metrolinx

20 Bay Street, 6th Floor, Toronto, Ontario M5J 2W3

May 2021

May 14, 2021

Ms. Lindsay Prihoda
Project Manager
Metrolinx
20 Bay Street, 6th Floor
Toronto, Ontario
M5J 2W3

Dear Ms. Prihoda,

Please find enclosed one (1) electronic copy, in PDF format, of our report entitled
*“Barrie Rail Corridor Expansion Project - Transit Project Assessment Process
Environmental Project Report Addendum, Network Wide Structures Project,
McNaughton Road Grade Separation”*.

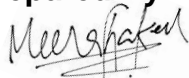
Revision Log

Rev	Description	Revised By	Reviewed By	Issued By	Date Issued (M/D/Y)
0A	DRAFT for Metrolinx Review	M. Shakeel	B. Felker	B. Felker	03/05/2021
0B	FINAL DRAFT for Metrolinx Review	M. Shakeel	B. Felker	B. Felker	04/01/2021
0C	FINAL DRAFT for GRT Circulation	M. Shakeel	B. Felker	B. Felker	04/08/2021
0D	FINAL Issued for Public Review	M. Shakeel	B. Felker	B. Felker	05/14/2021

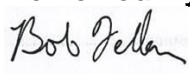
Sincerely,

**Wood Environment & Infrastructure Solutions,
A Division of Wood Canada Limited**


Prepared By:


Meera Shakeel, E.I.T
Environmental Planner

Reviewed By:


Bob Felker, BES, MCIP, RPP
Senior Environmental Planner

Issued by:


Bob Felker, BES, MCIP, RPP
Senior Environmental Planner

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Network Wide Structures Project - McNaughton Road Grade Separation

Prepared for:

Metrolinx
20 Bay Street, 6th Floor, Toronto, Ontario M5J 2W3

Prepared by:

Wood Environment & Infrastructure Solutions,
A Division of Wood Canada Limited
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5, Canada
T: 905-355-2353
www.woodplc.com

May 2021

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Executive summary

Project Overview

Metrolinx is completing a Transit Project Assessment Process (TPAP) Addenda under *Ontario Regulation (O.Reg.) 231/08, Transit Project and Metrolinx Undertakings*. Metrolinx is expanding its services as part of the GO Expansion Program, which will provide both increased train frequency and availability across its seven rail corridors. The GO Expansion Program is an investment program that will transform GO Rail into a comprehensive regional rapid transit network that provides the expanded mobility the Greater Toronto and Hamilton Area (GTHA) needs to accommodate growth and maintain a high quality of life and prosperous economy. The long-term goal and vision of the GO Expansion Program is to provide 15-minute two-way all-day service. With major investment in GO Rail infrastructure, Metrolinx will be quadrupling GO Rail service and nearly doubling GO Rail ridership. By 2055, annual ridership is expected to exceed 200 million, compared to 105 million without GO Expansion (GO Expansion Full Business Case: Metrolinx, November 2018a). Ongoing Metrolinx initiatives are shown in Figure 1.1-1. As part of this program, Metrolinx is increasing service on the Barrie Rail Corridor. System upgrades are being planned along this rail corridor, including the modifications of the infrastructure necessary to support the introduction of additional trains to meet these needs.

A Transit Project Assessment Process (TPAP) under *O.Reg. 231/08* was completed for the Barrie Rail Corridor Expansion Project. The TPAP process was used to assess the potential environmental impacts associated with the transit project, identify mitigation measures for those impacts, and to develop a monitoring program to verify the effectiveness of the proposed mitigation measures. On October 5th, 2017, the Ministry of the Environment, Conservation and Parks (MECP) issued a Notice to Proceed to Metrolinx for the Barrie Rail Corridor Expansion Project. Subsequently, a Statement of Completion was submitted by Metrolinx to MECP that completed the TPAP. Through on-going planning and technical studies completed as part of the Network Wide Structures Project, several grade separations and crossing improvements were proposed along the Barrie Rail Corridor to enhance on-time performance, operational flexibility / reliability, and reduce traffic conflicts, and this includes the McNaughton Road Grade Separation (see Figure 1.1-1).

This change (proposed McNaughton Road Grade Separation) to the Barrie Rail Corridor Expansion Project was determined to be inconsistent with the project description outlined in the *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Environmental Project Report* (BRCE EPR) (Hatch 2017a). As described in Section 15(1) of *O.Reg. 231/08*, any change that is inconsistent with a previously approved EPR requires a reassessment of the effects associated with the project, the identification of potentially new mitigation measures, and potentially new monitoring systems in an Addendum to the previously approved EPR. Therefore, Metrolinx has prepared this EPR Addendum to address the effects associated with the proposed McNaughton Road Grade Separation.

Study Process

This EPR Addendum was prepared in accordance with *O.Reg. 231/08, Transit Projects and Metrolinx Undertakings*, which includes provisions for proponents to make changes to a transit project after the Statement of Completion is submitted to the Director of the Environmental Assessment and Approvals Branch of the MECP and the MECP Regional Director. In compliance with Section 15(1) of the Regulation, Metrolinx has prepared this Addendum to the BRCE EPR. Metrolinx has determined that the change to the Barrie Rail Corridor Expansion Project is significant and therefore the publication of a Notice of Environmental Project Report Addendum and a 30-day comment period is required.

The following are the key steps in the EPR Addendum process under TPAP:

- Prepare an assessment of the effects the proposed change may have on the environment;
- Prepare and distribute an EPR Addendum;
- Prepare and distribute a Notice of Environmental Project Report Addendum; and
- Conduct a final review by the public and stakeholders prior to proceeding with the proposed Addendum.

In addition to the required key steps listed above, in order to enhance the planning process for this project, Metrolinx has voluntarily conducted additional consultation, as described in Section 5 of this EPR Addendum. The consultation completed for this Addendum to the EPR is generally consistent with consultation that would be undertaken for a new TPAP. Further details describing the TPAP Addendum process are provided in Section 1.3 of this EPR Addendum.

EPR Addendum Report Structure

This Addendum report has been organized into six sections (Introduction, Update to Project Description, Existing Conditions, Impact Assessment, Consultation and Commitments to Future Work) and includes supporting environmental and technical study reports (included as appendices), to address the requirements set out in *O.Reg. 231/08*. The report details the change (proposed McNaughton Road Grade Separation) to the original BRCE EPR (Hatch 2017a) and the reasons for those changes. It summarizes the existing conditions within the McNaughton Road Grade Separation study area and potential environmental effects that could occur during the construction as well as for the operation and maintenance of the proposed grade separation at McNaughton Road, in the City of Vaughan. The report provides mitigation measures and monitoring activities to mitigate these potential environmental effects. In addition, the report documents all stakeholder consultation efforts made by Metrolinx to solicit input from the public, regulatory agencies, Indigenous Nations, affected municipalities and adjacent property owners. The report also lists commitments for future work that might be required.

Project Description

The McNaughton Road Grade Separation is a component of the Network Wide Structures Project that will support the objectives of the GO Expansion Program.

The McNaughton Road Grade Separation project involves the construction of a road overpass (elevated roadway) with two (2) vehicular traffic lanes in each direction above rail tracks, and a multi-use pathway on the south side of the structure. Discussions are on-going with the City of Vaughan to determine the requirements for a multi-use pathway to the north side of the structure. Two (2) multi-use pathways to the south of the roadway, one on either side of the rail corridor, will provide connections at the existing (non-elevated) level to the Maple GO station.

Assessment of Potential Effects and Proposed Mitigation Measures

The proposed McNaughton Road Grade Separation has the potential to cause changes to the existing environmental conditions within the study area that may result in both positive and negative environmental effects. Therefore, following the identification of the existing conditions, an assessment of the potential environmental effects, associated mitigation measures and monitoring activities was completed for the McNaughton Road Grade Separation (see Section 4). The assessment considered both the construction phase, and the operations and maintenance phase.

Table ES-1 provides a summary of the assessment of potential environmental effects, for the construction and operation phases, the measures identified to mitigate impacts, and commitments for monitoring during implementation of the project. A potential effect is denoted by a “●”. If no potential effects are anticipated, a “-” is indicated.

Table ES-1: Impact Assessment (Potential Effects, Mitigation Measures and Monitoring)

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Natural Environment (Wildlife and Wildlife Habitat)					
Wildlife	—	—	Disturbance, displacement or mortality of wildlife	<ul style="list-style-type: none">Prior to construction, investigation of the Project Footprint for wildlife and wildlife habitat that may have established following the completion of previous surveys will be undertaken, as appropriate.If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced, and wildlife will be encouraged to move offsite and away from the construction area on its own. A qualified biologist will be contacted to define the appropriate buffer required from wildlife.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Significant Wildlife Habitat (SWH)	—	—	Disturbance or destruction of Migratory Butterfly Stopover Areas used by Monarch Butterflies.	<ul style="list-style-type: none">Opportunities to plant milkweed or forage vegetation outside of and within the rail Right-of-Way (ROW) will be undertaken, where possible, and in accordance with the Metrolinx Vegetation Guideline (2020).If vegetation clearing will proceed when Monarch larvae may be present (April 1 to September 30), milkweed plants should be inspected for Monarch larvae prior to their removal. If larvae are present, they may be moved to a location that is suitable and safe under the direction of a qualified biologist. Monarch caterpillars may be moved to other milkweed plants; for other larval stages (i.e., eggs and chrysalis). Entire milkweed plants should be transplanted.Provide mitigation measures for additional migratory butterfly species as required.	<ul style="list-style-type: none">Regular monitoring will be undertaken during construction to prevent unauthorized impacts to the Migratory Butterfly Stopover Areas.
Snake hibernacula	—	—	Disturbance or destruction of Reptile Hibernaculum.	<ul style="list-style-type: none">Where project activity occurs adjacent to suitable snake hibernacula, exclusionary fencing will be erected along the activity area to fully isolate the area of activity during the active snake season. In the event that exclusionary fencing cannot be installed, follow-up discussions with the Ministry of the Environment, Conservation and Parks (MECP) and the Ministry of Natural Resources and Forestry (MNRF) will be required to determine adequate alternative mitigation measure(s).For areas where the hibernacula feature requires removal to facilitate development, the exclusion fencing is to be installed during the active snake season and prior to any	<ul style="list-style-type: none">Monitoring will be undertaken prior to construction to survey exclusionary fencing installation and regular monitoring during construction to survey for snakes potentially trapped within exclusionary areas.Continuous monitoring of feature removal will be undertaken during activity.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				construction activities commencing to prevent snakes from entering the feature pre-removal. Any snakes encountered within the exclusion fencing will be relocated outside the fencing and within suitable habitat containing suitable vegetation cover/refuge by a qualified biologist in accordance with the required permit(s) in accordance with the MNRF's Reptile and Amphibian Exclusion Fencing (2013).	
Migratory Breeding Birds and Nests	•	–	Disturbance or destruction of migratory bird nests.	<ul style="list-style-type: none">All works must comply with the <i>Migratory Birds Convention Act</i> (MBCA), including timing windows for the nesting period (April 1st to August 31st in Ontario).If activities are proposed to occur during the general nesting period a breeding bird and nest survey will be undertaken prior to required activities. Nest searches by an experienced searcher are required and will be completed by a qualified biologist no more than 48 hours prior to vegetation removal.If a nest of a migratory bird is found outside of this nesting period (including a ground nest) it still receives protection.	<ul style="list-style-type: none">Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
Natural Environment (Species at Risk (SAR))					
General	•	–	Habitat loss, disturbance and/or mortality to SAR.	<ul style="list-style-type: none">All requirements of the <i>Endangered Species Act</i> (ESA) and <i>Species at Risk Act</i> (SARA) will be met. Species-specific mitigation measures will be implemented based on any recommended surveys undertaken prior to construction, and consultation with MECP/MNRF.If SAR is present and conservation strategies have been developed by MNRF/MECP, the commitments in the recover strategy will be followed.On-site personnel will be provided with information (e.g., factsheets) that address the existence of potential SAR on-site, the identification of the SAR species and the procedure(s) to follow if an individual is encountered or injured.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
Barn/Bank Swallow	•	–	Habitat loss, disturbance and/or mortality to Barn and/or Bank Swallow.	<ul style="list-style-type: none">Field surveys will be undertaken prior to construction to confirm the number of nests present at the known locations and whether the nests remain active.Where loss or disturbance cannot be avoided (e.g., due to work on bridges or banks), all requirements under the ESA	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<p>will be met, including any registration, compensation, replacement structures and/or permitting requirements.</p> <ul style="list-style-type: none">If construction activities are scheduled during the nesting season for Barn and/or Bank Swallow (April 1st to August 31st), a nest search will be undertaken to confirm that no Barn and/or Bank Swallow are nesting on structures or banks that may be affected by construction activities on or near these areas. If possible, the area will be netted prior to nesting season to dissuade use of these areas for nesting.	<p>impacts. Additional monitoring measures will be developed with the MECP, if required.</p>
Chimney Swift	<ul style="list-style-type: none">	–	Habitat loss, disturbance and/or mortality to Chimney Swift.	<ul style="list-style-type: none">If repair, maintenance or demolition of buildings/structures with suitable roosting/nesting habitat (e.g., chimneys) is to take place, targeted surveys for Chimney Swift will be completed as per the Bird Studies Canada Chimney Swift Monitoring Protocol (2009).Repair, maintenance, or demolition of an identified roosting/nesting structure may constitute destruction of critical habitat and would be discussed in advance with the MECP and requirements of the ESA will be met.Register activities for Chimney Swift under the ESA and consult with MECP to fulfil requirements the ESA and its associated regulations.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
SAR Bats	–	–	Habitat loss, disturbance and/or mortality to SAR Bats.	<ul style="list-style-type: none">Disturbance to bat roosting habitat will be avoided during the bat roosting period of March 31st to September 1st, with emphasis on avoiding potential effects during the maternity period of June 1st to July 31st and in accordance with MECP requirements.Additional monitoring, mitigation and compensation for removal of suitable cavity trees may be required based on the results of additional surveys and consultation with the MECP.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
Aquatic SAR	–	–	Habitat loss, disturbance and/or mortality to aquatic SAR.	<ul style="list-style-type: none">Specific mitigation measures identified through the Aquatic Habitat and Fish Community Assessment, and/or any other studies, will be implemented.If aquatic SAR is present, design and construction will occur in accordance with MECP requirements.Register activities that fall under the notice of activity for aquatic species for works within habitat of certain fish or mussels.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
					measures will be developed with the MECP, if required.
SAR Turtles	–	–	Habitat loss, disturbance and/or mortality to SAR turtles.	<ul style="list-style-type: none">In areas identified as being potential SAR turtle habitat, in-water works will be scheduled to occur outside of the turtle overwintering period of October 1st to April 30th in any given year and in accordance with MECP requirements.Prior to in-water works, in areas identified as being potential SAR turtle habitat, an inspection for turtles will be conducted. If a nesting turtle is found, the MECP will be notified immediately, a suitable buffer zone will be flagged around the site, and that area will be protected from harm during the nesting season.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
SAR Snakes	–	–	Habitat loss, disturbance and/or mortality to SAR snakes.	<ul style="list-style-type: none">Please refer to the “Wildlife” environmental component within this table for applicable general mitigation measures.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
Natural Environment (Vegetation)					
Vegetation Removal and Compensation Plans	<ul style="list-style-type: none">	–	Tree / Vegetation removal, injury and protection.	<ul style="list-style-type: none">An Arborist Report will be prepared which meets regulatory requirements and is completed by an I.S.A. Certified Arborist. The report will also be completed with regard to the Metrolinx <i>Vegetation Guideline</i> (2020), <i>Ontario Forestry Act R.S.O. 1990</i>, the <i>Endangered Species Act</i>, and other regulations, municipal by-laws and best management practices as applicable.The Arborist Report will include, but not be limited to the individual identification of all trees within the Project Study Area including those that require removal or preservation, or trees that may be injured as a result of the Project. Trees to be identified within the Project Study Area will include those on Metrolinx property, trees on public and private lands, and boundary trees. Municipal by-laws will dictate the minimum Diameter at Breast Height (DBH) which requires inventory and additional requirements for tree inventories and tree protection plans. The Arborist Report will include all	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.The success of vegetation compensation activities will be monitored in accordance with the Metrolinx <i>Vegetation Guideline</i> (2020). The approach to compensation monitoring will be determined by property ownership, applicable governing bylaws/regulations and

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<p>information needed to establish compensation ratios and tree end use (including identification of high value trees) as per the Metrolinx <i>Vegetation Guideline</i> (2020).</p> <ul style="list-style-type: none">• If a tree requires removal or injury, compensation and permitting/approvals (as required) will be undertaken in accordance with the Metrolinx <i>Vegetation Guideline</i> (2020). Adhere to all applicable bylaws and regulations for tree removals outside of Metrolinx properties.• Pruning of branches will be conducted through the implementation of proper arboricultural techniques.• Tree Protection Zone (TPZ) fencing will be established to protect and prevent tree injuries in accordance with local by-law requirements.• Prior to the undertaking of tree removals, a Tree Removal Strategy, building upon the considerations and elements set out in the Metrolinx <i>Vegetation Guideline</i> (2020), will be developed and implemented in adherence with best practices, standards and regulations on safety, environmental and wildlife protections.• Compensation for tree removals will be undertaken in accordance with provisions outlined in the Metrolinx <i>Vegetation Guideline</i> (2020). Adhere to all applicable bylaws and regulations for tree removals outside of Metrolinx properties.• Vegetation removals will also consider and mitigate potential impacts to sensitive species, e.g., migratory birds and Species at Risk (SAR), and features, e.g., Designated Natural Areas and Significant Wildlife Habitat. Refer to Natural Environment commitment tables for additional details.	<p>location with respect to ecological functioning.</p> <ul style="list-style-type: none">• Monitoring requirements will be undertaken in accordance with conditions of permits and approvals.• Monitoring and management of trees/vegetation within the rail corridor right-of-way will be undertaken in accordance with the IVM Program.
Vegetation Removal and Compensation Plans	–	–	Disturbance, injury and/or removal of SAR vegetation, including Butternut.	<ul style="list-style-type: none">• As part of the Arborist Report, all trees within or adjacent to the Project Footprint that will be removed or injured as part of the Project will be inventoried, including Butternut and any other SAR tree.• Each Butternut that may potentially be removed or impacted must be assessed by a qualified Butternut Health Assessor, in accordance with MNRF <i>Butternut Assessment Guidelines</i> (2014). The Assessor will prepare a Health Assessment	<ul style="list-style-type: none">• On-site inspection will be undertaken to confirm the implementation of the mitigation measures.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				Report for submission to MECP to determine the next course of action.	
Integrated Vegetation Management (IVM)	–	–	Footprint Impacts and potential for the establishment of invasive species and other incompatible species.	<ul style="list-style-type: none">An IVM Plan will be developed and implemented that is in adherence with the Metrolinx <i>Vegetation Guideline</i> (2020) and the IVM Program. The Guideline’s selection criteria will be used to assess the vegetation present as compatible or incompatible, and manage it, if necessary, in a way which meets safety needs in a timely manner, is sensitive to environmental conditions, and maximizes cost-effectiveness.	<ul style="list-style-type: none">The presence, density, and location of compatible and incompatible species will be monitored as per the frequency and methodology established in the Bi-Annual Monitoring Program within the Metrolinx <i>Vegetation Guideline</i> (2020). The Bi-Annual Monitoring Program is made up of pre-treatment and post-treatment monitoring events that will be carried out via field, aerial, and high-rail vehicle or train surveys conducted by qualified specialists.
Tree Removal Strategy	–	–	Potential for the spread of emerald ash borer, <i>Agrilus planipennis</i> (Fairmaire) associated with removal, handling and transport of ash trees.	<ul style="list-style-type: none">Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive <i>D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, Agrilus planipennis</i> (Fairmaire) (2014), as amended from time to time. To comply with this Directive, all Ash trees requiring removal, including any wood, bark or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.Ensure precautions are being taken to minimize the spread of invasive species by cleaning equipment prior to moving sites.
Natural Environment (Aquatic Environment)					
Wetlands and Waterbodies	–	–	Removal or impacts to wetland, aquatic and riparian vegetation; erosion and sedimentation to wetlands/waterbodies from construction; risk of contamination to wetlands/waterbodies as a result of spills.	<ul style="list-style-type: none">Construction activities will maintain the buffers established during the design phase to minimize potential negative impacts to wetlands and waterbodies.Shorelines or banks disturbed by construction activities will be immediately stabilized by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.An Erosion and Sediment Control Plan, in accordance with the Greater Golden Horseshoe’s Erosion and Sediment Control Guideline for Urban Construction (December 2006),	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include alteration of activities to minimize impacts and enhance mitigation measures.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<p>as amended from time to time, will be prepared prior to and implemented during construction to minimize the risk of sedimentation to the waterbody.</p> <ul style="list-style-type: none">• A Spill Prevention and Response Plan will be developed before work commences to ensure procedures and policies are in place during construction to minimize impacts to wetlands and watercourses.• In wetland areas where vernal pooling occurs, prior to dewatering isolated work areas, wildlife will be captured and relocated to suitable habitat outside of the work area.	
Fish and Fish Habitat	–	–	Potential for direct, in-water impacts to fish and fish habitat.	<ul style="list-style-type: none">• All requirements of the Fisheries Act and the ESA will be met.• In the event that in-water and/or near water construction works are required, the restricted construction activity timing windows and appropriate mitigation measures will be followed, as identified in Applicable Law and through consultation with the relevant authorities including the Conservation Authority, MECP, MNRF and Fisheries and Oceans Canada (DFO). In-water works will be planned to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.• Prior to dewatering isolated work areas, fish will be captured and relocated to suitable habitat outside of the work area under a Licence to Collect Fish for Scientific Purposes from the MNRF.	<ul style="list-style-type: none">• On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Turtles and Turtle Habitat	–	–	Potential for impacts to turtles and/or turtle habitat.	<ul style="list-style-type: none">• In addition to consideration of impacts to fish and respective construction timing windows, work within wetlands will also have to consider effects on turtles. As such, work will likely have to be scheduled outside of the turtle overwintering period which occurs from October 1st to April 30th in any given year. It is also possible that turtle surveys would need to be conducted prior to the work.	<ul style="list-style-type: none">• On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Cultural Heritage					
Built Heritage Resources and Cultural Heritage Landscapes	–	–	Indirect or direct impacts to the heritage attribute(s) of a property of known or potential Cultural Heritage Value or Interest (CHVI)	<ul style="list-style-type: none">• Based on the results of the <i>Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment – McNaughton Road Grade Separation</i>, no further work is required.	<ul style="list-style-type: none">• Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
			due to installation of new/modified infrastructure.	<ul style="list-style-type: none">All work shall be performed in accordance with Applicable Law, including but not limited to the Ontario Heritage Act, the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) <i>Standards and Guidelines for Provincial Heritage Properties: Metrolinx Identification and Evaluation (I&E) Process</i> (2014), and the forthcoming <i>Standards and Guidelines for Provincial Heritage Properties: Metrolinx Identification and Evaluation (I&E) Process</i> (2020).Follow the process and recommendations outlined in the Environmental Project Reports (EPR) under Transit Project Assessment Process (TPAP) for Proponents and their Consultants.Follow the recommendations outlined in the heritage reporting completed including the Cultural Heritage Report and/or the Heritage Impact Assessment (HIA).For known and potential properties of Cultural Heritage Value or Interest (CHVI) that will experience indirect or direct impacts and where no previous assessment has been completed or a Statement of Cultural Heritage Value (SCHV) has not been approved by Metrolinx, undertake a Cultural Heritage Evaluation Report (CHER) as per the forthcoming Metrolinx I&E Process (2020). Given the importance and location of some Cultural Heritage Resources, consultation with Municipal heritage staff and other jurisdictions will be undertaken as appropriate to determine if proposed infrastructure will be subject to specific policies within heritage districts or conservation areas (including parks).	previously completed Metrolinx and/or GO Transit EPRs and/or Environmental Study Reports (ESRs) and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, Cultural Heritage Assessment Reports (CHARs), CHERs, HIAs and Strategic Conservation Plans (SCPs).
	—	—	Direct impacts to the heritage attribute(s) of a known or potential Provincial Heritage Property (PHP) or Provincial Heritage Properties of Provincial Significance (PHPPS) due to installation of new/modified infrastructure	<ul style="list-style-type: none">Where no previous assessment has been completed or a SCHV has not been approved by Metrolinx, undertake a CHER as per the forthcoming <i>Metrolinx I&E Process</i> (2020).If warranted, complete a HIA in accordance with MHSTCI <i>Information Bulletin No. 3: Heritage Impact Assessments for Provincial Heritage Properties</i> (2017) to identify alternatives and mitigation and monitoring commitments to avoid or lessen impacts on the Cultural Heritage Value and heritage attributes of the PHP, based on the PHP's SCHV. Mitigation measures and alternatives should be consistent with the relevant conservation strategies established and adopted in	<ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.

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				<p>a SCP. A SCP will be prepared and implemented for PHPs and PHPPS.</p> <ul style="list-style-type: none">• Approval will be obtained from the MHSTCI, for any modifications to Provincially Significant properties prior to construction.• During design, the recommendations of all HIAs and Cultural Heritage Reports will be followed and adhered to during design and construction, including but not limited to strategies to protect heritage attributes.• If the project study limits change or there is a change in impact that is not captured or documented in previously completed Metrolinx and/or GO Transit EPRs and/or ESRs post EA/TPAP, and which causes any additional heritage properties to be impacted by the proposed design/infrastructure, all applicable legislation will be followed to carry out additional impact assessment work and heritage studies to identify any known or potential built heritage resources and cultural heritage landscapes, and to identify potential impacts and appropriate mitigation measures.• Given the importance and location of some Cultural Heritage Resources, consultation with Municipal heritage staff and other jurisdictions will be undertaken as appropriate to determine if proposed infrastructure will be subject to specific policies within heritage districts or conservation areas (including parks).	
	•	–	Potential indirect impacts on known or potential properties of CHVI resulting from construction activities	<ul style="list-style-type: none">• Selection of construction staging and laydown areas will follow Metrolinx's selection procedures which include avoiding heritage attributes wherever possible or effectively mitigating impacts where not possible.	<ul style="list-style-type: none">• Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
	•	–	For any additional potentially affected Cultural Heritage Resources/properties not previously identified within a	<ul style="list-style-type: none">• If the project study limits change or there is a change in impact that is not captured or documented in previously completed Metrolinx and/or GO Transit EPRs and/or ESRs post EA/TPAP, and which causes any additional heritage	<ul style="list-style-type: none">• Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per the

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			previous Metrolinx/GO Transit EA/TPAP/Other Study	properties to be impacted by the proposed design/infrastructure, all applicable legislation will be followed to carry out additional impact assessment work and heritage studies to identify any known or potential built heritage resources and cultural heritage landscapes, and to identify potential impacts and appropriate mitigation measures.	recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
	–	–	Management of Cultural Heritage Resources/Properties	<ul style="list-style-type: none">Develop and implement a SCP that addresses built heritage resources and cultural heritage landscapes according to MHSTCI Information Bulletin No. 2: Preparing Strategic Conservation Plans for Provincial Heritage Properties (2017) and as outlined in the Project Agreement.For PHPPS, approval of the MCP and SCP by MHSTCI is required.	<ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
	–	–	Demolition, removal, or relocation of a Metrolinx PHPPS (part or whole)	<ul style="list-style-type: none">In the case of properties identified as PHPPS and where the proposed project infrastructure will require demolition or removal and/or transfer out of provincial control, Metrolinx will need to obtain MHSTCI Minister’s consent.The Minister’s Consent Package will be prepared which meets MHSTCI requirements and satisfy Metrolinx’s obligations under the Ontario Heritage Act.	<ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
Archaeology					
Archaeology	<ul style="list-style-type: none">	–	Potential for the disturbance of unassessed or documented archaeological resources.	<ul style="list-style-type: none">Based on the findings of Stage 1 AA, a Stage 2 AA has been recommended for areas identified as having archaeological potential and is being undertaken by a licensed archaeologist. When complete the Stage 2 AA will be submitted to MHSCTI for review. Metrolinx and/or Proponent will confirm that any AA reports submitted to MHSTCI for review have been entered into the Ontario Public Register of Archaeological Reports prior to commencing any ground disturbing activities.Develop and implement an Archaeological Risk Management Plan that addresses any recommendations resulting from Archaeological Assessments and documents	<ul style="list-style-type: none">Performance of the work will occur within land previously subject to an Archaeological Assessment.Any site personnel responsible for carrying out or overseeing land-disturbing activities will be informed of their responsibilities in the event that an archaeological resource is encountered.Further Archaeological Assessment may identify the need for monitoring during construction.

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				<p>all protocols for the discovery of human remains and undocumented archaeological resources. The Archaeological Risk Management Plan shall be amended to incorporate any additional actions required resulting from subsequent Archaeological Assessment Reports.</p> <ul style="list-style-type: none">• All work shall be performed in accordance with Applicable Law, including but not limited to the <i>Ontario Heritage Act</i>, the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), formerly the Ministry of Tourism, Culture and Sport (MTCS) Standards and Guidelines for Consultant Archaeologists (2011), and the MHSTCI document, <i>Engaging Aboriginal Communities in Archaeology: A Draft Bulletin for Consultant Archaeologists in Ontario</i> (2011).• In the event that archaeological resources are encountered or suspected of being encountered during construction, all work will cease. The location of the findspot should be protected from impact by employing a buffer in accordance with requirements of the MHSTCI. A professionally licensed archaeologist will be consulted to complete the assessment. If resources are confirmed to possess cultural heritage value/interest then they will be reported to the MHSTCI, and further Archaeological Assessment of the resources may be required. If it is determined that there is a potential for Indigenous artifacts, Metrolinx should be contacted and Applicable Law will be followed.• If final limits of the Project footprint are altered and fall outside of the assessed study area, additional Archaeological Assessments will be conducted by a professionally licensed archaeologist prior to disturbance and prior to construction activities. This will include completing all required Archaeological Assessments resulting from the Stage 1 Archaeological Assessment (Stage 2, Stage 3 and Stage 4, as required) as early as possible, prior to the completion of design, and in advance of any ground disturbance.• For areas determined to have archaeological potential or contain archaeological resources that will be impacted by project activities, additional Archaeological Assessment will be conducted by a professionally licensed archaeologist prior to disturbance.	

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				<ul style="list-style-type: none">If human remains are encountered or suspected of being encountered during project work, all activities must cease immediately and the local police/coroner as well as the Bereavement Authority of Ontario on behalf of the Ministry of Government and Consumer Services must be contacted. Archaeological investigations of human remains will not proceed until police have confirmed the remains are not subject to forensic investigation. Once human remains have been cleared of police concern, the MHSTCI will also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. If the human remains are determined to be of Indigenous origin, Metrolinx should be contacted and all Applicable Law must be adhered to.All Archaeological Assessment findings will be shared with Indigenous Nations, as per Metrolinx’s <i>Guide to Engaging with Indigenous Communities</i> (2020).	
Archaeology	<ul style="list-style-type: none">	–	Potential to impact cemetery located in proximity to the Project footprint.	<ul style="list-style-type: none">Work in proximity to known cemeteries requires completion of an Archaeological Assessment prior to any proposed ground disturbance in accordance with the MHSTCI’s <i>Standards and Guidelines for Consultant Archaeologists</i> (2011) and the <i>Funeral, Burial, and Cremation Services Act</i> and regulations under that Act.	<ul style="list-style-type: none">Further Archaeological Assessment may identify the need for monitoring during construction.
Socio-Economic and Land Use					
Property	<ul style="list-style-type: none">	–	Property acquisition – permanent and temporary	<ul style="list-style-type: none">Specific property requirements will be confirmed during design. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures.Select staging/laydown areas in accordance with Metrolinx procedures. Staging/laydown areas should be located in areas that minimize adverse effects to sensitive receptors.	<ul style="list-style-type: none">Follow Metrolinx guidance with respect to monitoring requirements at construction staging/laydown areas.
All land uses and adjacent lands	<ul style="list-style-type: none">	–	Nuisance effects from construction activities	<ul style="list-style-type: none">Mitigation measures related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration commitment tables.An Erosion and Sediment Control Plan will be developed in accordance with the Greater Golden Horseshoe Area Conservation Authorities’ Erosion and Sediment Control Guideline for Urban Construction (December 2006), as	<ul style="list-style-type: none">When applicable, monitoring related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration commitment tables.Erosion and sediment control monitoring to be conducted as per the Project Agreement.

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				amended from time to time, that addresses sediment release to adjacent properties and roadways. <ul style="list-style-type: none">Develop a Communications Protocol in accordance with the Project Agreement, which will indicate how and when surrounding property owners and tenants will be informed of anticipated upcoming construction works, including work at night, if any.Develop a Complaints Protocol in accordance with the Project Agreement.	<ul style="list-style-type: none">Number and resolution of complaints received.
All land uses and adjacent lands	<ul style="list-style-type: none">	–	Land use and access disruption	<ul style="list-style-type: none">Provide well connected, clearly delineated, and appropriately signed walkways and cycling route options, with clearly marked detours where required.Provide temporary lighting and wayfinding signs and cues for navigation around the construction site.Develop a plan to reduce the effects of light pollution in accordance with the Project Agreement.Access to businesses during working hours will be maintained, where feasible. Where regular access cannot be maintained, alternative access and signage will be provided.	<ul style="list-style-type: none">Temporary access paths, walkways, cycling routes and fencing should be monitored.Number and resolution of complaints received.
Visual Characteristics	<ul style="list-style-type: none">	–	Visual effects from construction areas/activities	<ul style="list-style-type: none">A screened enclosure for the development site will be provided, with particular attention to the waste disposal and material storage areas.Consideration will be given to providing temporary landscaping along the borders of the construction site between site fencing/enclosure and walkways, where space allows, and where necessary.	<ul style="list-style-type: none">Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified areas
Light Pollution	<ul style="list-style-type: none">	–	Light trespass, glare and light pollution effects	<ul style="list-style-type: none">The Constructor will develop for Metrolinx review and approval an outdoor construction Light Pollution Plan that complies with all local applicable municipal by-laws and Ministry of Transportation (MTO) practices for lighting in areas near or adjacent to highways and roadways regarding outdoor lighting and incorporates industry best practices provided in ANSI/IES RP-8-18.The Constructor will perform the Works in such a way that any adverse effects of construction lighting are controlled or mitigated in such a way as to avoid unnecessary and obtrusive light with respect to adjoining residents, communities and/or businesses.	<ul style="list-style-type: none">Measure illuminance levels using an illuminance meter in accordance with ANSI/IES RP-8-18 Chapter 4.Number and resolution of complaints received.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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Traffic	•	–	Construction may result in the need for temporary road or lane closures changing access to nearby land uses	<ul style="list-style-type: none">Traffic Control and Management Plan(s) will be developed prior to construction to maintain reasonable access through work zones, to the extent possible.Access to nearby land uses will be maintained to the extent possible. Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur.Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory, and warning signs.	<ul style="list-style-type: none">Traffic impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.Cycling network impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjust as necessary during the construction period.
Public Transit	•	–	Construction may result in access restrictions to local bus routes and temporary disruptions to the existing rail corridor	<ul style="list-style-type: none">Ensure that the public is notified in advance of any potential service disruptions.Consult with local transit agencies to establish a suitable mitigation strategy to be implemented.	<ul style="list-style-type: none">Traffic impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjusted as necessary during the construction period.
Air Quality					
Air Quality	•	–	Construction related air pollution may pose risks to human health and wellbeing	<ul style="list-style-type: none">Prior to commencement of construction, develop and implement a detailed Construction Air Quality Management Plan (AQMP). The AQMP will:Demonstrate compliance with the specific air quality criteria and limits in the Metrolinx <i>Environmental Guide for Air Quality and Greenhouse Gas Emissions Assessment</i> (2019).Define the Project’s air quality impact zone and identify all sensitive receptors within this area.Assess the baseline air quality by continuous measurement of local ambient concentrations of PM2.5 and PM10 over a minimum period of one week, where large local sources of pollution, such as highways, directly affect the zone of influence of the Project.Estimate and document the predictable worst-case air quality impacts of the Project on sensitive receptors within the air quality impact zone, develop appropriate mitigation measures, demonstrate their effectiveness, and commit to their timely implementation.	<ul style="list-style-type: none">Develop and implement Weekly Air Quality Monitoring Plans that document how air quality monitoring has been conducted and compliance assessed to effectively prevent unacceptable rates of air emissions in accordance with the following guidelines:The construction related air contaminants of primary concern are in the form of particulate matter, with the principal construction related fractions of PM2.5 and PM10 - particulate matter of less than 2.5 and 10 micron in diameter, respectively. Other contaminants of concern include crystalline silica and oxides of nitrogen. The list of contaminants will be expanded with any and all air pollutants that may be produced as a result of the work.

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				<ul style="list-style-type: none">• Monitor continuously any contaminant, in addition to PM2.5 and PM10, which is predicted to exceed its relevant air quality exposure criterion during any phase of the Project and at any receptor.• Include explicit commitment to the implementation of all applicable best practices identified in the Environment Canada document, Best Practices for the <i>Reduction of Air Emissions from Construction and Demolition Activities</i> (2005).• Develop a Communications Protocol and a Complaints Protocol to respond to issues that develop during construction.	<ul style="list-style-type: none">• The criteria for PM2.5, PM10 and crystalline silica are provided in Metrolinx's <i>Environmental Guide for Air Quality and Greenhouse Gas Emissions Assessment</i> (2019). The applicable criteria for all other air contaminants of concern are to be found in the various schedules of <i>Ontario Regulation 419/05</i>.• Siting of the monitors should generally follow the guidelines provided in the Ministry of the Environment, Conservation and Parks (MECP) <i>Operations Manual for Air Quality Monitoring in Ontario</i> (2018).
Air Quality	—	•	Exhaust emissions of diesel-powered trains contribute to local and regional air pollution	<ul style="list-style-type: none">• A detailed Operations Air Quality Management Plan will be developed and implemented to limit the generation and dispersion of airborne particulate matter, NOX and other air contaminants associated with the project operations.• New traction engines or propulsion systems and new auxiliary engines and power units will meet higher emission standards (i.e., Tier 4 diesels rather than lower tier diesels).• Engines and their emission control equipment will be maintained to manufacturers' specifications.• Rebuilt diesel engines will meet Tier 4 emission standards at the time of major engine rebuilds.• Unnecessary train / engine / propulsion system idling will be minimized through technical and operational measures.• Unnecessary non-revenue equipment runs will be minimized through design and planning. <p>Mitigation Criteria:</p> <ul style="list-style-type: none">• Diesel engines used for traction and auxiliary power in locomotives and DMUs are subject to corresponding US EPA and Transport Canada heavy-duty diesel engine exhaust emission standards for CO, PM, NOx and HC	<ul style="list-style-type: none">• On-site inspections will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required.• Annually, test train propulsion and auxiliary power units, which produces exhaust emissions and ensure that they remain in compliance with applicable Transport Canada heavy-duty diesel engine exhaust emission standards for CO, PM, NOx and HC. Engine testing will include:<ul style="list-style-type: none">○ Testing at no load○ Testing at 50% load○ Testing at 100% load• Test rebuilt traction and auxiliary power diesel engines, before being placed into service, to the exhaust emission standards they are rebuilt to meet.• Develop an Air Sampling and Monitoring Plan and submit an annual report summarizing all sampling and

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					monitoring results accumulated over the preceding year.
Noise and Vibration					
Operational Noise	—	<ul style="list-style-type: none">	<p>Environmental noise may cause annoyance, disturb sleep and other activities, and affect human health.</p> <p>If operations are projected to cause a 5-dB increase or greater in the average energy equivalent noise (referred to as “Leq”) relative to the existing noise level or the MECP objective of 55 dBA for daytime and 50 dBA for night-time, whichever is higher, then mitigation is required.</p>	<p><u>Mitigation per TPAP Study Report (Noise Barriers):</u></p> <ul style="list-style-type: none">• Deploy the noise barriers defined in the Noise and Vibration Study Reports GO Rail Network Electrification Project, 2020 (RWDI).• Maintain noise barriers so as to ensure their continued effectiveness in noise reduction.• If deviating from the assessments made in the Noise and Vibration Study Reports GO Rail Network Electrification Project, 2020 (RWDI), comply with the noise impact and assessment criteria in the Metrolinx Guide for Noise and Vibration Assessment (2020). <p><u>Mitigation at the Source:</u></p> <ul style="list-style-type: none">• Deploy vehicle and track technology and related maintenance measures to maintain compliance with the noise and vibration exposure criteria defined below. <p><u>Mitigation Criteria:</u></p> <ul style="list-style-type: none">• Meet the following long-term day-time / night-time maximum noise exposure objectives at all noise sensitive receptors across the system, where background noise levels allow their realization:<ul style="list-style-type: none">○ 10-year objective: 70/60 dBA○ 20-year objective: 60/50 dBA○ 25-year objective: 55/50 dBA• Meet the airborne noise exposure criteria in the 1995 MOEE/GO Transit Draft Noise and Vibration Protocol.• Meet the ground-borne (vibration induced) noise exposure criteria in the 1995 MOEE/GO Transit Draft Noise and Vibration Protocol.	<ul style="list-style-type: none">• Measure and document the Leq (16-hour) and Leq (8-hour) noise levels, under predictable worst-case conditions, at locations where new noise mitigation barriers have been provided per the 2020 noise and vibration studies and per the Metrolinx Enhanced Mitigation Program. Outdoor measurements will be carried out in accordance with MECP requirements and US FTA Report No. 0123, Transit Noise and Vibration Impact Assessment Manual (2018). The primary purpose of these measurements is to ascertain the effectiveness of the implemented mitigation measure(s).• Assess the condition and performance of locomotives, coaches, DMUs and EMUs with respect to noise emissions as part of maintenance to ensure continued compliance with manufacturer specifications• Assess the condition and performance of the rail tracks and switches with respect to noise as part of maintenance to ensure continued compliance with manufacturer specifications

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				<ul style="list-style-type: none">Meet any additional future criteria or guidance developed by regulatory agencies, as applicable.	
Construction and Maintenance-related Noise	<ul style="list-style-type: none">	–	<p>Environmental noise may cause annoyance, disturb sleep and other activities, and affect human health.</p> <p>The severity of the noise effects resulting from construction projects varies, depending on:</p> <ul style="list-style-type: none">Scale, location and complexity of the projectConstruction methods, processes and equipment deployedTotal duration of construction near sensitive noise receptorsConstruction activity periods (days, hours, time period)Number and proximity of noise-sensitive sites to construction area(s)	<ul style="list-style-type: none">Prior to commencement of construction, develop and submit a detailed Construction Noise Management Plan.The Construction Noise Management Plan shall:<ul style="list-style-type: none">Document and commit to all measures to be taken for meeting the noise exposure limits documented in the Metrolinx Guide for Noise and Vibration Assessment (2020) at every directly exposed sensitive receptor and throughout the entire project.Determine the Zone of Influence for construction related noise based on the noise exposure limits outlined in the Metrolinx Guide for Noise and Vibration Assessment (2020) and taking into consideration the construction site, staging and laydown sites and hauling routes, each stage of the construction (including demolition), the overall construction schedule along with the schedule of each major component and associated major construction processes and equipment usage.Identify all sensitive receptors that fall within the Zone of Influence for construction related noise. Mitigation measures will be proposed for these sensitive receptors, and the effects of the proposed mitigation measures will then be evaluated using noise modelling. If results of the modelling indicate that any sensitive receptors still remain within the Zone of Influence for construction related noise, then the following shall apply:<ul style="list-style-type: none">✓ Additional mitigation is proposed and subsequently modelled until the sensitive	<p>The Construction Noise Management Plan will incorporate the following requirements related to monitoring of noise and noise related complaints:</p> <ul style="list-style-type: none">Monitor noise where the Construction Noise Management Plan indicates that noise exposure limits may be exceeded. At these locations, monitor noise continuously at each geographically distinct, active construction site with one monitor located strategically to capture the highest exposure level based on planned construction activities and the number, geographic distribution and proximity of noise sensitive receptors. Develop weekly reports describing the monitoring conducted and summarizing the data collected for the reporting period. The reports will include but not be limited to the number and duration of any incident during which any of the noise exposure limits documented in the Metrolinx Guide for Noise and Vibration Assessment (2020) were exceeded, the probable cause of each exceedance, the incident-specific measure(s) implemented, the resulting mitigated noise levels and the complaints investigation procedure.Establish a Communications Protocol and a Complaints Protocol to respond

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				<p>receptor does not fall within the Zone of Influence; or</p> <p>✓ If mitigation strategies are not viable, receptor-based mitigation will be proposed.</p> <ul style="list-style-type: none">The Construction Noise Management Plan will include the temporary/permanent noise barriers indicated in the applicable noise and vibration construction impact assessment report (2020). Where additional work sites are identified which were not assessed as part of the applicable noise and vibration construction impact assessment report (2020), or where construction activities at any given site differ from those considered in this report, conduct modelling to evaluate the need for additional noise barriers as part of the Construction Noise Management Plan.	<p>to issues that develop during construction.</p>
Operational Vibration (Trains)	–	<ul style="list-style-type: none">	<p>Vibration can cause annoyance, interfere with human activity and affect human health. It may also cause building damage.</p> <p>A change in vibration levels may occur where there are changes in track alignment, addition of new track, and changes to or addition of special track work.</p> <p>Vibration levels may also change with changes in rail vehicle specifications and operating conditions.</p>	<p><u>Mitigation per TPAP Study Report:</u></p> <ul style="list-style-type: none">Deploy mitigation recommended in the OnCorr Noise and Vibration Study Report (RWDI). Review and update the vibration assessment during the design of new infrastructure at representative receptor locations to ensure compliance with the vibration exposure criteria in the MOEE/GO Transit Draft Protocol for Noise and Vibration Assessment (1994). <p><u>Mitigation at the Source:</u></p> <ul style="list-style-type: none">Deploy vehicle and track technology and related maintenance measures to maintain compliance with the noise and vibration exposure criteria defined below. <p><u>Mitigation Criteria:</u></p> <ul style="list-style-type: none">Meet the ground-borne vibration criteria in the 1995 MOEE/GO Transit Noise and Vibration Protocol.	<ul style="list-style-type: none">Measure and document the vibration impacts, under predictable worst-case conditions, of each distinct type of GO Transit train consist operating in the corridor of interest at locations where the 2020 noise and vibration studies recommends mitigation of vibration impacts. Measurements will be carried out at or near representative vibration sensitive receptors in accordance with MECP requirements and US FTA Report No. 0123, <i>Transit Noise and Vibration Impact Assessment Manual</i> (2018). The primary purpose of these measurements is to ascertain the effectiveness of the implemented mitigation measure(s).Assess the condition and performance of locomotives, coaches, DMUs and EMUs with respect to vibration levels as part of maintenance to ensure

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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					continued compliance with manufacturer specifications <ul style="list-style-type: none">Assess the condition and performance of the rail tracks and switches with respect to vibration levels as part of maintenance to ensure continued compliance with manufacturer specifications
Construction and Maintenance-related Vibration	<ul style="list-style-type: none">	–	Exposure to vibration may result in public annoyance and complaints. Vibration may also cause damage to buildings and other structures.	<ul style="list-style-type: none">Adhere to the following vibration exposure limits:Vibration, as a human irritant, is assessed in terms of its average level. Vibration velocity should not exceed 0.14 mm/s or current conditions (whichever is higher) by more than 25%.As a threat to buildings, vibration is assessed in terms of its peak value. The Zone of Influence for vibration shall be the area where structures are expected to experience vibration peak particle velocities that exceed 5 mm/s. Vibration velocity should be limited to 8-22 mm/s, depending on vibration frequency. These limits are prescribed by the most current versions of the Toronto Municipal Code Chapter 591, Noise (2020) and Chapter 363, Vibration (2019) for typical structures (not building with special needs).Adhere to the ground-borne (vibration induced) noise exposure criteria in the US FTA Report No. 0123, Transit Noise and Vibration Impact Assessment Manual (2018).Develop and implement a detailed Construction Vibration Management Plan for Metrolinx review and approval with minimum requirements outlined below:Complete a detailed construction related vibration assessment prior to the commencement of construction that includes assessment of the vibration Zone of Influence. The Zone of Influence for vibration shall be established by using the methodology and input data provided in Section 7.2 of the US FTA Report No. 0123 (2018), <i>Transit Noise and Vibration Impact Assessment Manual</i> (2018).Complete pre-construction condition surveys for properties within the vibration Zone of Influence of the planned work to establish their condition and establish a baseline prior to any work beginning.	The Construction Vibration Management Plan will incorporate the following requirements related to monitoring of vibration and vibration related complaints: <ul style="list-style-type: none">Monitor vibration continuously at structures where the Construction Vibration Management Plan indicates that structures are deemed to be within the Zone of Influence for construction related vibration or at additional structures as requested by Metrolinx.The type of Vibration Monitoring Program that is established is based on the vibration Zone of Influence, the project location, duration, presence of night-time activity, and receptor proximity. The monitoring types include:<ul style="list-style-type: none">✓ Type 1: Monitoring continuously throughout the project (for receptors within the Zone of Influence).✓ Type 2: Monitoring during most impactful phases of the project only (for receptors outside of the Zone of Influence but within 50 m of the boundary of the construction site).✓ Type 3: Monitoring in response to complaints only (for receptors outside of the

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<ul style="list-style-type: none">Identify any heritage structures and other sensitive structures, buildings or infrastructure vulnerable to vibration damage, assess requirements and, if necessary, develop mitigation measures.Identify buildings, where vibration sensitive activities such as sound recording or medical image processing take place, assess requirements and, if necessary, develop mitigation measures.Establish a 15-metre setback distance between the construction vibration source and nearby buildings, where possible, to minimize impacts. If this is not possible, then monitor the vibration levels associated with the activity.Select construction/maintenance methods and equipment with the least vibration impacts.In the presence of persistent complaints and subject to the results of a field investigation, identify alternative vibration control measures, where reasonably available.	<p>Zone of Influence and beyond 50 m of the boundary of the construction site).</p> <ul style="list-style-type: none">Establish a Communications Protocol and a Complaints Protocol to respond to issues that develop during construction.
Contaminated Materials					
Excavated Materials	<ul style="list-style-type: none">	–	Construction operations could expose contaminated materials and/or result in the spreading of contaminated materials	<ul style="list-style-type: none">Develop a Soil and Excavated Materials Management Plan for the handling, management and disposal of all excavated material (i.e. soil, rock and waste) that is generated or encountered during the work. The plan will be overseen by a Qualified Person pursuant to <i>Ontario Regulation 153/04</i> under the <i>Environmental Protection Act</i> (QP) and will comply with <i>Ontario Regulation 406/19</i> (On-Site and Excess Soil Management – to be enacted into law on July 1, 2020), the Ministry of the Environment, Conservation and Parks (MECP), formerly the Ministry of the Environment and Climate Change (MOECC)’s <i>Management of Excess Soils: A Guide for Best Management Practices</i> (April 2019, as amended) and all Applicable Law. The plan will describe how to address the management of the excavated materials, imported materials, contaminated materials, and impacted railway ties, including handling, transportation, testing, documentation and reuse and disposal of excavated materials generated as part of the works and in accordance with applicable regulatory requirements and the Project Agreement, as applicable.	<ul style="list-style-type: none">A Soil and Excavated Material Monthly Dashboard Report will be developed by the Constructor for Metrolinx review that includes monitoring and performance data related to the management of excavated materials for the preceding month.Upon completion of the work, the Constructor will submit a Soil and Excavated Material Management Implementation Report to Metrolinx.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<ul style="list-style-type: none">Non-soil materials, including railway bedding, railway ties, or ballast materials encountered during the earthworks will also require waste classification as documented by testing where applicable to determine management and disposal requirements as per <i>Ontario Regulation 347</i> (as amended) and all Applicable Law.The Soil and Excavated Materials Management Plan will be reviewed and approved by Metrolinx prior to construction.	
Traffic and Transportation					
Traffic	<ul style="list-style-type: none">	–	Construction may result in the need for temporary road or lane closures changing access to nearby land uses	<ul style="list-style-type: none">Traffic Control and Management Plan(s) will be developed prior to construction to maintain reasonable access through work zones, to the extent possible.Access to nearby land uses will be maintained to the extent possible. Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur.Traffic signal timing optimization may be assessed/implemented to increase capacity of affected intersections and to aid in the movement of traffic and would be determined through coordination between Metrolinx and the municipality. Appropriate changes to traffic signal timings will be undertaken if required.Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory, and warning signs.	<ul style="list-style-type: none">Traffic impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.Cycling network impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjust as necessary during the construction period.
Stormwater Management					
Potential Impacts and Proposed Mitigation Measures for Stormwater and Site Drainage	<ul style="list-style-type: none">	–	<ul style="list-style-type: none">The proposed construction activities pose a potential impact due to sediment transport into adjacent natural areas including watercourses, wetlands and municipal drainage infrastructure.The proposed works may result in increases to impervious areas, with	<ul style="list-style-type: none">Prepare and implement a Drainage and Stormwater Report, an Erosion and Sediment Control Plan, detailed drainage design and erosion and sediment control drawings in accordance with the Ministry of the Environment, Conservation and Parks (MECP) <i>Stormwater Management Planning and Design Manual</i> (2003), the Greater Golden Horseshoe's <i>Erosion and Sediment Control Guideline for Urban Construction</i> (December, 2006), as amended from time to time, and the guidelines and regulatory requirements of the Conservation Authority having jurisdiction.	<ul style="list-style-type: none">Turbidity levels within discharges from sites to be monitored visually. Turbidity levels will be monitored upstream and downstream of sites at watercourse crossings or adjacent to watercourses. Turbidity levels within discharges from sites and within receiving storm sewers will also be monitored visually to determine potential impacts from construction.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
			<p>potential effects to water quantity and quality.</p> <ul style="list-style-type: none">In addition to the increases in impervious coverage, there may be alterations to the local drainage system, both overland (major drainage system) and storm sewers (minor drainage system).	<ul style="list-style-type: none">The overall stormwater quality and quantity control strategy will be developed in accordance with all relevant municipal, provincial and federal requirements, as amended, as well as the requirements of Conservation Authorities having jurisdiction.A detailed assessment of proposed ditches along the rail corridor is required to ensure adequate drainage conveyance in accordance with municipal requirements and American Railway Engineering and Maintenance-of-Way Association (AREMA) <i>Manual for Railway Engineering</i> (2019).Infiltration requirements for municipalities will be determined as per the design guidelines and standards.To offset the potential impacts to wetlands, the grades and drainage system on the periphery of the grade separation may need to be designed to result in minor local drainage diversions to the wetland features. An annual water budget for existing, future (without mitigation) and future (with mitigation) would have to be conducted. Input from a terrestrial biologist is required to review the annual water budget variations for existing and future conditions.Develop and implement a Spill Prevention and Response Plan in accordance with the Project Agreement.	<ul style="list-style-type: none">Grab samples for existing watercourses and/or wetlands, when runoff from the site discharges to a watercourse and/or wetland will be conducted for pre-construction, during construction, and post construction conditions until the site is considered stabilized. Grab samples for watercourses and wetlands will be taken for non-precipitation event and for precipitation events to obtain a reasonable understanding of the turbidity levels. Post-construction monitoring of wetland areas may be required depending on input from Conservation Authorities.Monitoring will be conducted for potential oil spills and containment of spills to be conducted as per provincial requirements.Functionality of stormwater quantity controls including peak flows and water levels for storm events within the design range. Monitoring would require local rainfall data.Infiltration targets measured by flow monitoring on infiltrative Low Impact Development (LID) Best Management Practices (BMPs).Stormwater quality measures will be assessed to provide a minimum 80% Total Suspended Solids (TSS) removal as per the MECP <i>Stormwater Management Planning and Design Manual</i> (2003). Where applicable, additional water quality requirements as per the LSRCA's Lake Simcoe Phosphorus Offsetting Program (LSPOP).

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
					<ul style="list-style-type: none">Within LSRCA’s jurisdiction, Phosphorus levels immediately downstream of sites will be monitored and compared to baseline conditions determined prior to construction.
Hydrogeology					
Groundwater	<ul style="list-style-type: none">	–	Construction operations could expose groundwater and associated contamination	<ul style="list-style-type: none">Develop a Groundwater Management and Dewatering Plan to guide the handling, management, and disposal of groundwater encountered during the works. The Groundwater Management and Dewatering Plan will be overseen by a QP and will comply with <i>Ontario Regulations 406/19</i> (On-Site and Excess Soil Management – to be enacted into law on July 1, 2020), <i>64/16</i> and <i>387/04</i>, as amended under the <i>Ontario Water Resources Act</i>.The Groundwater Management and Dewatering Plan will describe the handling, transfer, testing, monitoring, disposal of groundwater generated as part of the works and in accordance with applicable regulatory requirements and the Project Agreement. The Groundwater Management and Dewatering Plan will outline general groundwater monitoring considerations during the works and provide guidance for groundwater monitoring following the works where considered applicable.The Groundwater Management and Dewatering Plan will describe the anticipated groundwater quantity and dewatering Zone of Influence that will be encountered during the works, and if approvals are needed for the water taking, such as a Permit to Take Water (PTTW) or an Environmental Activity Sector Registry (EASR) from the MECP.The Groundwater Management and Dewatering Plan will describe the storage, transfer, and disposal and or treatment of the groundwater collected during the works, and approvals for the water disposal, and/or treatment if applicable, based on the quantity and quality.The Groundwater Management and Dewatering Plan will be reviewed and approved by Metrolinx prior to construction.	<ul style="list-style-type: none">A Groundwater Management Monthly Dashboard Report will be developed by the Constructor for Metrolinx review to document performance monitoring data/results and any corrective actions implemented during the previous month.Upon completion of the work, the Constructor will submit a Groundwater Management and Dewatering Implementation Report to Metrolinx.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Utilities					
Utilities Planning and Construction	●	—	Utility serviceability effects due to design requirements and construction	<ul style="list-style-type: none">• Develop and implement a detailed Utility Infrastructure Relocation Plan that identifies all utilities anticipated to be impacted by the construction works, all relevant utility agencies and authorities, and outlines the approach to the utility relocation process. The Utility Infrastructure Relocation Plan will be developed in accordance with the Project Agreement.• Additional surveys shall be performed prior to construction to field locate and verify the existing utilities within the project area and document their condition.• Perform all work identified in the Utility Infrastructure Relocation Plan to protect, support, safeguard, remove, and relocate all Utility Infrastructure.• Obtain permits and consents from and with all Utility Companies with respect to the design, construction, installation, servicing, operation, repair, preservation, relocation, and or commissioning of Utility Infrastructure.• Ensure minimizing impact to the Train Service Plans and to continuity of service and disruption to property owners and customers of the Utility Companies to the satisfaction of the Utility Companies and Metrolinx.	<ul style="list-style-type: none">• Maintain regular communication and coordination through issuance of regular progress reports and updates to applicable utility agencies.• Record all installation tolerances and how they are to be monitored.• Perform inspection and testing to ensure successful utility relocation and safe and efficient installation.• In the event of potential impacts to critical utilities, instrumentation and monitoring shall be carried out to protect the critical utilities and structures and reduce risks of damage due to construction activities.
Utilities Post-Construction Phase	—	●	Future Utility Maintainability	<ul style="list-style-type: none">• Where new utility crossings are proposed, application for a new utility crossing agreement will be required. Where modifications to an existing utility crossing takes place, updates to an existing utility crossing will be needed.• Post- construction inspections of the new utility infrastructure shall be undertaken for applicable works upon completion of the construction works to document condition.• Obtain as-built plans of the relocated infrastructure from utility agencies per as-built preparation standards <i>CSA S250-11 – Mapping of Underground Utility Infrastructure</i> (2011), as amended from time to time.	<ul style="list-style-type: none">• Develop and implement tracking system for as-built deliverables.

Consultation Process

Metrolinx consulted with government agencies, municipalities, Indigenous Nations, Elected Officials, Regulatory Agency Staff and members of the public (including local residents, businesses, and interested groups) through various communication methods throughout the Addendum process.

Three Public Meetings were held for the general GO Expansion program, two of which presented information about the McNaughton Road Grade Separation Project. Metrolinx hosted an in-person Public Meeting in late February 2020 to share general information about the project and receive community input. An online Public Meeting was held online from August 18 to September 1, 2020 for the general GO Expansion Program. Participants were able to read about the McNaughton Road Grade Separation project and ask Metrolinx general questions, but there was no new information presented. A third round of consultation was held virtually from November 27 to December 11, 2020 to present draft environmental and technical study findings.

In addition to the Public Meetings, Technical Advisory Committee Meetings (TACs) were also held with the City of Vaughan and York Region on several occasions.

A summary of consultation activities is provided in detail in Section 5 of this EPR Addendum.

Commitments to Future Work

As part of the Addendum process, *O.Reg. 231/08* requires future commitments, including required permits and approvals to be developed to facilitate project implementation in accordance with project-specific mitigation measures and monitoring activities described in this EPR Addendum. The purpose of the commitments is to ensure that the project is implemented in a manner that does not result in negative impact on matters of provincial interest related to the natural environment or to cultural heritage value or interest, or on constitutionally protected Aboriginal and Treaty Rights.

Following the completion of the TPAP and Addendum, further studies or consultation may be required, resulting in a refinement of the results presented in the EPR Addendum. If refinements lead to changes to the project that are inconsistent with the EPR or Addendum, these will be documented in another addendum to the EPR. Significant changes to the EPR or Addendum will be accompanied by a notification of the change to the project stakeholders (government agencies, elected officials, members of the public) and Indigenous Nations, as required in the regulation.

All applicable permits, approvals, and monitoring requirements under environmental laws will be reviewed, confirmed, and obtained by Metrolinx prior to the construction of the project.

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List of acronyms and abbreviations

AAQC	Ambient Air Quality Criteria
AEC	Area of Environmental Concern
APEC	Area of Potential Environmental Concern
AQEA	Air Quality Effects Assessment
ASL	Above Sea Level
BHR	Built Heritage Resource
BMP	Best Management Practices
BRCE	Barrie Rail Corridor Expansion
CHER	Cultural Heritage Evaluation Report
CHL	Cultural Heritage Landscape
CHR	Cultural Heritage Resource
CHVI	Cultural Heritage Value or Interest
COPC	Contaminant of Potential Concern
CSA	Canadian Standards Association
EA	Environmental Assessment
EAA	Environmental Assessment Act
ESAR	Environmental Activity and Sector Registry
EPR	Environmental Project Report
ESA	Environmental Site Assessment
GGH	Greater Golden Horseshoe
ha	Hectares
HCM	Highway Capacity Manual
HEP	Head End Power
HIA	Heritage Impact Assessment
LOS	Level of Service
LSA	Local Study Area

MECP	Ministry of the Environment, Conservation, and Parks
m	Metres
mm	Millimetre
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MMAH	Ministry of Municipal Affairs and Housing
MOECC	Ministry of the Environment and Climate Change
MUP	Multi-Use Path
NAPS	National Air Pollution Surveillance
NZOI	Noise Zone of Influence
OCP	Organochlorine Pesticide
O.Reg.	Ontario Regulation
PAH	Polynuclear Aromatic Hydrocarbon
PHC	Petroleum Hydrocarbon
PPV	Peak Particle Velocity
PTTW	Permit to Take Water
RER	Regional Express Rail
RMS	Root Mean Square
ROW	Right-of-Way
TIA	Traffic Impact Assessment
TLI	Temporary Limited Interests
TPAP	Transit Project Assessment Process
TRCA	Toronto Region Conservation Authority
VOC	Volatile Organic Compound
VZOI	Vibration Zone of Influence
YRT	York Region Transit
ZOI	Zone of Influence

1.0 Introduction

Metrolinx is completing a Transit Project Assessment Process (TPAP) Addenda under *Ontario Regulation (O. Reg.) 231/08, Transit Project and Metrolinx Undertakings*. Metrolinx is expanding its services as part of the GO Expansion Program, which will provide both increased train frequency and availability across its seven rail corridors. The GO Expansion Program is an investment program that will transform GO Rail into a comprehensive regional rapid transit network that provides the expanded mobility the Greater Toronto and Hamilton Area (GTHA) needs to accommodate growth and maintain a high quality of life and prosperous economy. The long-term goal and vision of the GO Expansion Program is to provide 15-minute two-way all-day service. With major investment in GO Rail infrastructure, Metrolinx will be quadrupling GO Rail service and nearly doubling GO Rail ridership. By 2055, annual ridership is expected to exceed 200 million, compared to 105 million without GO Expansion (GO Expansion Full Business Case: Metrolinx, November 2018a). Ongoing Metrolinx initiatives are shown in Figure 1.1-1. As part of this program, Metrolinx is increasing service on the Barrie Rail Corridor. System upgrades are being planned along this rail corridor, including the modifications of the infrastructure necessary to support the introduction of additional trains to meet these needs.

1.1 Barrie Rail Corridor Overview

The Barrie Rail Corridor is owned by Metrolinx who operates a commuter (passenger) rail service along the Newmarket Subdivision between Union Station (Mile 0.00) and the Allandale Waterfront GO Station (Mile 63.00). Oriented generally in a north / south direction, the existing rail corridor is primarily a single track, approximately 63 miles in length and includes 11 stations (excluding Union Station). The corridor runs through eleven municipalities including from south to north the City of Toronto, Regional Municipality of York (hereafter referred to as York Region), City of Vaughan, Township of King, Town of Aurora, Town of Newmarket, Town of East Gwillimbury, County of Simcoe, Town of Bradford West Gwillimbury, Town of Innisfil, and the City of Barrie.

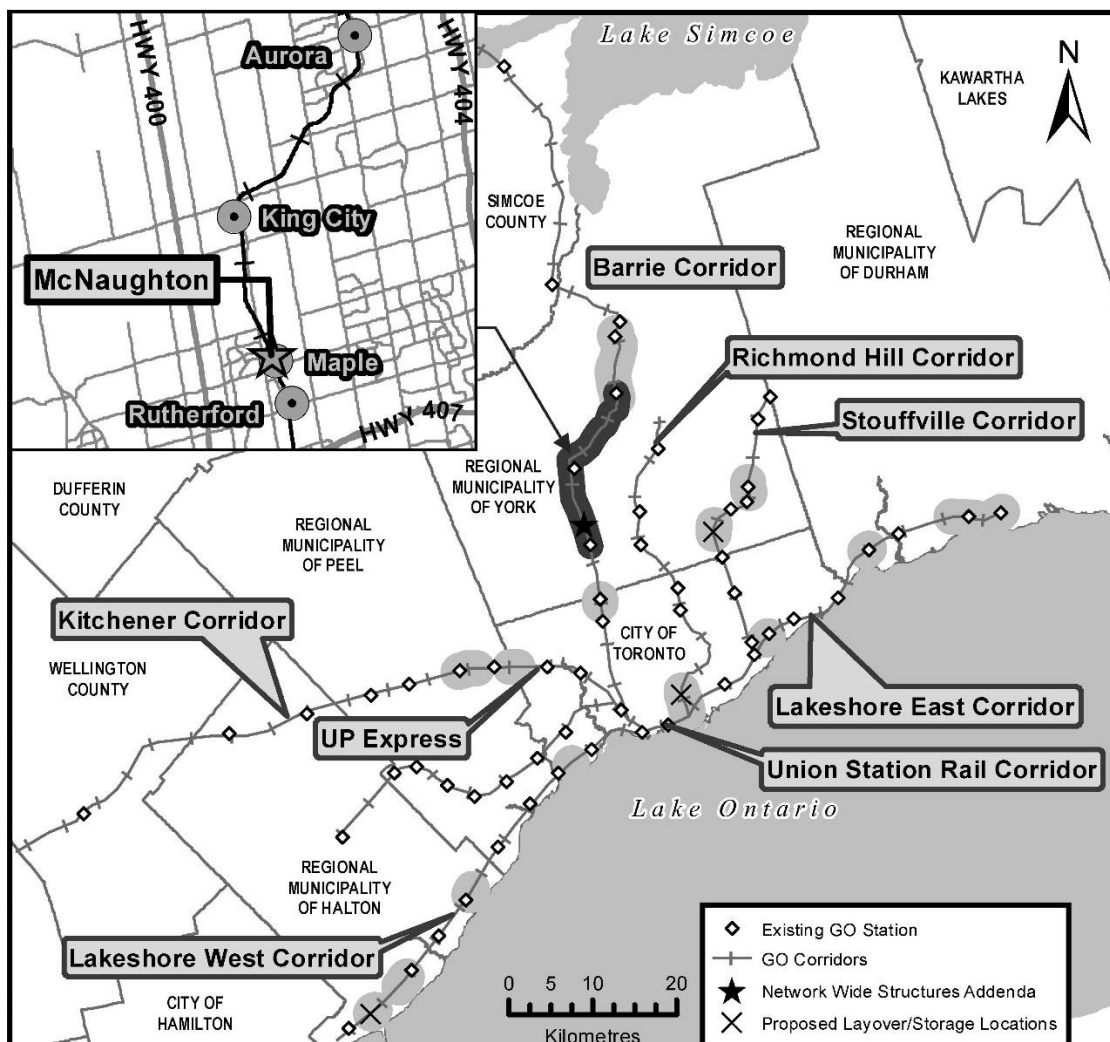
As outlined in the *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Environmental Project Report* (BRCE EPR) (Hatch 2017a), the vision of the GO Expansion Program is to provide all-day, two-way service every 15 minutes to the Aurora GO Station as well as regular peak, midday, evening, and weekend train service to the Allandale Waterfront GO Station. To support this vision, the Barrie Rail Corridor Expansion (BRCE) Project comprised several infrastructure improvements along the Barrie Rail Corridor, including:

- A second track between Lansdowne Avenue in Toronto and Allandale Waterfront GO Station in Barrie;
- Upgrades at existing GO stations along the Barrie Rail Corridor, including in the Town of Aurora;
- Upgrades to existing structures within the Barrie Rail Corridor including bridges and culverts; and

- A new train layover facility within the Town of Bradford West Gwillimbury for overnight storage of trains.

In 2017, Metrolinx submitted the *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Environmental Project Report* (BRCE EPR) (Hatch 2017a) to the Ministry of the Environment, Conservation and Parks (MECP), formerly Ministry of the Environment and Climate Change (MOECC), to meet the requirements stipulated in the Transit Project Assessment Process under *O.Reg. 231/08, Transit Projects and Metrolinx Undertakings*. The TPAP process was used to assess the potential environmental impacts associated with the transit project, identify mitigation measures for those impacts, and to develop a monitoring program to verify the effectiveness of the proposed mitigation measures. On October 5th, 2017, the MECP issued a Notice to Proceed to Metrolinx for the Barrie Rail Corridor Expansion Project. Subsequently, a Statement of Completion was submitted by Metrolinx to MECP that completed the TPAP.

Figure 1.1-1: Ongoing Metrolinx Initiatives



1.2 The Changes to the Project – McNaughton Road Grade Separation

In 2015, Metrolinx completed the System-Wide Grade Separation Study that identified the need to reduce the number of road and rail at-grade crossings along the corridors to enhance on-time performance, operational flexibility / reliability, and reduce traffic conflicts. Through the Network Wide Structures Project, several grade separations and crossing improvements have been proposed along various rail corridors, and this includes the McNaughton Road Grade Separation on the Barrie Rail Corridor (see Figure 1.1-1). This project represents changes that were not examined in the previously approved BRCE EPR (Hatch 2017a) and requires an evaluation under the TPAP (see Section 1.3) to determine whether they require a significant addendum.

1.2.1 Description and Reason for the Change

The McNaughton Road Grade Separation is one component of the Network Wide Structures Project that will support the objectives of the GO Expansion Program. McNaughton Road is a four (4) lane arterial road in the City of Vaughan with traffic travelling in both east and west directions. Currently, GO Transit operates one (1) track that crosses McNaughton Road at grade immediately north of the Maple GO Station as part of the Barrie Rail Corridor which provides train service between Barrie and Toronto. The Metrolink system-wide level crossings evaluation recommended grade separation at McNaughton Road for on-time performance and operational flexibility / reliability (RER Level Crossings Strategy: Metrolinx, February 17, 2017).

The proposed design under study is a four-lane road overpass to accommodate rail tracks. This proposed design represents a significant change to the BRCE EPR and warrants a Significant Addendum to the EPR based on the requirements of the TPAP (*O.Reg 231/08*).

The scope of work to be completed includes, but is not limited to:

- Construction of a road overpass (elevated roadway) with two (2) vehicular traffic lanes in each direction;
- Construction of bridge structures to accommodate rail tracks;
- Construction of a multi-use pathway on the south side of the road overpass;
- Construction of a potential multi-use pathway on the north side of the road overpass (subject to municipal discussions);
- Construction of a multi-use pathway at grade on south side of McNaughton Road to provide connection to Maple GO Station;
- Excavation and utilities relocation to accommodate the grade separation;
- Construction will be staged either through installation of a temporary detour road on an alignment north of the existing roadway, or through a temporary road closure and traffic diversion to other existing roads / intersections;
- Closure of Maple GO Station parking lot access from McNaughton Road;
- Installation of Electrification Protection Barriers; and

- Grading and construction of retaining walls and a landscaped embankment south of the grade separation to soften visual impact.

1.2.2 Assessment of Significance of Proposed Change

A change that is inconsistent with the EPR is generally defined as one for which the environmental impacts have not been accounted for in the EPR. The proposed McNaughton Road Grade Separation is considered inconsistent with the approved BRCE EPR, completed in 2017, as the impacts of this change (proposed McNaughton Road Grade Separation) on the environment were not considered in the EPR.

In Accordance with Section 15 of *O.Reg. 231/08*, Metrolinx has assessed the significance of the change (Wood 2019a). The change to the project is considered significant for the following reasons:

- The proposed grade separation is likely to change the configuration of the road profile and represents a major change to the BRCE EPR design that will result in potential new impacts and the need for additional mitigation measures; and
- The environmental effects of the change (proposed McNaughton Road Grade Separation) are not considered in the approved BRCE EPR.

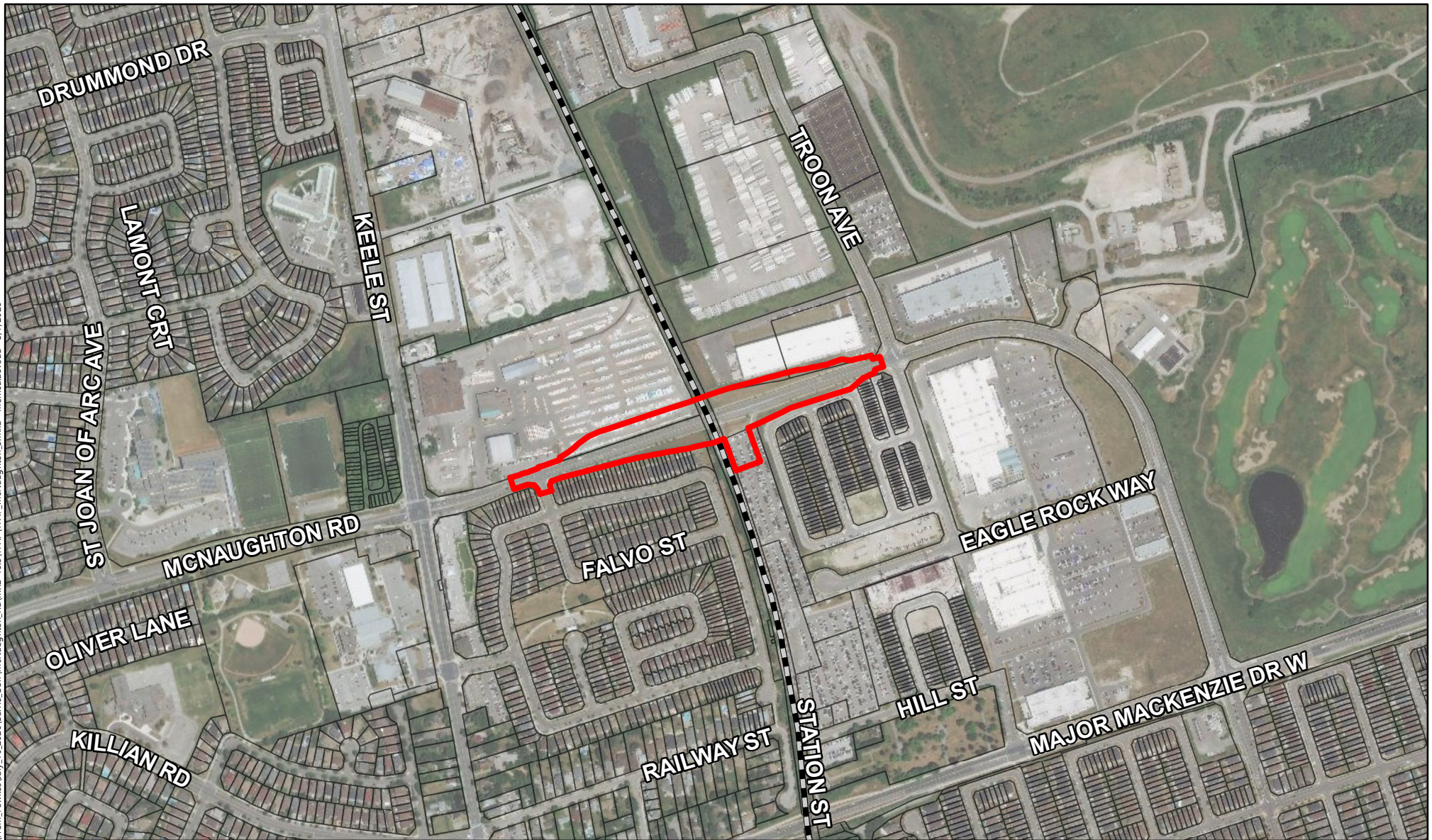
1.2.3 Studies Prepared in Support of the BRCE EPR Addendum

The following lists the studies completed to support the McNaughton Road Grade Separation:


- Natural Environment Report;
- Tree Inventory Plan and Data Summary Table;
- Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment;
- Stage 1 Archaeological Assessment;
- Socio-Economic and Land Use Characteristics Assessment;
- Construction Related Air Quality Effects Assessment;
- Regional Air Quality Study;
- Construction Related Noise and Vibration Impact Assessment;
- Noise and Vibration Study – Barrie Rail Corridor;
- Phase One Environmental Site Assessment; and
- Traffic Impact Assessment.


1.2.4 Study Area – McNaughton Road Grade Separation


The McNaughton Road Grade Separation study area is located within the City of Vaughan, in York Region. Figure 1.2.-2 shows the McNaughton Road Grade Separation study area.



LEGEND

 **Project Footprint (Approximate)**


 **Barrie Rail Corridor**

 **Property Boundary**

NOTES:
- Imagery Courtesy of ESRI
ArcGIS Online Basemap
service. Scene date is
July 2018.
- All other data acquired
through various Open Source
Online Open Data Catalogues

STRUCTURE
LOC. **McNAUGHTON RD**

Datum: NAD83 CSRS
Projection: MTM 10




PROJECT N°: TPB195112

SCALE: 1:8,000

FIGURE: 1.2.1-1

DATE: Aug 2020

 **wood.**

**NETWORK WIDE
STRUCTURES PROJECT**

**McNaughton Road
Grade Separation Study Area**

Path: P:\2019\Projects_Other\TPB195112_Oncor Metrolinx\GIS\From_Fewkes\July_10_2020\Barrie_Corr\McNaughton_Rd\MXD_103\TPAP\TPAP_McNaughton_3.mxd - monica.deveau - 8/7/2020

1.3 TPAP Addendum Process

1.3.1 Project Proponent

The Ontario *Environmental Assessment Act* (EAA) defines “proponent” as a person who:

- Carries out or proposes to carry out an undertaking; or
- Is the owner or person having charge, management, or control of an undertaking.

For the purpose of this EPR Addendum, Metrolinx is the proponent of the McNaughton Road Grade Separation.

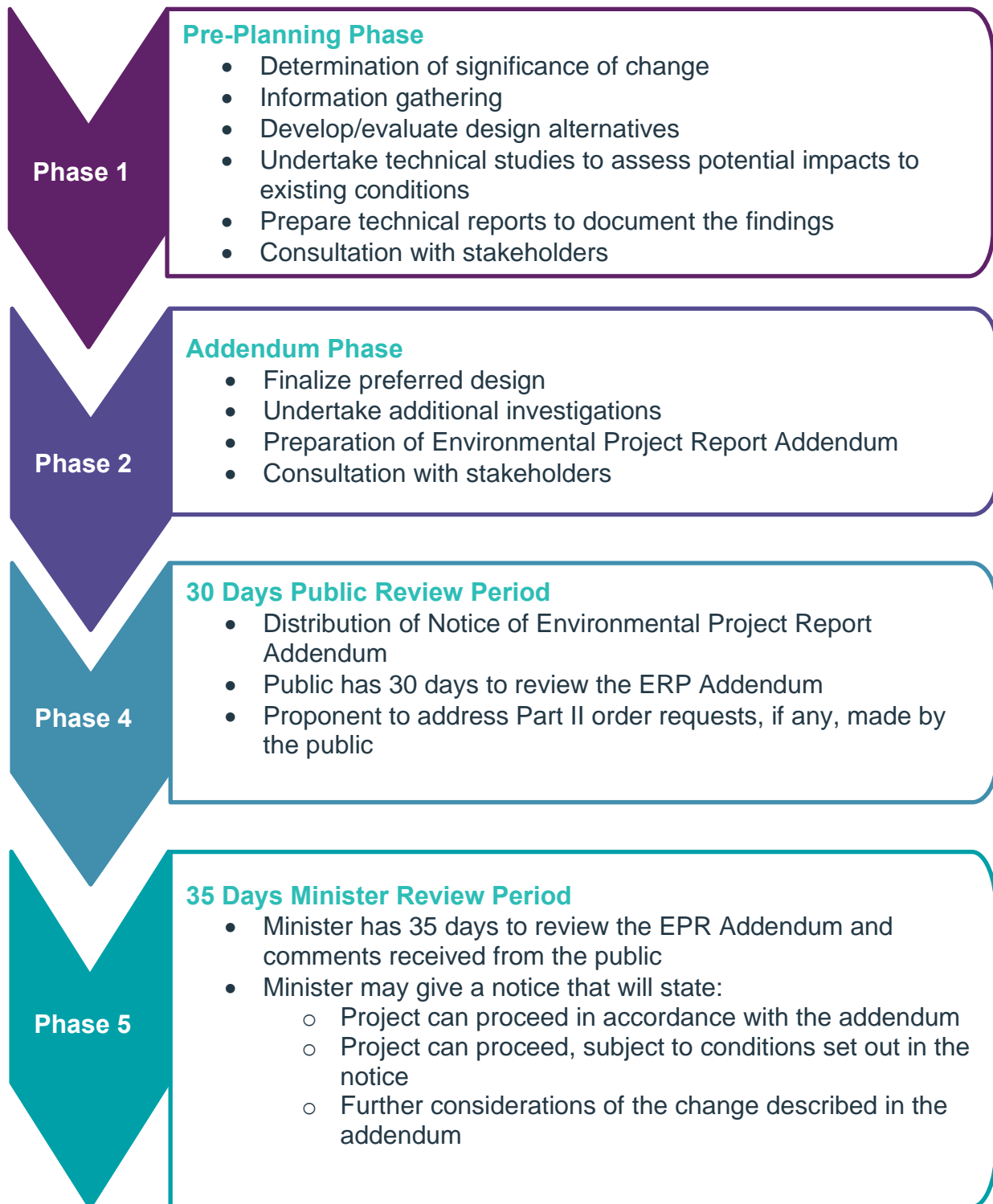
1.3.2 Addendum Process

The BRCE EPR Addendum is being carried out under Section 15 of *O.Reg. 231/08*, which includes provisions for proponents to make changes to a transit project after the Statement of Completion is submitted to the MECP.

Under *O.Reg 231/08*, if, after submitting a Statement of Completion of the Transit Project Assessment Process, the proponent wishes to make a change to the transit project that is inconsistent with the environmental project report referred to in that statement, the proponent shall prepare an addendum to the environmental project report. The following outline and Figure 1.3-1 describe the key steps in the EPR Addendum process Under TPAP:

- Prepare an assessment of the impacts the proposed change may have on the environment;
- Prepare and distribute an Addendum report;
- Prepare and distribute a Notice of Environmental Project Report Addendum; and
- Conduct a final review by the public and stakeholders prior to proceeding with the proposed Addendum.

Figure 1.3-1: EPR Addendum Process under TPAP



1.3.2.1 Contents of EPR Addendum Relative to Section 15 of O.Reg. 231/08

In accordance with Section 15(1) of *O.Reg. 231/08*, for all changes to the BRCE project that are inconsistent with the original EPR approved in 2017, this Addendum includes the following information:

- A description of the change (Section 1.2);
- Reasons for the change (Section 1.2);
- An assessment and evaluation of any impacts that the change might have on the environment (Section 4);
- A description of any proposed mitigation measures for mitigating any negative effects that the change might have on the environment (Section 4); and
- A statement of whether the proponent is of the opinion that the proposed change is significant (or not), and the reasons for the opinion (Section 1.2).

1.3.2.2 EPR Addendum Review and Approval Process

After the completion of the EPR Addendum and filing a Notice of Environmental Project Report Addendum, the report is made available to the public, regulatory agencies, Indigenous Nations, and any other person who the proponent thinks may be interested in the change to the transit project, for a 30-day review period in accordance with *O.Reg. 231/08*.

During the 30-day public review period, should objections be received, the Minister of the Environment, Conservation and Parks has 35 days to consider any objections regarding negative impacts of the transit project; during which time the Ministry would provide notice to the project proponents. A notice from the Minister will state either that “the project can proceed”, “the project can proceed subject to conditions”, or “the proponent must conduct additional work prior to proceeding”.

1.4 Planning Context

A number of provincial and regional planning policies, and documents were reviewed that helped to inform this assessment and the design considerations for the proposed project.

1.4.1 Provincial

Provincial Policy Statement (2020)

The *Provincial Policy Statement (2020)* (PPS) issued by the Ministry of Municipal Affairs and Housing (MMAH) calls for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. The PPS (MMAH 2020a) supports improved land use planning and management, which contributes to a more effective and efficient land use planning system.

This Project is consistent with the PPS as it supports transportation choices that increase the use of active transportation and public transit. The PPS emphasizes the need for a safe transportation system. Through the introduction of a grade separation at

McNaughton Road, and constructing related infrastructure, the Project will facilitate active transportation and encourage community connectivity. The proposed grade separation will eventually lead to two-way, all-day service, which will improve public transit in southern Ontario and thus increase ridership. The proposed grade separation will improve efficiency, and reliability of the GO Transit service.

A Place to Grow: The Growth Plan for the Greater Golden Horseshoe (2020)

The Growth Plan for the Greater Golden Horseshoe was established in 2017 under the *Places to Grow Act, 2005* and identifies growth areas and growth targets, including the promotion of intensification. The BRCE EPR discussed the 2006 Growth Plan for the Greater Golden Horseshoe Plan (Growth Plan), however, this plan has been updated (most recently in 2020).

The following key policies from the Growth Plan are relevant to this project:

Applying the policies of this Plan will support the achievement of complete communities that expand convenient access to a range of transportation options, including options for the safe, comfortable and convenient use of active transportation (Policy 2.2.1.4 (d)(i)).

All major transit station areas will be planned and designed to be transit supportive and to achieve multimodal access to stations and connections to nearby major trip generators (Policy 2.2.4.8).

Municipalities will ensure that active transportation networks are comprehensive and integrated into transportation planning to provide:

- a) safe, comfortable travel for pedestrians, bicyclists, and other users of active transportation; and*
- b) continuous linkages between strategic growth areas, adjacent neighbourhoods, major trip generators, and transit stations, including dedicated lane space for bicyclists on the major street network, or other safe and convenient alternatives (Policy 3.2.3.4).*

A Made-in-Ontario Environment Plan (2018)

The *A Made-in-Ontario Environment Plan (2018)* issued by the Ministry of the Environment, Conservation and Parks, replacing the *Ontario Climate Action Plan (2016)*, calls for various action items to preserve and protect land, air and water, while reducing waste, litter, and greenhouse gas emissions. The Plan aims to protect species at risk, conserve and manage parks and greenspaces, and determine a plan to address climate change concerns.

The Oak Ridges Moraine Conservation Plan (2017)

The *Oak Ridges Moraine Conservation Act (2001)* provides the framework that led to the development of the *Oak Ridges Moraine Conservation Plan (ORMCP; MMAH 2017b)*. The purpose of the ORMCP is to manage 190,000 hectares of land and water within the Oak Ridges Moraine by providing land use and resource management guidance, as well as identifying key natural heritage features (e.g., wetlands, fish habitat, significant wildlife habitat) as provincially significant.

The ORMCP prohibits development within identified key natural heritage features, apart from “transportation, infrastructure, and utilities” (Section 22(2); MMAH 2017b). Exceptions are further defined as transit lines, railways and related facilities and right of way required for these facilities (Section 41). Furthermore, Section 41 prohibits transportation infrastructure development in ‘Natural Core Areas’ or ‘Natural Linkage Areas’ unless it has been demonstrated that no reasonable project alternatives and mitigation strategies (design, construction and maintenance) can be suitably developed to minimize effects on these features to the greatest extent possible (MMAH 2017b).

The Greenbelt Plan (2017)

The *Greenbelt Plan (2017)* is an overarching document that serves to protect the Greenbelt area from urbanization that would cause harm to its agricultural and ecological features (MMAH 2017a). The *Greenbelt Plan* is supported by The Growth Plan (2019), *Niagara Escarpment Plan (2017)* and based on the principles found in the ORMCP. Under the *Greenbelt Plan* (under Ontario Regulation 59/05), “...infrastructure improvements are permitted if it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing infrastructure connections among urban growth centres” (MMAH 2017a).

1.4.2 Regional

The 2041 Regional Transportation Plan (2018)

The *2041 Regional Transportation Plan* is the second transportation plan for the Greater Toronto and Hamilton Area (GTHA) and expands on the goals outlined in The Big Move, which resulted in the \$30 billion investment in rapid transit. It provides an outline of an integrated approach from different stakeholders such as government, transit agencies, businesses, civic organization, and the public to help create an efficient system. The goal of the *2041 Regional Transportation Plan* is to ensure a higher quality of life and a more prosperous and competitive economy, while protecting the environment (Metrolinx 2018b). The *2041 Regional Transportation Plan* outlines five main strategies:

- Complete the delivery of current regional transit projects;
- Connect more of the region with frequent rapid transit;
- Optimize the transportation system;
- Integrate transportation and land use; and
- Prepare for an uncertain future.

The Big Move resulted in the completion of nine major transit projects and 14 other projects, including the Barrie Two-Way, All-Day GO Service (Aurora to Allandale Waterfront GO) and Barrie 15-min GO Service (Union Station to Aurora GO), that are currently in engineering design phase or under construction and as listed as “In Delivery” transit projects in the 2041 Regional Transportation Plan. Under the current *2041 Regional Transportation Plan*, the remaining 14 projects from the Big Move and an

additional 13 projects, which are currently in the planning and design stage, will be completed (Metrolinx 2018a).

The GO Expansion Full Business Case (2018)

Metrolinx is transforming the GO Transit system by introducing more services and a better rail network and plans to quadruple GO rail service from 1,500 trips a week in 2015 to 6,000 within the next ten years. Metrolinx completed a full business case for the GO Expansion Program to illustrate the proposed investment program, its benefits and costs, and core requirements to successfully implement the program to decision makers, the public, and funding partners (Metrolinx 2018a). Metrolinx is committed to providing new travel choices for commuters, significantly increasing transit ridership, cutting journey times and helping manage congestion across the GTHA. As part of these commitments, Metrolinx is planning for expanded service on the Barrie Rail Corridor and in order to support the increase train service, rail improvements to the corridor are required, including the proposed grade separations.

Metrolinx Adjacent Development Guidelines (2013)

The Metrolinx Adjacent Development Guidelines (2013) provide guidance on mandatory measures for transit development near residential areas and recommended transit studies, such as noise and vibration impacts. The purpose of this document is to ensure safe and reliable transit services and to assist municipal land development approval processes in making land use decisions in areas close to GO Transit operated railway corridors.

The Big Move (2008, updated in 2013)

Metrolinx developed the first transportation plan for the GTHA in 2008. The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area (The Big Move; 2008, updated 2013) responded to the projects proposed in MoveOntario 2020. The goal of the plan was to reduce traffic congestion and increase public transportation use across Ontario, specifically in southern Ontario (Metrolinx 2013).

The plan forecasted the Barrie rail corridor to experience an increased demand for rail service. Thus, this corridor was identified as a major project under the 'Next Wave' projects outlined in the plan. The Big Move outlined 13 goals and 37 objectives. The relevant objectives supporting the development of the McNaughton Road Grade Separation are:

- Objective 4-7: "Improve public transit efficiency and reliability through more frequent, faster service and ensuring the infrastructure is not operating at above capacity"; and
- Objective 26: "Reduce delays and provide further transit connections in order to provide a seamless system" (Metrolinx 2013).

York Region Official Plan (2010)

The *York Region Official Plan (2010)* directs growth in the region and guides economic and environmental decisions. The following sections are applicable to the Project:

- Section 3.2.3 (Healthy Communities): “To reduce vehicle emissions by ensuring that communities are designed to prioritize pedestrians and cyclists, reduce single occupancy automobile use, and support public transit and Transportation Demand Management initiatives”.
- Section 7.2 (Transit): “An expanded, comprehensive and interconnected public transit system is required, both to reduce vehicle traffic and to provide access to jobs and services. A well-integrated public transit system in York Region is essential to enhancing the quality of life for residents and workers.”
- Section 7.2.37 (Servicing our Population): “To work with...Metrolinx...to encourage the Province and the Federal Government to provide sustained capital and operational funding and tools to support transit” (Regional Municipality of York 2010).

1.4.3 Municipal

City of Vaughan Official Plan (2010)

The *City of Vaughan Official Plan (2010)* helps guide development and growth within Vaughan in the short- and long-term. The Official Plan is based on eight (8) goals:

- Goal 1: Strong and Diverse Communities;
- Goal 2: A Robust and Prominent Countryside;
- Goal 3: A Diverse Economy;
- Goal 4: A Vibrant and Thriving Downtown;
- Goal 5: Moving Around without a Car;
- Goal 6: Design Excellence and Memorable Places;
- Goal 7: A Green and Sustainable City; and
- Goal 8: Directing Growth to Appropriate Locations.

The most applicable goal for the McNaughton Road Grade Separation Project is Goal 5: Moving Around Without a Car.

Reducing car traffic creates cleaner air and more enjoyable streets and increasing active transportation (walking and cycling) creates a healthier population. However, people will continue to drive cars until there are more viable transportation options. The Toronto-York and Yonge Subway Extensions, the Viva bus rapid transit and regional bus network and increased GO Transit service will provide a strong foundation for Vaughan’s public transit infrastructure. The new Pedestrian and Cycling Master Plan is also an important step in this direction, making clear that the current state of auto dependency needs to be addressed and changed. With this foundation, the Official Plan will focus on implementing planning and design policies that make walking, cycling and transit use realistic options for moving around (City of Vaughan 2010).

Additionally, the Official Plan explains the need for investment in transit in relation to growth and development. Vaughan is aiming to provide additional areas for residential and business growth through selection of areas designated as ‘intensification’ in future planning and zoning. To support the increase in residential and business uses through these intensification efforts, Vaughan will have to implement more efficient and effective transit services. The Official Plan recognizes that in order to create a better, more comprehensive transit system, Vaughan will consult and work with transit agencies such as Metrolinx.

1.5 EPR Addendum Report Structure

This Addendum report has been organized into six sections (Introduction, Update to Project Description, Existing Conditions, Impact Assessment, Consultation and Commitments to Future Work) and includes supporting environmental and technical study reports (included as appendices), to address the requirements set out in *O.Reg. 231/08*.

Table 1.5-1: Report Structure

Section within this EPR Addendum	Relevant Information
Section 1	A statement of the purpose of the transit project, including an assessment of the significance of the changes to the original BRCE EPR that warranted the addendum process.
Section 2	A description of the project, McNaughton Road Grade Separation, including details of the preferred design.
Section 3	A description of the existing environmental conditions at the site of the transit project.
Section 4	The assessment and evaluation of any impacts of the preferred design, including a description of any proposed measures for mitigating any negative impacts the transit project might have on the environment.
Section 5	A complete record of stakeholder consultation efforts made by Metrolinx to solicit input from the public, regulatory agencies, Indigenous Nations, affected municipalities and adjacent property owners.
Section 6	A description of future commitments developed for developed to facilitate project implementation in accordance with project-specific mitigation measures and monitoring activities described in this EPR Addendum.

2.0 Update to the Project Description

The commentary in this section details the design updates for the proposed McNaughton Road Grade Separation (Mile 18.49) on the Barrie Rail Corridor. Reference is made to the drawings appended as the List of Drawings.

2.1 Preferred Design

The McNaughton Road Grade Separation project involves construction of a road overpass (elevated roadway) with two (2) vehicular traffic lanes in each direction above rail tracks, and a multi-use pathway on the south side of the structure. Discussions are on-going with the City of Vaughan to determine the requirements for a multi-use pathway to the north of the roadway. Project activities will include grading, construction of retaining walls on either side of the overpass, and construction of a new bridge to accommodate the road traffic and an elevated multi-use pathway to the south of the proposed traffic lanes over the rail corridor. The proposed layout and typical cross section are included on Drawing C-1102.

Two (2) multi-use pathways to the south of the roadway, one on either side of the rail corridor, will provide connections at the existing (non-elevated) level to Maple GO station. The east MUP will allow access to the Maple GO Station east platform and the west MUP from McNaughton Road will provide access to the future west platform at Maple GO Station. East-west connection between the platforms will be provided through the proposed Maple GO Station tunnel.

To accommodate the elevated road, the existing utilities within the road corridor will need to be relocated to avoid conflicts with the new roadway and proposed grade separation infrastructure. The proposed composite utility plan shown on Drawing U-1101.

The property impacts and required temporary and permanent land acquisitions are shown on Drawing P-1101.

2.2 Construction Staging

The construction site will be accessed directly from McNaughton Road. To facilitate the construction of the grade separation, a two-lane detour road is proposed to the north of the existing roadway. Laydown areas will be located to the south-east quadrant of the McNaughton Road/ Barrie Rail Corridor, utilizing approximately 90 parking bays in the Maple GO Station parking lot. Refer to Drawing C-1103 – McNaughton Road Grade Separation Construction Work Zone and Laydown Areas.

As shown on Drawing C-1101, to minimize any impacts related to the construction of the grade separation, construction will be staged either through installation of a proposed detour road (single lane in each direction) on an alignment north of the existing roadway, or through a temporary road closure and traffic diversion to other existing roads / intersections. If traffic diversion is required during construction, school bus routes will be avoided to the extent possible.

The southern MUPs (to the east & west of the rail corridor) which provide pedestrian connectivity to the station will be maintained during construction. Crossing of the rail

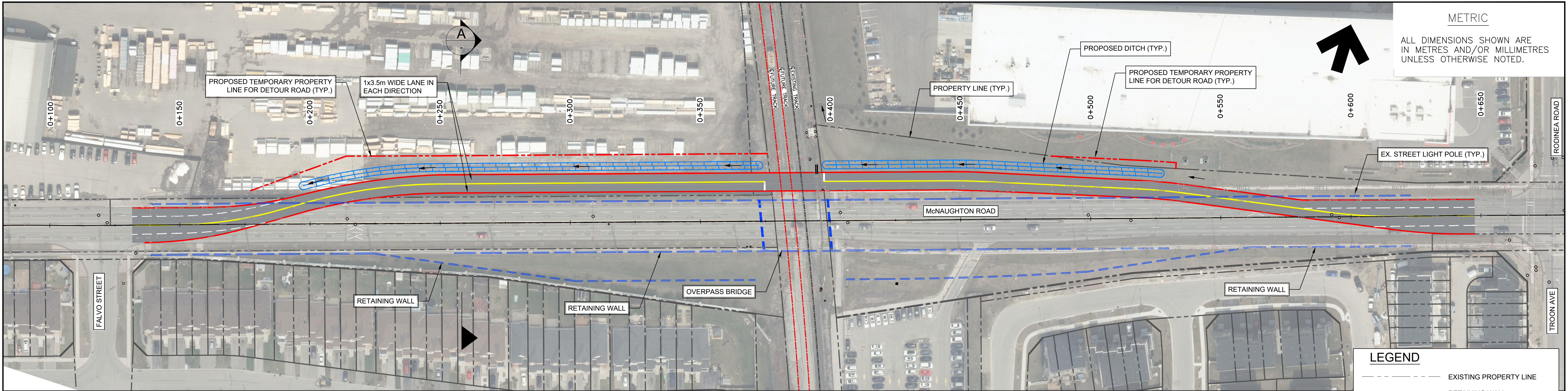
corridor will be via the tunnel(s) proposed as part of the Maple GO Station enhancement project. However, if the tunnel proposed as part of the station enhancement project is not complete, access across the rail corridor will be provided through a temporary crossing.

2.3 Property Impacts

Potential impacts are anticipated to some properties to accommodate the construction of proposed McNaughton Road Grade Separation. A Property Impact Plan is shown on Drawing P1101.

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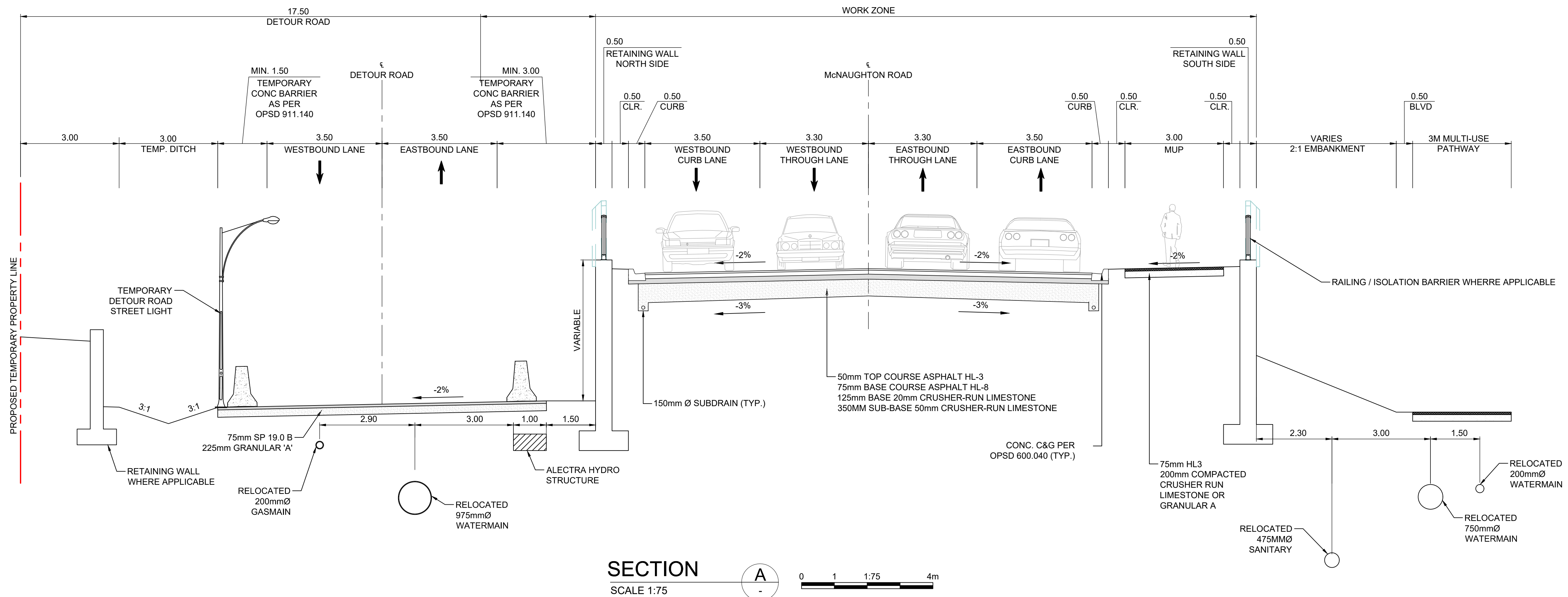
McNAUGHTON - DETOUR ROAD PLAN

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LEGEND

- EXISTING PROPERTY LINE
- RETAINING WALL
- EXISTING TRACK
- PROPOSED TRACK





SECTION A

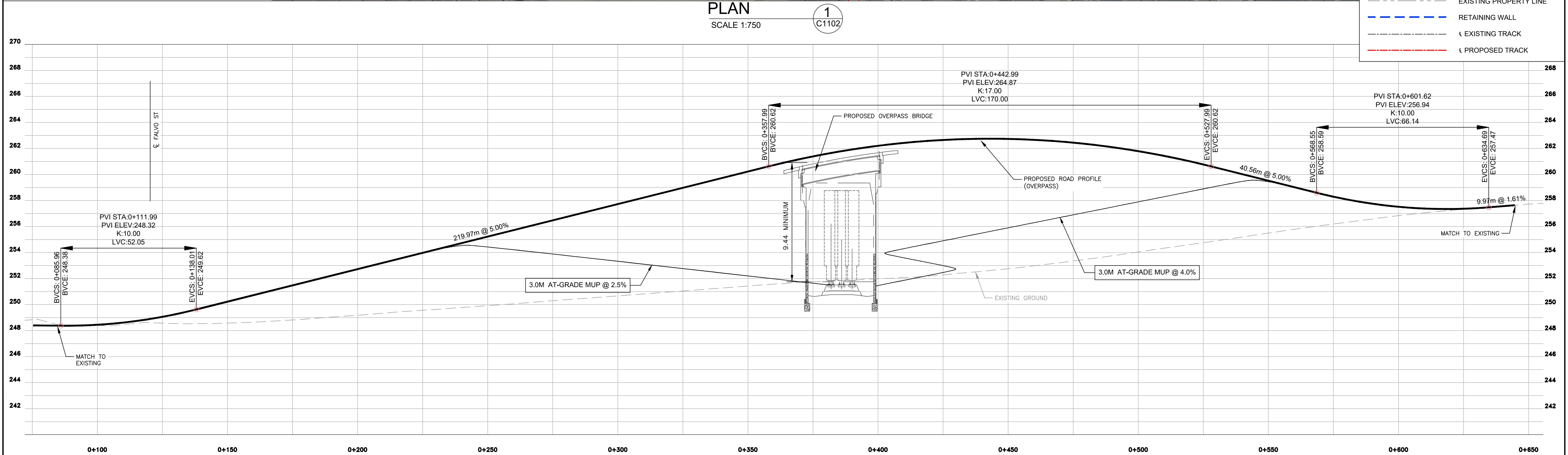
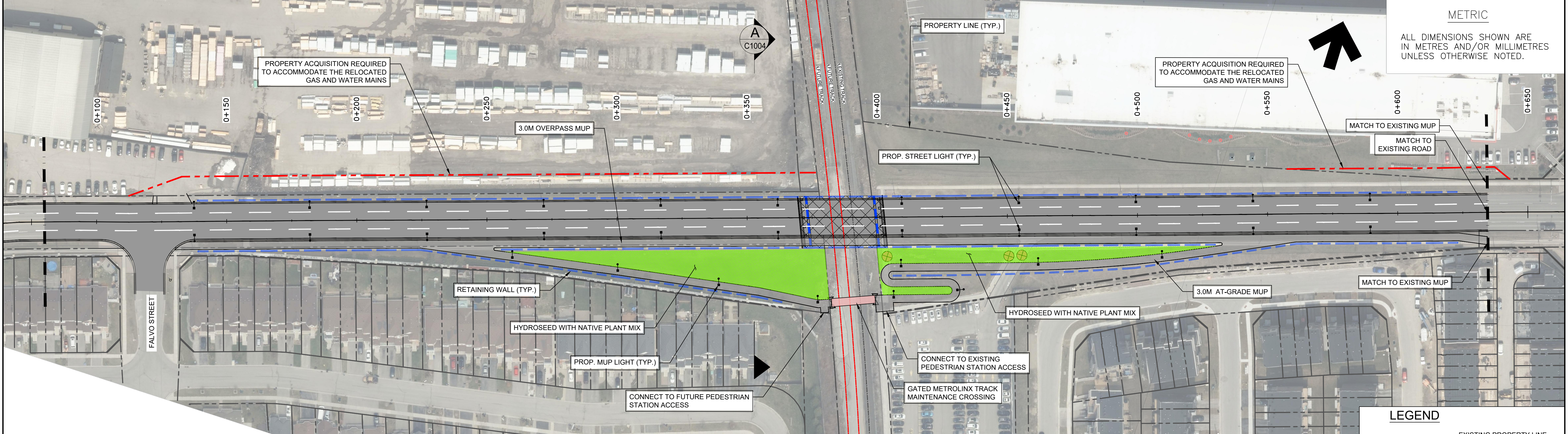
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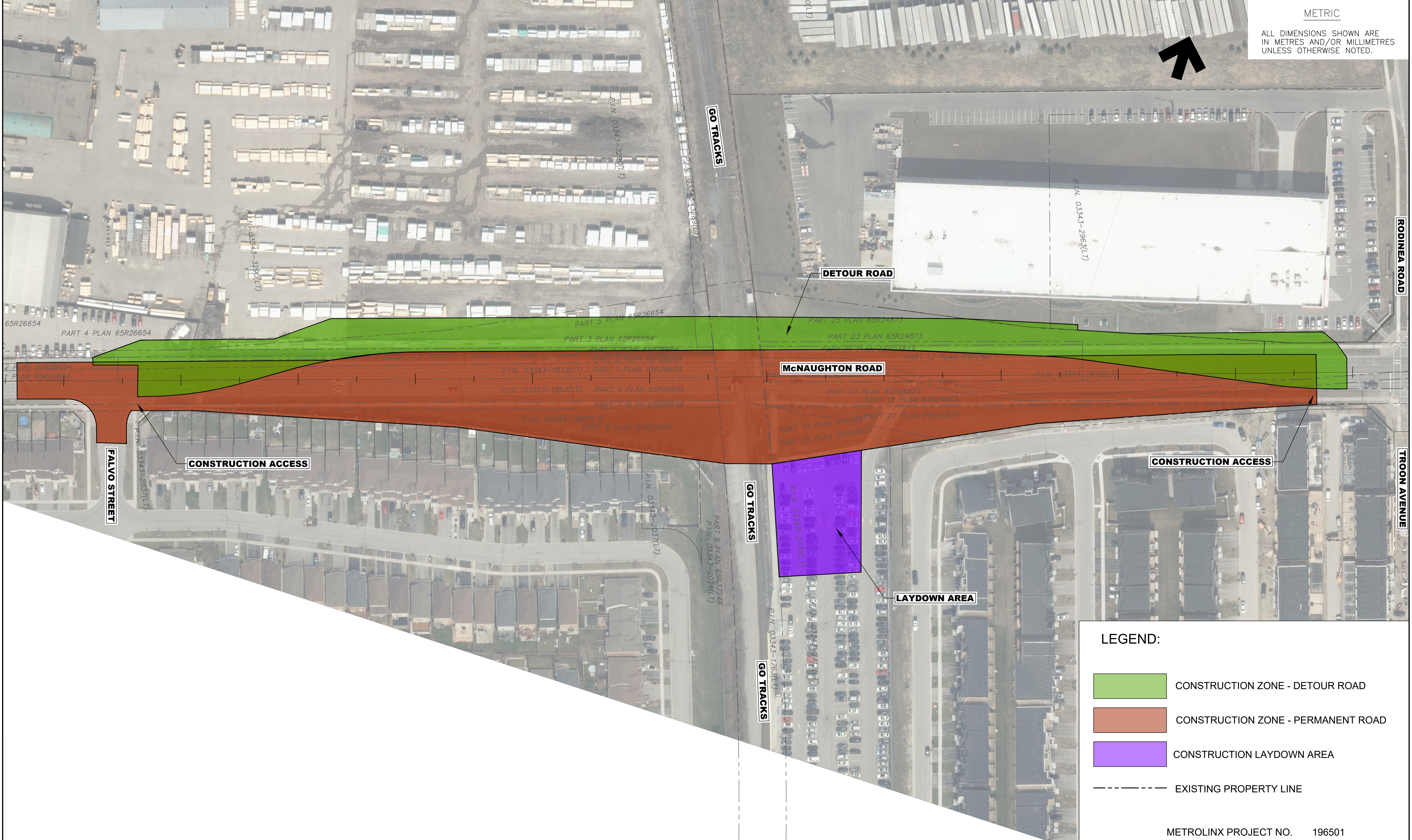
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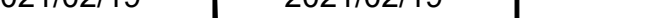
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REFERENCE DRAWINGS			ISSUE			REVISIONS			DRAWN BY: O. KWON 2020/08/27	DESIGNED BY: O. KWON 2020/08/27	 PROJECT NO. 195112		BARRIE CORRIDOR M18.48 MCNAUGHTON ROAD EAST GRADE SEPARATION PROPOSED PLAN & PROFILES	
										CHECKED BY: M. PATERSON 2021/02/19				APPROVED BY: C. HUMA 2021/02/19
			B	2021/02/19	ISSUED FOR TPAP SIGNIFICANT ADDENDA REPORT									
			A	2020/08/27	FOR TRAP ADDENDUM REPORT									
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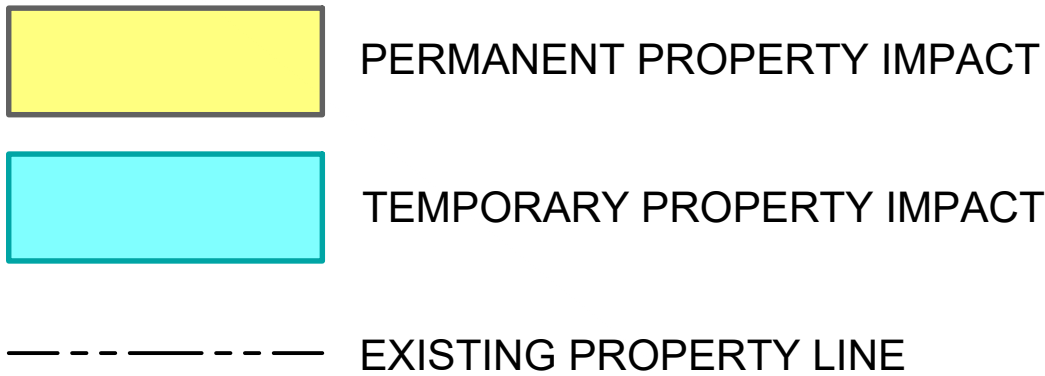
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										CHECKED BY: M. PATERSON 2021/02/19							APPROVED BY: C. HUMA 2021/02/19				
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			A	2020/08/27	FOR TRAP ADDENDUM REPORT									SCALE: AS SHOWN FULL SIZE ONLY							
																					
DWG NO.	TITLE		NO.	DATE	ISSUED FOR			REV.	DATE					NOT FOR CONSTRUCTION				CONTRACT NO. RQQ-2018-CINF-281	DWG. NO. C1103	REV. B	SHEET



REFERENCE DRAWINGS		ISSUE		REVISIONS		DRAWN BY: O. KWON 2020/08/27	DESIGNED BY: O. KWON 2020/08/27	<div> PROJECT NO.</div>	<div></div>	BARRIE CORRIDOR M18.48 MCNAUGHTON ROAD EAST GRADE SEPARATION COMPOSITE UTILITIES PLAN & PROFILE							
		C	2021/03/29	ISSUED FOR TPAP SIGNIFICANT ADDENDA REPORT													
		B	2021/02/19	ISSUED FOR TPAP SIGNIFICANT ADDENDA REPORT													
		A	2020/08/27	FOR TRAP ADDENDUM REPORT													
DWG NO.	TITLE	NO.	DATE	ISSUED FOR		REV.	DATE	SCALE: 1:750 FULL SIZE ONLY <div><div><div>01040m</div><div>028m</div></div><div>H 1:750 V 1:150</div></div>				<div>NOT FOR CONSTRUCTION</div>		CONTRACT NO. RQQ-2018-CINF-281	DWG. NO. U1101	REV. C	SHEET





BARRIE CORRIDOR M18.48

MCNAUGHTON ROAD EAST

GRADE SEPARATION

PROPERTY IMPACT PLAN

CONTRACT NO.	DWG. NO.	REV.	SHEET
RQQ-2018-CINF-281	P1101	B	

REFERENCE DRAWINGS		ISSUE		REVISIONS		DRAWN BY: O. KWON 2020/08/27	DESIGNED BY: O. KWON 2020/08/27	<div> PROJECT NO. 195112</div> <div></div> <div><div>NOT FOR CONSTRUCTION</div></div>	BARRIE CORRIDOR M18.48 MCNAUGHTON ROAD EAST GRADE SEPARATION PROPERTY IMPACT PLAN			
									CONTRACT NO. RQQ-2018-CINF-281	DWG. NO. P1101	REV. B	SHEET
		B	2021/02/19	ISSUED FOR TPAF SIGNIFICANT ADDENDA REPORT								
		A	2020/08/27	FOR TRAP ADDENDUM REPORT								
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						SCALE: AS SHOWN FULL SIZE ONLY						
						<div><div>010175040m</div></div>						

3.0 Existing Conditions

3.1 Natural Environment and Tree Inventory

A Natural Environment Report (Appendix A-1) was completed for the McNaughton Road Grade Separation study area to identify existing conditions related to the natural environment. The Natural Environment Assessment was completed on the basis of a desktop review of secondary source information, ground-truthing survey conducted on July 7, 2020, and breeding bird surveys.

The following federal and provincial databases and planning documents were reviewed:

- Appendix A - Natural Environmental Report (including the Appendix A.1 and A.2) of the *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Environmental Project Report* (Hatch 2017a);
- Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) database (grid ID 17PJ1957 and 17PJ2057);
- Land Information Ontario (LIO);
- *Atlas of the Breeding Birds of Ontario* (BSC et al. 2008; Grid ID 17PJ15 and 17PJ25);
- *Ontario Reptile and Amphibian Atlas* (Ontario Nature 2020; Grid ID 17PJ15 and 17PJ25);
- *Atlas of the Mammals of Ontario* (Dobbyn 1994);
- Bat Conservation International Inc. (BCI 2019);
- *Ontario Butterfly Atlas* (TEA 2018);
- eBird (2019); and
- iNaturalist (which includes observations reported on the Herps of Ontario website).

One (1) ground-truthing survey was conducted on July 7, 2020 from publicly accessible portions of the study area to inform Ecological Land Classification (ELC) delineation and vegetation constraints. Two (2) breeding bird surveys were conducted following the Ontario Breeding Bird Atlas Protocol (2001). The surveys were completed within the breeding bird season, on June 23 and July 7, 2020, at 8-point count stations. The surveys documented visual and auditory observations of birds. Visual observations included bird behaviours indicative of nesting activity. Auditory observations (e.g., singing, calling, etc.) were noted for all species as certain behaviours are suggestive of breeding in the area (e.g., agitated behaviour, anxiety calls, mobbing, etc.).

The following sections describe the existing natural environment conditions within the study area.

3.1.1 Aquatic Environment

The Natural Environment study area was examined for the presence of aquatic features. Based on the desktop review and field investigation, no watercourses or open waterbodies were identified within the study area or nearby.

3.1.2 Terrestrial Environment

The Natural Environment study area is entirely developed and is dominated by residential and commercial buildings. No terrestrial environment features were identified in the study area. No ecological units were confirmed at the site-level. During the recent commercial and residential developments, street trees were planted. Based on the site visit, these trees are all less than 10 cm DBH and do not fall under tree protection by-laws.

3.1.3 Wildlife

All bird species documented during Breeding Bird Surveys were urban adapted species common to the area. Incidental wildlife was not documented, however, small and meso-mammals such as Grey Squirrel, Northern Raccoon, Striped Skunk, and the Virginia Opossum may occasionally be seen travelling through the study area.

3.1.4 Significant Wildlife Habitat

The desktop review confirmed that there are no Significant Wildlife Habitats (SWH) present within the study area.

3.1.5 Species at Risk

The background information was used to determine the potential presence of Species at Risk (SAR) within the study area. A bat survey was not completed for this project as it is only impacting street trees that do not provide suitable bat habitat. As no watercourses, waterbodies, or vegetation communities exists on-site, background source data was reviewed for species which had the potential to occur on-site, such as those which are adapted to human-made structures (e.g., Barn Swallows and Chimney Swifts). A review of the Ontario Breeding Bird Atlas and Ontario Butterfly Atlas identified the following records within the 10 by 10 km square, which encompasses the study area. The probability of existence for these species was found to be low or none.

Table 3.1-1: Species-at-Risk Probability of Occurrence within the Project Study Area

Type	Species	Provincial status (S-rank)	SARO List	Potential for SAR Habitat/ Occurrence within the Project Study Area
Bird	Barn Swallow (<i>Hirundo rustica</i>)	S4B	threatened	Low – Buildings in the area are do not have desirable features for nesting and little foraging habitat exists. If Barn Swallow observed flying around the study area, they are likely nesting elsewhere.
Bird	Chimney Swift (<i>Chaetura pelagica</i>)	S4B, S4N	threatened	None – Suitable buildings do not appear to be present. Suitable foraging habitat may be present. If swifts are observed flying around the study area, they are likely nesting elsewhere.
Bird	Common Nighthawk (<i>Chordeiles minor</i>)	S4B	threatened	Low – Roofs of buildings do not seem suitable for nesting. If nighthawks are observed flying around the study area, they are likely nesting elsewhere.
Bird	Peregrine Falcon (<i>Falco peregrinus</i>)	S3B	special concern	None – No suitable nesting habitat (tall buildings) present though this species could use the study area for foraging.
Butterfly	Monarch (<i>Danaus plexippus</i>)	S3	special concern	None – Suitable habitat may be present in study area if sporadic milkweed occurs or residents plant pollinator gardens. But meadows are not present.

3.1.6 Significant Natural Heritage Features

As determined by the desktop review, there are no Significant Natural Heritage Features identified within the study area.

3.1.7 Tree Inventory

A Tree Inventory Plan and Data Summary Table (Appendix A-2) was completed in support of the McNaughton Road Grade Separation. The Tree Inventory documented a total of 187 trees in the Tree Inventory Survey Location. Three (3) trees were 1-2 m DBH, 30 trees were 10-25 m DBH, and the remaining trees were between 2-10 m DBH. The average canopy width was approximately 2 m in diameter. Four (4) trees were found to be dead and 16 were identified to be in poor condition. 38 trees were found to be in fair health and the remaining (129) trees were in good health. A summary of tree species is provided in the table below.

Table 3.1-2: Summary of Tree Species

Common Name	Count of Individuals
Bebb's willow	1
Black Walnut	4
Blue Spruce	3
Bur Oak	2
Common Hackberry	5
Dwarf Burning Bush	4
European Beech	4
Ginkgo	8
Honey Locust	42
Horse Chestnut	1
Juniper bush	4
Kentucky Coffee Tree	2
Lilac	4
Little Leaf Linden	7
Manitoba Maple	1
Northern Catalpa	2
Norway Maple	3
Ornamental Pear	33
Red Oak	4
Siberian Elm	6
Silver Maple	17
Staghorn Sumac	1
White Ash	9
White Spruce	20


3.2 Cultural Heritage

A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was completed to identify whether properties in the McNaughton Road Grade Separation study area may have known or potential Cultural Heritage Value or Interest (CHVI). The results of the investigation are provided as Appendix B of this EPR Addendum.

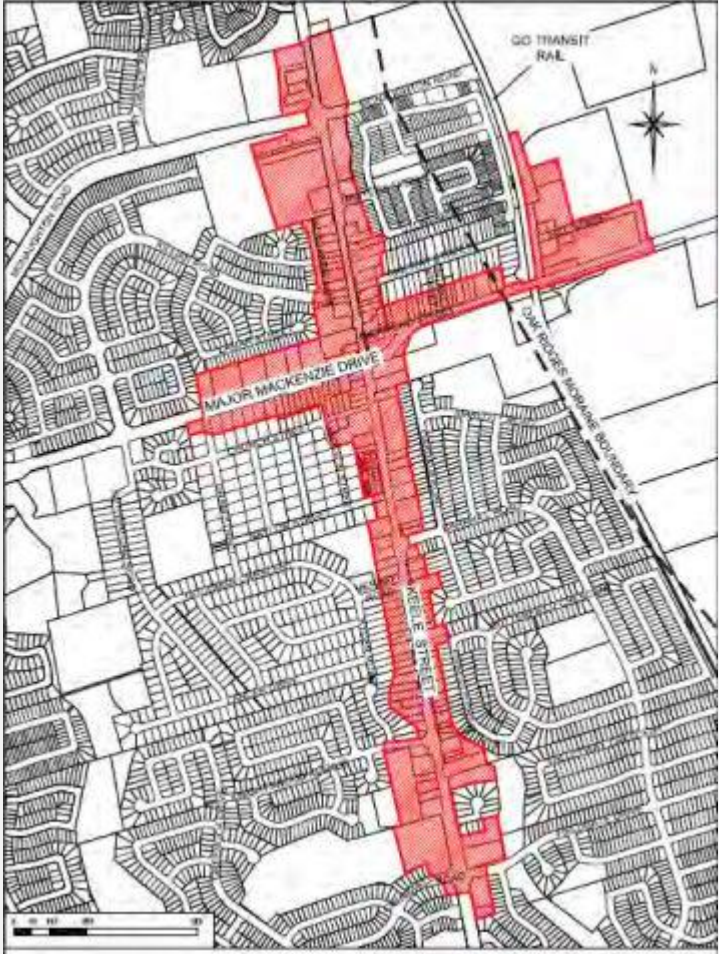
Background research and a site visit were completed to determine the known and potential built heritage resources and cultural heritage landscapes within the study area. The background research included a review of primary and secondary sources, historical maps and aerial photographs to identify historical themes relevant to the study area. Consultations were carried out with the City of Vaughan, Ontario Heritage Trust, and the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) to determine the presence of listed, designated, or protected heritage properties within the study area. A field review of the study area allowed for the identification of properties containing protected and potential cultural heritage resources, including both built heritage resources and cultural heritage landscapes.


Based on the findings of background research, consultation, and a field review, it was determined that there are three (3) cultural heritage resources, including two (2) built heritage resources and one (1) cultural heritage landscape in the study area. Of these, all three (3) are wholly or partially designated under Part V of the *Ontario Heritage Act* as part of the Village of Maple Heritage Conservation District (HCD). In addition, one (1) property is also designated under the *Heritage Railway Stations Protection Act* and listed on the City of Vaughan Heritage Inventory. Table 3.2-1 provides a summary of built heritage resources and cultural heritage landscape identified.

Table 3.2-1: Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes

CHR No.	Type	Location	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest (CHVI)	Photographs/Digital Image
CHR1	-BHR -Railway Station -Part of HCD	30 Station Street, City of Vaughan	-Designated under the Heritage <i>Railway Stations Protection Act</i> -Designated under Part V of the <i>Ontario Heritage Act</i> as part of the Village of Maple Heritage Conservation District -Identified as a Provincial Heritage Property (local significance) under Part III.1 of the <i>Ontario Heritage Act</i> -Listed on the City of Vaughan Heritage Inventory	<p>This property contains the Former Canadian National Railway (CNR) Station, now Maple GO Station, that was built in 1903 by the Grand Trunk Railway (GTR). The Maple GO Station was recognized as a Provincial Heritage Property (local significance) by Metrolinx in 2017. Per the 2017 Metrolinx Interim Heritage Committee Decision Form, the Statement of Cultural Heritage Value and Heritage Attributes for the Aurora GO Station are as follows:</p> <p><u>Description of Property:</u></p> <p>The Maple GO Station property is composed of the station itself, tracks, platforms, and expansive parking lot to the south, east, and north. The property runs roughly 490 metres north-south at the tracks, and measures 50 metres wide at the north, and 145 metres wide at the south end. The station building is located centrally on the eastern edge of the property. It is a small Stick Style train station (roughly 13 metres by 7 metres), typical of those built by the GTR at the early 20th century. The single storey structure is nearly symmetrical in plan, boasting a steeply pitched hipped roof punctuated by gables on three sides. The station is finished with quality woodwork on the interior and exterior, the latter boasting a polychromatic color scheme.</p> <p><u>Cultural Heritage Value:</u></p> <p>The Maple GO Station is of cultural heritage interest for its design, historical, and contextual values.</p> <p><u>Historical Values:</u></p> <p>The Maple GO Station property has direct associations with the first steam railway line in Canada West, as well as the Grand Trunk Railway.</p> <p>Railway uses on the Maple GO Station property date back to 1853, when the Ontario, Simcoe and Huron Railroad Company constructed the first steam train line in Canada West. The inaugural train ran between Toronto and Aurora in May of 1853, before opening further to Bradford and finally Barrie later that year. A station was built at Maple but named Richmond Hill Station for the larger settlement to the east. A fire destroyed the original station in 1903, and the new station built by the GTR that same year bore the name of Maple. The reconstruction occurred within a broader regimen of upgrades being undertaken by the GTR, and it shares a form and appearance with numerous other structures from the era.</p> <p><u>Design Values:</u></p> <p>The Maple GO Station is a representative example of the small, Stick Style railway station buildings adopted by the Grand Trunk Railway between 1898 and 1910. The Maple GO Station retains a high degree of integrity through its surviving form, spatial and functional organization, domestic scale, and wooden</p>	

CHR No.	Type	Location	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest (CHVI)	Photographs/Digital Image
				<p>detailing as built in 1903. It is one of a series of railway stations built or replaced at this time, based on the 'Milton pattern' or Milton Station, to instill a corporate standard.</p> <p>The Maple GO Station demonstrates a high degree of craftsmanship, as seen in the quality of the woodwork details both on the interior, and exterior</p> <p><i>Contextual Values:</i> The Maple GO Station has a contextual relationship to the Barrie GO Line that runs along the west side of the property. The relationship dates back to 1853, when the first railway in Canada West was laid beside the Village of Maple by the OSHR. The relationship has served two stations on the property, the present station since its construction in 1903.</p> <p><u>Heritage Attributes</u></p> <p>The key attributes essential to the cultural heritage value or interest of Maple GO Station are:</p> <ul style="list-style-type: none">• Stick Style treatment of cladding and wood detailing:<ul style="list-style-type: none">○ V-jointed panels and board-and-batten cladding;○ framing elements;○ bargeboards;○ brackets;○ finials; and○ trellis work.• Near-symmetrical modest rectangular form arranged around the agent's polygonal bay window• Steeply pitched hipped roof, interrupted by three gables and covered in wood shingles• Fine balance inherent in its overall vertical definition• Rhythmic placement of apertures below a consistent wooden string course• Polychromatic paint scheme• Integrity of interior finishes in the waiting room and agent's office: the beaded boarding aligned with the high flat ceiling; framing elements; elaborate coved wood cornice in the waiting room• Integrity and display of original signage• The high quality of joinery works evident on exterior and interior wood finishes• The painted mileage signs on the bay, indicating distances to Aurora and Toronto• The two-track switchboard set within the bay window	

CHR No.	Type	Location	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest (CHVI)	Photographs/Digital Image
CHR 2	-CHL -HCD	Includes 265 properties and is generally defined by Major Mackenzie Drive West (between Gram Street and Hill Street) and Keele Street (from 125 metres south of Fieldgate Drive to 200 metres north of McNaughton Road)	-Designated under Part V of the <i>Ontario Heritage Act</i>	<p>The Village of Maple HCD was designated in 2007 and is generally defined by Major Mackenzie Drive West (between Gram Street and Hill Street) and Keele Street (from 125 metres south of Field gate Drive to 200 meters north of McNaughton Road). The HCD includes 265 properties and all lands within the HCD boundaries depicted in By-law 167-2007 are designated under Part V of the Ontario Heritage Act.</p> <p>The Statement of Significance for the Village of Maple HCD is as follows:</p> <p>The Village of Maple is one of four 19th century settlements in the City of Vaughan that could have been considered more than a hamlet. (Two of these, Thornhill and Kleinburg-Nashville, have been made Heritage Conservation Districts.) The Ontario Huron and Simcoe Railway, the first railway in Canada, provided the opportunity for its modest prosperity. The core of the village was always small, with some outlying houses and businesses spaced out along the main roads on the outskirts. Today, Maple has many newer buildings, which have filled in the spaces between earlier ones, and in some cases replaced them. Nonetheless, there is a wealth of 19th and early 20th century buildings, and the character of a village remains evident. Newer development has tended to make design reference to heritage styles, with mixed success. To ensure that existing heritage resources are preserved, and that new development authentically enhances the village character, a Village of Maple Heritage Conservation District is proposed. The proposed District consists of the historic block of Church and Jackson Streets, and properties along the two main roads, roughly to the extent of the old Police Village. The Village of Maple Heritage Conservation District is a distinct area in the City of Vaughan, characterized by a wealth of heritage buildings, and with many newer buildings that respect the scale and site plan characteristics of a historic village. The heritage character, shown in Sections 4.1 through 4.8 of this Study, is worthy of preservation. (City of Vaughan 2007:9).</p> <p>There are two properties belonging to the Village of Maple HCD in the vicinity of the Study Area: the Maple GO Station (30 Station Street) and the western frontage of 10287/10311 Keele Street. Individual cultural heritage inventory entries have been created for each of these addresses (see CHR 1 and CHR 3).</p>	

CHR No.	Type	Location	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest (CHVI)	Photographs/Digital Image
CHR 3	-BHR - Residence -Part of HCD	10287 Keele Street	-Western frontage is designated under Part V of the <i>Ontario Heritage Act</i> as part of the Village of Maple HCD	<p>The western frontage of 10287/10311 Keele Street is designated under Part V of the <i>Ontario Heritage Act</i> as part of the Village of Maple HCD per the boundaries shown in By-law 167-2007. A review of the Village of Maple HCD Inventory provided by the City of Vaughan determined that no heritage inventory sheet is available for 10311 Keele Street, but an inventory sheet was created for 10287 Keele Street. Presently, these two properties appear on publicly available mapping as one property parcel. It is not known when these properties were consolidated.</p> <p>The City of Vaughan provided the Village of Maple Inventory sheet for 10287 Keele Street. A copy of the HCD inventory sheet for 10287 Keele Street is provided in the Cultural Heritage Existing Conditions Report. The inventory sheet text is as follows:</p> <ul style="list-style-type: none">• Large, two-storey, four-square red-brick house with single-car garage (c. 1930).• Description: Large, unornamented house is built in running-bond masonry, suggesting a frame structure. Front door appears to be original unit, with six small, square panes over multiple panels (behind metal storm). To either side are wide apertures each having large central window with 1/1 units at either side (all with metal storms). Segmental arches are all built of triple-course, rowlock headers, and sills throughout are formed of canted band of rowlock headers. At second floor are two, widely spaced 1/1 windows (with metal storms) with heads hidden by aluminum-clad soffits. Hipped roof has long central ridge, and wide, single-vent chimney at north side. Single-car garage is similarly built, and has simple, 24- panel wooden door and hipped roof abutting north elevation.• History: N/A• Comments: Solid building is a late example of traditional building practices and sets the stage for older village houses further to the south. Garage door is an interesting example of traditional framing practices in new door type. House is set quite close to street, with medium-sized deciduous tree and cluster of large conifers at SW corner of front garden, which soften an otherwise rather austere presence. <p>It should be noted that the inventory sheet for this property does not include an evaluation of CHVI, Statement of Significance, or List of Heritage Attributes.</p> <p>Identified heritage attributes include: Two storey red brick residence with attached garage and the one storey commercial building (constructed between 1954 and 1970).</p>	

3.3 Archaeology

A Stage 1 Archaeological Assessment was completed for the McNaughton Road Grade Separation project site, which involved a desktop review of background documentation and archaeological records. A visual inspection of the study area was also conducted to identify areas of archaeological potential. MHSTCI was also contacted to determine if archaeological assessments have been registered within 1 km of the property and if previous archaeological assessments were carried out within 50m radius of the project site.

The Stage 1 Archaeological Assessment indicated that 83% (2.56 ha) of the study area is disturbed by development activities such as roadway, sidewalk, and commercial building construction and therefore this portion of the study area has a low potential for preservation of archaeological resources. The balance of the study area (17%, 0.51 ha), consisting of landscaped land in an urban setting (unploughable land), has archaeological potential and is recommended for additional archaeological assessment prior to ground disturbing activities associated with the Project.

A copy of the Stage 1 Archaeological Assessment report can be found in Appendix C.

3.4 Socio Economic and Land Use

To understand and identify the socio-economic conditions within the McNaughton Road Grade Separation study area, qualitative and quantitative data sources were reviewed. A desktop review and site visit were completed to determine the existing conditions within the study area. The desktop review included relevant policy and planning documents at the provincial and municipal levels, publicly available sources such as government documents and Statistic Canada Census data, and data provided by the City of Vaughan and the York Region. The following provincial and municipal policy and planning documents were reviewed:

- Provincial Policy Statement (2020);
- A Place to Grow: The Growth Plan for the Greater Golden Horseshoe (2020);
- A Made-in-Ontario Environment Plan (2018);
- The Oak Ridges Moraine Conservation Plan (2017);
- The Greenbelt Plan (2017);
- Infrastructure for Jobs and Prosperity Act (2015);
- The 2041 Regional Transportation Plan (2018);
- The GO Expansion Full Business Case (2018);
- Metrolinx Adjacent Development Guidelines (2013);
- York Region Official Plan (2010); and
- City of Vaughan Official Plan (2010).

Characteristics of the built environment within the study area were assessed through a site visit conducted on December 9, 2019. The site visit allowed for the verification of neighbourhood composition, including, but not limited to available community services and resources, institutional uses, recreational uses, public transit, utilities, residential, and commercial uses. A full photographic record of the varied land uses within the study area are documented within the Socio-Economic and Land Use Characteristics Report attached in Appendix D of this EPR Addendum, which also includes full detail of the existing socio-economic environment.

3.4.1 Current Population

Recent population data for the City of Vaughan and York Region from the 2011 and 2016 census are provide in Table 3.4-1. The population growth over this period is also summarized and compared to the Province of Ontario as a whole. As noted therein, the population of the City of Vaughan and York Region grew above the provincial average growth rate. The population of Vaughan grew faster than that of Ontario but not the York Region (Statistics Canada 2017a).

Table 3.4-1: Summary of Population and Population Change in Vaughan, York Region, and Ontario, 2011 to 2016

Location	2011 Population	2016 Population	% Change (2011-2016)
Vaughan	288, 301	306,233	6.2
York Region	1,032,524	1,109,909	7.5
Ontario	12,851,821	13,448,494	4.6

Source: Statistics Canada 2017a

3.4.2 Projected Population Growth

Population forecast for York Region was obtained from the *Growth Plan for the Greater Golden Horseshoe, 2019*. Overall, the population in York Region is projected to increase by 61.3% from 2016 to 2041; however, the greatest projected population increase (43.3%) is anticipated to occur between 2016 and 2031 (MMAH 2017a). Table 3.4-2 provides the projected population growth estimates from 2016 to 2031 for York Region.

Table 3.4-2: Projected Population Growth from 2016 to 2041 in York Region, 2017

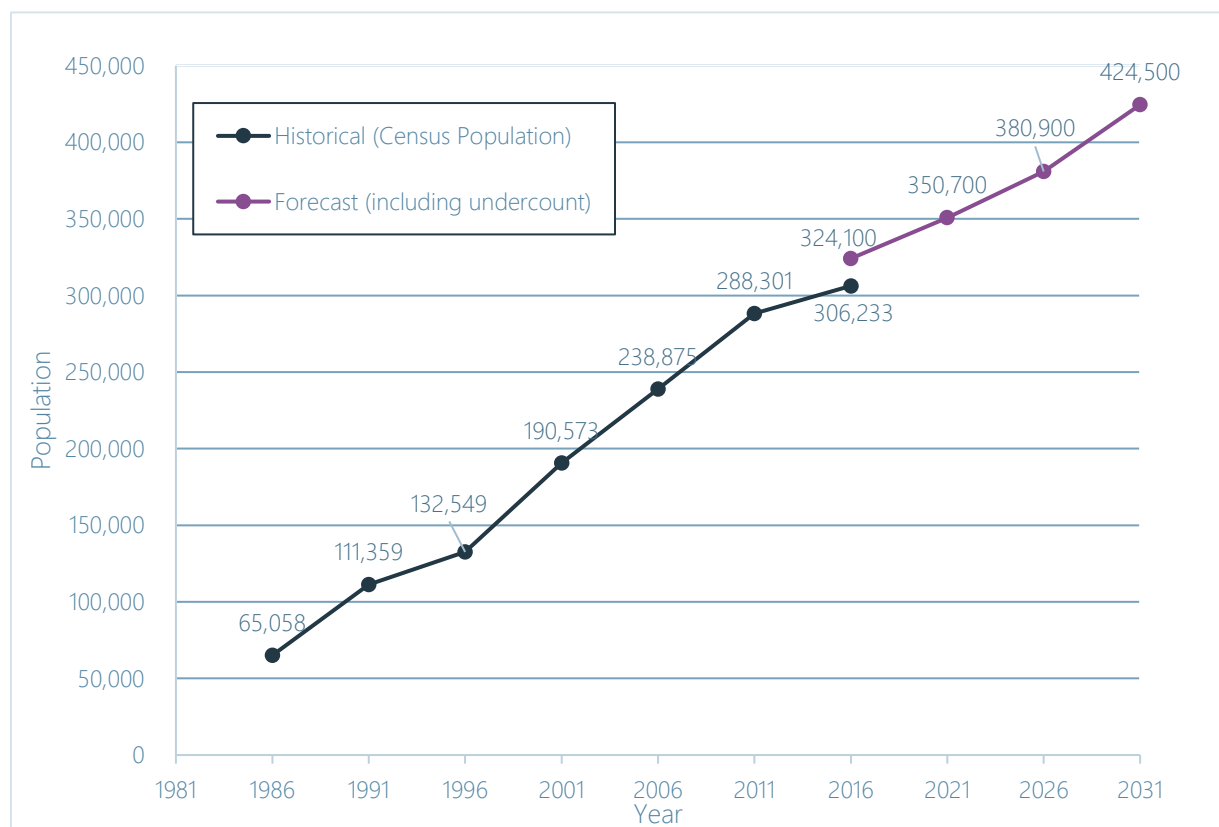
Geographic Area	Population				% Change (2016 to 2041)
	2016	2031	2036	2041	
York Region	1,109,909	1,590,000	1,700,000	1,790,000	61.3

Source: MMAH 2017a

As shown in Figure 3.4-1, the historic and forecasted population growth for Vaughan was obtained from the City of Vaughan Active Together Master Plan (2013). The *Growth Plan for the Greater Golden Horseshoe, 2017* estimated that Vaughan would experience growth of up to 200 residents and a similar number of jobs per hectare in its

metropolitan centre by 2031 (City of Vaughan 2013). York Region is estimated to grow to a total regional population of 13.5 million people and up to 6.3 million jobs by 2041.

Figure 3.4-1: Population Growth - Historic and Forecasted for Vaughan



Source: City of Vaughan 2013

3.4.3 Employment Projections

Employment projections for York Region are provided in Table 3.4-3. Employment rates in York Region are expected to increase by nearly 14% between 2031 and 2041 (MMAH 2017a). This indicates the need for investment in infrastructure to support the growing economy. Specific employment projections for Vaughan were not available.

Table 3.4-3: Employment Projections from 2031 to 2041 in York Region, 2017

Geographic Area	Employment Population Projections			% Change (2016 to 2041)
	2031	2036	2041	
York Region	790,000	840,000	900,000	13.9

Source: MMAH 2017a

3.4.4 Existing Land Uses

The McNaughton Road Grade Separation study area is located in the City of Vaughan, which is one of the consistently growing urban centers of York Region. The land uses within the study area are mostly industrial, residential, commercial, and open spaces. The study area comprises of various commercial properties including shopping centers,

stores and restaurants, industrial and institutional facilities, residential areas, and parks, and open spaces.

There are two (2) schools in the study area, one (1) community centre, one (1) childcare centre, one (1) church, one (1) library, two (2) community parks, one (1) district park and the Maple GO Station. Institutional uses, residential uses, parks and open spaces, and industrial uses located in the study area are listed in Table 3.4-4.

Table 3.4-4: Socio-Economic and Land Use Features within the Study Area

Institutional Uses	Recreation Uses, Parks and Open Spaces	Industrial and Commercial Uses	Residential Uses
Maple Community Centre	Mario Plastina Park	Northern Transformer Corporation	McNaughton Heights Residential Area
Maple Child Care Centre	Maple Station Park	Load King Trailer	—
Montessori Private School	Maple Community District Park	Dufferin Concrete Maple Plant	—
St. Joan of Arc Catholic High School	—	Argo Lumber Yard	—
Maple Library	—	—	—
St. Stephens Anglican Church	—	—	—
Maple United Cemetery	—	—	—
Maple GO Station	—	—	—

The current land use in the immediate vicinity of the grade separation is as follows:

- North-east: Commercial;
- South-east: Residential / Institutional;
- South-west: Residential; and
- North-west: Commercial / Industrial.

3.4.5 Aesthetics / Visual Character

McNaughton Road is a double lane road with a median located on a portion to the east of the intersection of the rail corridor. Crossing gates are located on either side of the rail corridor where it crosses McNaughton Road.

Northeast of the intersection of McNaughton Road and the Barrie Rail Corridor is an industrial building with access to the property from Rodinea Road. North of the industrial

building and yard is a transport trailer parking and storage yard, with access from Rodinea Road. Three water retention water ponds, which run north to south along the east side of the rail between the rail corridor and the storage yard, are bordered by a strip of grass and shrubs. Commercial and retail businesses (e.g., Lowe's Home Improvement) are located to the east of the rail corridor at Troon Avenue, McNaughton Road East, Eagle Court, and Eagle Rockway. A sidewalk is located along the northeast side of McNaughton Road and there is a shared bicycle and pedestrian pathway east and west of the rail corridor, along McNaughton Road.

The existing Maple GO Station including a paved parking lot bordered by grass and shrubs is southeast of the intersection of McNaughton Road and the Barrie Rail Corridor. Pedestrians and cyclists can access the Maple GO Station from McNaughton Road. Additional residential and commercial properties are located adjacent to the Maple GO Station east along McNaughton Road.

The McNaughton Heights residential area is located to the southwest of the intersection of McNaughton Road and the rail corridor. The backyards of a number of the homes face McNaughton Road. A grassy area with shrubs borders this corner of the intersection. A noise wall runs along McNaughton Road to the rail line and follows the rail going south. A pedestrian sidewalk on the south side of McNaughton Road runs from the rail line west and east.

The Maple GO Station parking lot and train access are located southeast of the intersection of McNaughton Road and the Barrie Rail Corridor. Access to the parking lot is located at Eagle Rock Way off Troon Avenue. A vehicular exit is located at the north parking lot eastbound onto McNaughton Road. Commuters can also exit the south end of the parking via Eagle Rock Way, which has an exit onto Hill Street eastbound and an exit onto Station Street heading south.

3.4.6 Public Transit Service

York Region Transit (YRT) provides service within the Local Study Area (LSA) with a number of regional transit routes that operate with a variety of schedules. There are four (4) major routes, with several stops, in the LSA, namely: Route 22 (King City), Route 96 (Keele-Yonge), Route 107-107B (Keele), and Route 462 and 464.

In addition to services provided by York Region Transit, GO Transit routes 63, 65, and 68 provide service on weekdays, with a stop on Eagle Rock Way at the GO Parking Lot. The City of Vaughan offers an accessible taxi service to support the transit needs of residents requiring this service. York Region also offers an on-request ride assistance service for individuals with disabilities. A stop is located at the Maple Community Centre within the LSA.

3.4.7 Active Transportation

Pedestrian and cycling infrastructure are located within the LSA. A multi-use pathway for both cyclists and pedestrians is located along the south side of McNaughton Road east and west of the rail track. A pedestrian sidewalk is located on the north side of McNaughton Road going east toward Eagle Court but no sidewalk is provided on a portion of the north side of McNaughton Road along the Argo Lumber yard as the

fencing for this property is in close proximity to the road. A pedestrian / bicycle pathway connects the Maple GO Station to McNaughton Road.

3.4.8 Planned (future) Conditions

There are several new housing developments planned or under construction within the study area. At the northwest corner of Keele Street and McNaughton Road (northwest of the intersection of McNaughton Road and the rail corridor and within the study area), the Arthur Towns development is under construction with a planned 49 three-story townhouse units. Condo developments include the Mackenzie Boutique Condos (16 storeys, 117 units) (Pemberton, 2020) and the GO.2 Condos (12 storeys, 307 units) (GO.2, 2020) both on Eagle Rock Way.

A new townhouse development is located southeast of the intersection of McNaughton Road and the rail corridor beside the Maple GO Station parking lot. The Salterton Circle and Fancamp Drive neighbourhood is accessed by Troon Avenue. This development was approved in an amendment to the City of Vaughan Master Plan in 2012. A new apartment complex is under construction on the southside of Salterton Circle.

3.5 Air Quality

The existing air quality conditions in the vicinity of the McNaughton Road Grade Separation are expected to be consistent with background air quality levels in the region. Although surrounding land use includes a mixture of residential, industrial, commercial, and institutional uses, transportation sources along local roadways will have a strong influence on background air quality levels. Background air quality levels for the study area were obtained from the Ministry of the Environment, Conservation and Parks (MECP) and National Air Pollution Surveillance (NAPS) air quality monitoring stations located within reasonable distances of the study area, and representative of existing regional air quality in the study area. A full listing of the background air quality levels, which will be combined with the predicted values in the air quality assessment (see Section 4.1.5) are provided in Appendix E-1 of this EPR addendum. Table 3.5-1 provides a summary of the background concentration for select criteria air contaminants.

Table 3.5-1: Regional Study Area Baseline Concentrations

Compound	CAS Number	Averaging Time	Baseline Concentration ($\mu\text{g}/\text{m}^3$)	Reference for Baseline Concentration
PM ₁₀	n/a	1-hour	29.6	PM _{2.5} /PM ₁₀ = 0.54 (Lall et. all, 2004)
		24-hour	26.7	
PM _{2.5}	n/a	24-hour	14.4	90 th percentile of 24-hr averaging data at Newmarket and Toronto East, 2013-2017

Compound	CAS Number	Averaging Time	Baseline Concentration ($\mu\text{g}/\text{m}^3$)	Reference for Baseline Concentration
		Annual	8	Maximum of annual average at Newmarket and Toronto East, 2013-2017
		1-hour	16	90 th percentile of 1-hr averaging data at Newmarket and Toronto East, 2013-2017
Nitrogen dioxide (NO_2)	10102-44-0	1-hour	48.9	90 th percentile of 1-hr averaging data at Newmarket and Toronto East, 2013-2017
		24-hour	39.9	90 th percentile of 24-hr averaging data at Newmarket and Toronto East, 2013-2017
		Annual	24.6	Maximum of annual average at Newmarket and Toronto East, 2013-2017
Carbon monoxide (CO)	630-08-0	8-hour	458	As a conservative assumption, same value with one-hour average background was assumed.
		1-hour	458	90 th percentile of 1-hr averaging data at Toronto West, 2013-2017
Benzo(a)pyrene	50-32-8	Annual	6.54E-05	Annual average at Toronto Area Stations, 2012-2016
		24 Hour	0.00011	90 th percentile of 24-hr averaging data at

Compound	CAS Number	Averaging Time	Baseline Concentration (µg/m³)	Reference for Baseline Concentration
				Toronto Area Stations, 2012-2016
Benzene	71-43-2	Annual	0.382	Annual average at Newmarket, 2015-2016
		24-hour	0.609	90 th percentile of 24-hr averaging data at Newmarket, 2015-2016
Acetaldehyde	75-07-0	24-hour	1.7	90 th percentile of 24-hr averaging data at University of Toronto, 2012-2016
		½-hour	4.1	Estimated using 24-hour data
Acrolein	107-02-8	24-hour	0.07	90 th percentile of 24-hr averaging data at University of Toronto, 2012-2016
		1-hour	0.17	Estimated using 24-hour data
1,3-Butadiene	106-99-0	Annual	0.021	Annual average at Newmarket, 2012-2016
		24-hour	0.0365	90 th percentile of 24-hr averaging data at Newmarket, 2012-2016
Formaldehyde	500-00-0	24-hour	3.19	90 th percentile of 24-hr averaging data at University of Toronto, 2012-2016

3.6 Noise and Vibration

A Noise and Vibration Assessment was conducted for the McNaughton Road Grade Separation in accordance with the Metrolinx Guide for Noise and Vibration Impact Assessment (Metrolinx 2017a), as well as methods outlined in the U.S. FTA Transit Noise and Impact Assessment Manual (FTA 2018) and U.S. FHWA Road Construction Noise Model User's Guide (FHWA 2006). Full details on the Noise and Vibration existing conditions can be found in Appendix F-1 of this EPR Addendum.

3.6.1 Noise

The *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Appendix H Noise and Vibration Impact Assessment* (Hatch 2017b) indicated that ambient sound levels in the local study area are expected to primarily result from local road traffic and surrounding industry. However, at receptors near the Barrie Rail Corridor, ambient noise from road traffic and surrounding industry was negligible compared to the noise from existing rail traffic. A summary of the modelled baseline noise levels at relevant receptors within the local study area are provided in Table 3.6-1. The location of these noise receptors is presented in Figure 4 (Appendix F-1).

Table 3.6-1: Summary of Modelled Baseline Noise Levels

Receptor ID	Description	Period ¹	Predicted Existing Project Noise Levels (dBA)
SR028	Single-detached dwelling	Daytime	5
		Nighttime	5
SR029	Town House	Daytime	6
		Nighttime	5
SR030	Town House	Daytime	6
		Nighttime	5
SR031	Town House	Daytime	4
		Nighttime	4

Notes:

1. The LEQ (Day) is evaluated for a 16-hour period (i.e., from 0700h to 2300h) and the LEQ (Night) is evaluated for an 8-hour period (i.e., from 2300h to 0700h).

3.6.2 Vibration

The *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Appendix H Noise and Vibration Impact Assessment* (Hatch 2017b) indicated that baseline vibration levels at sensitive receptors near the existing Barrie Rail Corridor are represented by vibration caused by passing GO rail traffic. A summary of the measured root-mean-square (RMS) vibration levels at receptors adjacent to the rail corridor are provided in Table 3.6-2. The location of these vibration receptors is presented in Figure 4 (Appendix F-1).

Table 3.6-2: Summary of Baseline Vibration Levels

Receptor ID	Address	Distance (Foundation to Existing Track) (m)	Distance to New Track (m)	Measured RMS Pass (mm/s)
SR025	11 Station Street	28	3	0.37
SR026	79 Lindenshire	40	3	0.35

3.7 Contaminated Materials

A limited Phase One Environmental Site Assessment (ESA) was conducted in accordance with the requirements prescribed in Canadian Standards Association (CSA) document entitled Z768-01 - Phase I Environmental Site Assessment (November 2001, reaffirmed 2016), to the environmental condition of portions of the McNaughton Road Grade Separation study area based on its historical and current use.

For the purpose of the Phase One ESA, the Phase One Property encompassed an area of approximately 1.7 hectares (ha) and comprised of seven (7) property parcels. In addition, portions of two potential property acquisitions were specifically assessed as part of the Phase One ESA to determine whether or not they constitute an area of potential environmental concern (APEC).

Background research and site reconnaissance were conducted to assess the environmental condition of the Phase One Property. Background research included review of historical records, including chain of title, and aerial photographs, previously completed Phase One ESA and other environmental reports, geological or geotechnical reports for the Maple GO Station, and City directories. York Region was also contacted to obtain records of environmental regulatory non-compliance, if any, concerning the Phase One Property.

A reconnaissance of the Phase One Property allowed for the evaluation of current and past uses and Potentially Contaminating Activities (PCA) on, in or under the Phase One Property and, as practicable, current, and past uses and activities and PCAs in the study area that may have and/or are currently impacting the environmental condition of the Phase One Property.

Based on the findings of the Phase One ESA, there is evidence of potential contamination associated with the Phase One Property. The findings of the Phase One ESA identified several past or present uses on, in or under the Phase One Property, and PCAs on, in or under the Phase One Property and within the study area, that comprise APECs on the Phase One Property where one or more contaminants may be present. The recommendations of the Phase One ESA identified that a Phase Two ESA should be completed for the project site. Following the recommendation, a detailed Phase Two ESA has been completed by Wood.

3.8 Traffic and Transportation Infrastructure

The existing traffic conditions within the McNaughton Road Grade Separation study area were compiled as part of a Traffic Impact Assessment (TIA) provided as Appendix G of this EPR Addendum. The traffic assessment study area is bounded by McNaughton Road to the north, Major Mackenzie Drive to the south, McNaughton Road to the east and Keele Street to the west.

Within the study area, the following 12 intersections were evaluated. Of these intersections, eight (8) are signalized and the remaining four (4) are unsignalized.

- Keele Street at McNaughton Road;

- McNaughton Road at Falvo Street;
- McNaughton Road at Rodinea Road;
- McNaughton Road at Lowe's North Driveway / Eaglet Court;
- McNaughton Road at Eagle Rock Way;
- Major Mackenzie Drive at McNaughton Road / Peter Rupert Avenue;
- Major Mackenzie Drive at Hill Street;
- Major Mackenzie Drive at City Hall Driveway;
- Keele Street at Major Mackenzie Drive;
- Keele Street at Killian Road / Railway Street;
- Keele Street at Masters Avenue; and
- Eagle Rock Way and Troon Avenue.

For the assessment of traffic operation at the above-mentioned intersections, the methodologies set out in the Highway Capacity Manual (Transportation Research Board 2016) were followed. The Highway Capacity Manual defines the Level of Service (LOS) for signalized and unsignalized intersections as a function of the average vehicle control delay. Delay is an indicator of how long a vehicle must wait to complete a movement and is represented by a letter between 'A' and 'F', with 'F' being the longest delay. The Highway Capacity Manual definitions for LOS are summarized in Table 3.8-1.

Table 3.8-1: Level of Service Definitions

Level of Service	Average Velocity Control Delay (second / vehicle)		Traffic Operations
	Signalized Intersection	Unsignalized Intersection	
A	≤10	≤10	Acceptable
B	>10 and ≤20	>10 and ≤15	Acceptable
C	>20 and ≤35	>15 and ≤25	Acceptable
D	>35 and ≤55	>25 and ≤35	Somewhat undesirable, congested
E	>55 and ≤80	>35 and ≤50	Undesirable, congested ¹
F	>80	>50	Unacceptable, very congested ¹

Notes:

¹ Turning movements with undesirable traffic operations are also identified as “critical movements” in this EPR.

Existing (2019) Traffic Operations

Traffic operations under existing conditions (2019) were analyzed for both the peak weekday AM (7:00 am to 9:00 am) and PM (4:00 pm to 6:00 pm) periods using the Synchro 9.0 software. Synchro 9 software utilizes Highway Capacity Manual (HCM) 2000 methodology published by the Transportation Research Board National Research Council and analyzes both signalized and unsignalized intersections in a road corridor or network considering the spacing, interaction, queues, and operations between intersections.

The Existing traffic volumes were obtained from the City of Vaughan and the York Region. For study intersections with turning movement counts older than two years, updated counts were obtained from traffic count surveys conducted by Traffic-Survey-Analysis Inc. (“TSA”) during both the weekday AM peak (7:00 am to 9:00 am) and weekday PM peak (4:00 pm to 6:00 pm) periods. The assessment of traffic operations at study intersection also considered the volume / capacity (v/c) ratios, for traffic movements and for the intersection as a whole. Critical movements were identified based on the following criteria outlined in the York Region guideline entitled “Transportation Impact Study (TIS) Guidelines for Development Applications” (York Region, 2007):

- An intersection where the overall v/c ratio will exceed 0.85 in urban areas or 0.70 in rural areas; and
- An individual movement v/c ratio will exceed 0.85 in urban areas or 0.70 in rural areas.

The analysis results indicated that all movements are operating with acceptable LOS and residual capacity under existing conditions except for the following movements which are operating with level of service “F” and v/c ratio over 1.00.

- Keele Street at McNaughton Road
 - Northbound through-right movement during the PM peak hour
- Major Mackenzie Drive at McNaughton Road
 - Southbound left movement during the PM peak hour
- Major Mackenzie Drive at Keele Street
 - Westbound left movement during the AM and PM peak hours
 - Southbound left and, northbound through-right movements during the AM and PM peak hours

The results of the queuing analysis indicated that the queue lengths under existing conditions can be accommodated within the available storage except for the following movements:

- Keele Street at McNaughton Road
 - Northbound through-right movement during the PM peak hour
- Major Mackenzie Drive at McNaughton Road
 - Eastbound through movement during PM peak hour
- Major Mackenzie Drive at Hill Street
 - Southbound left movement during the AM and PM peak hours
- Major Mackenzie Drive at Keele Street
 - Westbound left movement during the AM and PM peak hours
 - Southbound left movement during the PM peak hour

The results also indicated that some movements are operating with v/c ratios over 1.00. For left turn movements with v/c ratio over 1.00, a sensitivity analysis was carried out to account for vehicles that clear the intersection during the amber interval called “Sneakers”. The analysis assumed two (2) sneakers per cycle length, and they were removed from the volumes for corresponding movements. The results show that accounting for sneakers, the v/c ratio for left turns are less than or close to 1.0.

Business as Usual (2024) Traffic Operations

Existing traffic levels will continue to increase overtime as populations and traffic volumes increase. When construction activities for the McNaughton road Grade Separation begin in approximately 2024, the volume of traffic on the roadways will be higher than they were in 2019. This future baseline has been referred to as the “business as usual (2024)” scenario. The traffic operations for the business-as-usual 2024 traffic conditions were assessed for the weekday AM and weekday PM peak hours using the Synchro 9.0 software.

The future traffic volumes for the business as usual (2024) case were estimated based on a growth rate of 1% compounded per annum applied to the existing balanced volumes, the site traffic from the proposed Chelsea Eagle Point Development located

east of the intersection of McNaughton Road at Eagle Rock Way, the proposed net parking trips, and the GO station site generated trips for the 2024 horizon.

The analysis results indicated that the following study intersections are expected to experience major capacity constraints as several movements at these intersections are expected to operate with level of service 'F' and v/c ratio at or over 1.00 under the business as usual (2024) conditions. A level of service 'F' represents very congested conditions with excessive delays and a v/c ratio over 1.00 for a movement indicates that the movement is over capacity and the traffic volumes cannot be accommodated within the available capacity:

- McNaughton Road at Eagle Rock Way;
- Major Mackenzie Drive at McNaughton Road;
- Major Mackenzie Drive at Keele Street; and
- Eagle Rock Way and Troon Avenue

The queuing summary indicated that queue lengths for several movements at the study area intersections will exceed available storage during the weekday AM and PM peak hours. Table 3.8-2 shows the level of service at study intersections under existing conditions as well as under the business as usual (2024) conditions.

Table 3.8-2: Level of Service at Study Intersections under Existing Conditions (2019) and Business as Usual (2024) Conditions

Intersection	Control Type	Level of Service	
		Existing Conditions (2019)	Business as Usual (2024)
Keele Street at McNaughton Road	Signalized	C – E	C – E
McNaughton Road at Falvo Street	Unsignalized	A – D	A – E
McNaughton Road at Rodinea Road	Signalized	B	B
McNaughton Road at Lowe's Driveway / Eaglet Court	Unsignalized	A – D	A – D
McNaughton Road at Eagle Rock Way	Unsignalized	A – F	A – F
Major Mackenzie Drive at McNaughton Road / Peter Rupert Avenue	Signalized	D – E	D – E
Major Mackenzie Drive & Hill Street	Signalized	B	B – C

Intersection	Control Type	Level of Service	
		Existing Conditions (2019)	Business as Usual (2024)
Major Mackenzie Drive at City Hall Driveway	Signalized	B	C
Keele Street at Major Mackenzie Drive	Signalized	D – E	E – F
Keele Street at Killian Road / Railway Street	Signalized	A – B	A – B
Keele Street at Masters Avenue	Signalized	A	A
Eagle Rock Way and Troon Avenue	Unsignalized	A – F	A – F

3.9 Stormwater Management

A stormwater drainage analysis was completed in support of the proposed McNaughton Road Grade Separation to assess the existing and proposed drainage system performances and demonstrate that the proposed drainage improvements and stormwater quantity and quality management controls for this site are consistent with the criteria established by the City of Vaughan and Metrolinx.

An intermittent watercourse is located to the north of the site and flows to the west. McNaughton Road slopes from east to west following the general contour of the land. The topography of the area around the project site is generally sloping to the southwest and has elevations ranging from 270 m ASL at the northeast of the site to 230 m ASL southwest of the site. The minor system runoff from McNaughton Road is collected and conveyed in the storm sewer system. Major overland drainage conveyance is along road rights-of-way, following the existing roadway network in a northeast to southeast pattern. There are four (4) external drainage areas outside of McNaughton Road right-of-way limits that contribute to the exiting storm sewer. The external drainage areas consist of Rodinea Road, portions of the railway corridor, the Agro Lumber property, and small areas either side of the McNaughton right-of-way.

3.10 Hydrogeology

The proposed design under study for the McNaughton Road Grade Separation, as described in Section 2, is an elevated overpass across the rail line. As such, extensive dewatering will not be required to support the construction of the grade separation. Notwithstanding this, a hydrogeological baseline study of groundwater conditions has been completed, and included estimate of the dewatering requirements for construction, identifications of potentially affected wells and estimates of potential impacts to those wells caused by dewatering.

The residential and commercial properties within the study area obtain potable water from a municipal water supply and do not rely on wells for the supply of potable water.

The Hydrogeological Investigation Report identified that there are eighty-one (81) well records within a 500 m radius of the proposed grade separation. The usage of these wells includes 36 for observation, 12 for water supply, 12 for test holes, 7 as abandoned, 3 for dewatering, and 11 as no status. The proximity to the former Keele Valley Landfill provides an explanation for the relatively high number of wells identified.

3.11 Utilities

A preliminary list of the owners of utilities along the McNaughton Road is presented in Table 3.11-1.

Table 3.11-1: Utilities Along McNaughton Road

Utility Type	Owner
Watermains, Sanitary Sewers, Storm Sewers and Street Lights	City of Vaughan / Region of York
Pipelines and Gas Distribution Infrastructure	Enbridge Gas Inc.
Hydro Infrastructure, Utility Poles and Street Lighting	Alectra Utilities
Railway Signal Barriers and Infrastructure	Metrolinx
Communications Infrastructure	Bell Canada

4.0 Impact Assessment of the Preferred Design

4.1 Natural Environment and Tree Inventory

4.1.1 Construction

Aquatic Environment

No direct loss of aquatic habitat will occur at the grade separation location since no watercourses or open water bodies are present within the study area.

Terrestrial Environment

This is a highly disturbed area with poor habitat quality. Although there will be a need to remove street trees and boulevard area during construction, no long-term impacts are anticipated.

Wildlife

Generally, potential effects on wildlife and wildlife habitat from construction include direct mortality from construction vehicles, habitat destruction through vegetation removal, habitat degradation through spills, and sensory disturbance of wildlife during construction. However, the densely urban landscape at the study area precludes an abundance of wildlife and/or wildlife habitat. Wildlife potentially using the site is limited to non-native and/or urban adapted bird species possibly nesting in street trees within the project footprint.

The aforementioned bird species are relatively abundant throughout the region and tolerant of urban conditions. The general disturbance from construction (such as noise and human presence) will cause such species to avoid the area, with the limited overall effect. There is potential for construction to disturb or destroy nests of migratory birds, particularly during vegetation clearing.

Other temporary impacts to wildlife during construction may include increased noise and lighting in areas adjacent to the project footprint. Wildlife that has the potential to be present adjacent to active construction are species that are already acclimatized to the disturbed urban environment and impacts to these species from increased noise and lighting are expected to be low.

Significant Wildlife Habitat

As discussed in Section 3.1.4, there is no candidate significant wildlife habitat at this location, and therefore, there will be no effects on significant wildlife habitat during construction.

Species at Risk

As discussed in Section 3.1.5, there is a low probability for SAR existence within the study area, and therefore, it is not anticipated that SAR will be affected during construction.

Significant Natural Features

As discussed in Section 3.1.6, no significant natural features were identified within the study area and therefore, no direct or indirect effects on significant natural features are anticipated during construction.

4.1.2 Operations and Maintenance

Aquatic Environment

As discussed in Section 3.1.1, there are no aquatic habitat features present within the study, and therefore, no effects on the aquatic environment are anticipated during the operations and maintenance phase.

Terrestrial Environment

Loss of street trees will be limited to clearing of work areas. It is not anticipated that the terrestrial environment will be affected by the Project during the operations and maintenance phase.

Wildlife

The proposed grade separation will create a new barrier to non-avian wildlife crossing, resulting in potentially less risk of mortality. Therefore, it is not anticipated that wildlife will be affected by the project during operations, as the new structure and property fencing will limit the ability of wildlife to enter the corridor or cross tracks. While the new barriers will also potentially affect wildlife movement, the effects on wildlife are anticipated to be limited.

Significant Wildlife Habitat

As discussed in Section 3.1.4, there is no candidate significant wildlife habitat at this location, and therefore, there will be no effects on significant wildlife habitat during the operations and maintenance phase.

Species at Risk

As discussed in Section 3.1.5, there is a low probability for SAR existence within the study area, and therefore, it is not anticipated that SAR will be affected during the operations and maintenance phase.

Significant Natural Features

As discussed in Section 3.1.6, no significant natural features were identified within the study area and therefore, no direct or indirect effects on significant natural features are anticipated during the operations and maintenance phase.

4.2 Cultural Heritage

4.2.1 Construction

A preliminary impact assessment was completed to evaluate potential impacts to three (3) identified cultural heritage resources, including two (2) built heritage resources (BHR) and one (1) cultural heritage landscape (CHL) within the study area. For the

purpose of this impact assessment, the following definitions of direct, indirect and positive impacts are used:

- **Direct Adverse Impact:** A permanent or irreversible impact that negatively affects the CHVI of a property or results in the loss of one or more heritage attributes on all or part of the provincial heritage property.
- **Indirect Adverse Impact:** An impact that is the result of an activity on or near the property that may adversely affect its CHVI and/or heritage attributes.
- **Positive Impact:** An impact that may positively affect a property by conserving or enhancing its CHVI and/or heritage attributes (Government of Ontario 2017).

The following describes the anticipated impacts on the identified cultural heritage resources within the study area:

- **Railway Station (CHR1):** This built heritage resource is designated under the Heritage Railway Stations Protection Act, under Part V of the Ontario Heritage Act as part of the Village of Maple Heritage Conservation District, identified as a Provincial Heritage Property (local significance) under Part III.1 of the Ontario Heritage Act, and is listed on the City of Vaughan Heritage Inventory. Although the project footprint extends into the Maple GO Station property, no temporary or permanent property impacts are anticipated. In addition, no work is planned within 215 metres of the train station building. Accordingly, no direct or indirect impacts to the cultural heritage value of the Maple GO Station or the Village of Maple HCD are anticipated.
- **Heritage Conservation District (CHR2):** The Village of Maple HCD was designated in 2007 and is generally defined by Major Mackenzie Drive West (between Gram Street and Hill Street) and Keele Street (from 125 metres south of Fieldgate Drive to 200 meters north of McNaughton Road). The HCD includes 265 properties and all lands within the HCD boundaries depicted in By-law 167-2007 are designated under Part V of the Ontario Heritage Act. No impacts are anticipated to this cultural heritage landscape.
- **Residence (CHR3):** The western frontage of 10287/10311 Keele Street is designated under Part V of the Ontario Heritage Act as part of the Village of Maple HCD per the boundaries shown in By-law 167-2007. No impacts are anticipated to these buildings or the designated section of 10287/10311 Keele Street within in the HCD boundaries. Accordingly, no impacts to the cultural heritage attributes of the Village of Maple HCD are anticipated and no further work is required.

In summary, there are no impacts anticipated to the three (3) identified cultural heritage resources, including two (2) built heritage resources and one (1) cultural heritage landscape within the study area as shown in Table 4.2-1.

Table 4.2-1: Summary of Impact Assessment – McNaughton Road Grade Separation

CHR No.	Property Type	Location	Heritage Recognition	Type and Description of Potential/Anticipated Impact ¹	Mitigation Measures: i. Mitigation Options ii. Mitigation Recommendation
CHR1	-BHR -Railway Station -Part of HCD	30 Station Street, City of Vaughan	-Designated under the <i>Heritage Railway Stations Protection Act</i> -Designated under Part V of the <i>Ontario Heritage Act</i> as part of the Village of Maple Heritage Conservation District -Identified as a Provincial Heritage Property (local significance) under Part III.1 of the <i>Ontario Heritage Act</i> -Listed on the City of Vaughan Heritage Inventory	No anticipated Impacts	None
CHR 2	-CHL -HCD	Includes 265 properties and is generally defined by Major Mackenzie Drive West (between Gram Street and Hill Street) and Keele Street (from 125 metres south of Fieldgate Drive to 200 metres north of McNaughton Road)	-Designated under Part V of the <i>Ontario Heritage Act</i>	No anticipated Impacts	None
CHR 3	-BHR -Residence -Part of HCD	10287/10311 Keele Street	-Western frontage is designated under Part V of the <i>Ontario Heritage Act</i> as part of the Village of Maple HCD	No anticipated Impacts	None

¹ See section above for information on direct vs. indirect impacts.

4.2.2 Operations and Maintenance

No impacts are anticipated to the three (3) identified cultural heritage resources, including two (2) built heritage resources and one (1) cultural heritage landscape within the study area during the operations and maintenance phase.

4.3 Archaeology

4.3.1 Construction

The findings of the Stage 1 Archaeological Assessment indicated that there is a low potential for archaeological resources on the portion of the study area that has been previously disturbed. Since 83% (2.56 ha) of the study area is disturbed, it is highly unlikely that there would be any impacts on archaeological resources as a result of the project. The findings of the Stage 1 Archaeological Assessment did identify that the balance of the study area (17%, 0.51 ha), consisting of landscaped land in an urban setting (unploughable land), has archaeological potential and is recommended for additional archaeological assessment prior to ground disturbing activities associated with the Project.

A copy of the Stage 1 Archaeological Assessment report can be found in Appendix C.

4.3.2 Operations and Maintenance

There will be no activities during the operations and maintenance stage that could result in an impact to archaeological resources.

4.4 Socio Economic and Land Use

4.4.1 Construction

Planning Policy Context

The construction of the proposed grade separation will result in temporary modifications to property use and traffic flows in the vicinity of the construction. Where relevant policies exist, construction will be conducted within the context of those policy frameworks.

Land Use

The construction activities required to support the proposed grade separation will include construction of laydown areas, as well as a proposed two-lane detour road. The construction site will be accessed directly from McNaughton Road. Laydown areas will be located to the south-east quadrant of the McNaughton Road/ Barrie Rail Corridor, utilizing approximately 90 parking bays in the Maple GO Station parking lot. As a result, the driveway allowing access from the Maple GO Station parking lot to McNaughton Road will be eliminated. The two-lane detour road is proposed to be constructed to the north of the existing roadway and will require the acquisition of lands currently used for industrial purposes. The completed grade separation will be within the existing ROW of McNaughton Road.

Temporary nuisance effects from increased noise, dust, and vibration may be experienced on lands in the vicinity of the proposed grade separation. Nearby residents,

businesses, and institutions may experience nuisance effects resulting from increased noise and vibrations levels due to construction equipment and activities. Enjoyment of public and private recreational uses within the study area may be affected by increased noise levels due to construction equipment and activities. However, construction activities will need to demonstrate compliance with the regulated noise and vibration limits for construction activities.

Aesthetic / Visual

It is expected that during construction there will be temporary nuisance effects from increased noise, dust, and vibration that will have aesthetic effects on the land nearby residences, businesses, and institutions. However, construction activities will need to demonstrate compliance with the regulated noise and vibration limits for construction activities.

The residential properties in the vicinity of the proposed grade separation may also experience temporary visual effects as a result of temporary storage sites for equipment, staging / laydown areas, stockpiling of materials, and other construction activities. During construction, some trees within the existing ROW may also need to be removed. This may result in the loss of a visual buffer enhancing the visual effects of the construction activities. While the construction activities may be visible from residential properties, the construction activities are not expected to dramatically alter the nature of the views as they currently include industrial and commercial facilities.

At the end of construction, temporary storage sites for equipment, staging / laydown areas, stockpiling of materials, and other construction activities will be removed and no longer affect the views.

Neighbourhood Characteristics

The existing neighbourhood characteristics in the vicinity of the proposed grade separation will not be dramatically altered as a result of the construction activities. McNaughton Road between Falvo Street and Rodinea Road is primarily a transportation corridor. Residential developments and the Maple GO Station back onto McNaughton Road on the south side. Two (2) industrial facilities back onto McNaughton Road on the north side.

The construction of the proposed grade separation will result in commissioning of temporary storage sites for equipment, staging / laydown areas, stockpiling of materials, and other construction activities. While these activities are not in keeping with the neighbourhood characteristics along McNaughton Road, they are temporary and not a dramatic change from the current appearance as seen from the residential properties.

Transportation

There may be a temporary inconvenience to transit riders, as the construction of the proposed grade separation could affect rail infrastructure. As a result, this may have a temporary effect on rail service, causing occasional delays.

Any temporary road closures or lane restrictions necessary for construction activities, including the closure of the driveway from the Maple GO Station parking lot to

McNaughton Road, may affect access to residences, parks, businesses, and institutions within the construction area. Altered traffic routes and closures may affect the operation of a business, particularly if delivery and customer access is disrupted. Access restrictions on pedestrian and walking / cycling routes or sidewalks can also affect travel for those without a vehicle, including the elderly and others with mobility challenges. Recreational use of sidewalks for recreation or exercise can also be affected.

4.4.2 Operations and Maintenance

Planning Policy Context

The Project is consistent with relevant provincial and municipal land use policies, which support transportation choices that increase the use of active transportation and public transit. Through the introduction of a grade separation at McNaughton Road, and constructing related infrastructure, including a multi-use path, the Project will facilitate active transportation and encourage community connectivity. The proposed grade separation will support the two-way, all-day service, which will greatly improve the public transit service within southern Ontario and thus increase ridership the use of transit. The Project will improve efficiency, and reliability of the GO Transit service.

The two-way, all-day service will increase ridership, reducing the number of vehicles within the region and ultimately leading to a significant reduction in greenhouse gas emissions. The proposed grade separation will eliminate idling vehicles at the crossing, which will improve air quality and address climate change concerns.

The Project will result in community benefits, such as providing local job opportunities during the construction phase. Metrolinx will also ensure that public space, within the Metrolinx right-of-way (ROW) is designed in a manner that enhances community benefit.

Land Use

The completed grade separation will include the removal of the at-grade crossing at McNaughton Road and the Barrie Rail Corridor, the reconfiguration of the sidewalks and multi-use pathways within the project footprint, and the closure of the driveway from the Maple GO Station parking lot to McNaughton Road. After a brief adjustment period, it is anticipated that public will become familiar with the reconfiguration of the roads, sidewalks and multi-use pathways within the project footprint, and changes to access from the Maple GO Station.

It is expected that, during the construction of the proposed grade separation, trees within the existing ROW may be removed, resulting in loss of the visual buffer that previously screened views of the rail corridor. This may affect the enjoyment for certain land uses by altering the existing viewsheds and landscape conditions.

Aesthetic / Visual

The proposed grade separation will be clearly visible from the nearby residential properties. Additionally, some trees within the existing ROW may have been removed during the construction activities, resulting in the loss of a visual buffer enhancing the visual effects of the proposed grade separation. While the proposed grade separation may be visible from residential properties, it not expected that the proposed grade

separation will alter the nature of the views as they currently include McNaughton Road and the industrial and commercial facilities to the north of it.

Neighbourhood Characteristics

The existing neighbourhood characteristics in the vicinity of the proposed grade separation will not be dramatically altered as a result of the construction activities. McNaughton Road between Falvo Street and Rodinea Road is primarily a transportation corridor. Residential developments and the Maple GO Station back onto McNaughton Road on the south side. Two (2) industrial facilities back onto McNaughton Road on the north side. Once completed, the proposed grade separation will be in keeping with the current neighbourhood characteristics along McNaughton Road.

Transportation

The proposed McNaughton Road Grade Separation does not result in additional traffic lanes, and thus does not increase the capacity of the roadway. Therefore, the grade separation, itself, does not have a direct effect on traffic within the study area. However, the grade separation will support enhanced rail service along the Barrie Rail Corridor.

4.5 Air Quality

4.5.1 Construction

Construction Activities

Air emissions from construction activities are expected to be primarily associated with fuel combustion from construction vehicles and equipment, as well as from fugitive dust. The results of the Construction Related Air Quality Effects Assessment (Appendix E-1) indicated, that with adequate control of fugitive dust emissions (PM₁₀ and PM_{2.5}), the potential for air quality in excess of provincial ambient criteria are limited to the immediate vicinity of the construction activities. Air quality predicted to exceed provincial ambient criteria were not predicted to extend to sensitive receptors and residences when mitigation measures of fugitive dust emissions are implemented.

The results of the Construction Related Air Quality Effects Assessment (Appendix E-1) also indicated that there is the potential for air quality vehicle exhaust emissions to exceed the provincial ambient criteria. Air quality predicted to exceed provincial ambient criteria can be restricted to the immediate vicinity of the construction activities and not extend to sensitive receptors and residences with the implementation of adequate control vehicle exhausts. Appropriate mitigation measures for vehicle exhaust during construction are set out for mitigating exhaust emissions of diesel-powered trains during operations (see Table 4.13-1).

Construction Traffic

During the construction of the grade separation, traffic along McNaughton Road will be partially diverted to a detour road. The proposed detour road will be constructed to the north of McNaughton Road and will thus be further from the sensitive receptors on this road. As a result, the potential local air quality effects associated with traffic will be lower due to the increased separation distances.

The proposed detour road will include a single lane in either direction and thus will be able to carry less traffic than the existing roadway. Therefore, the potential air quality effects at the sensitive receptors due to traffic along McNaughton Road will be decreased as a result of lower traffic volumes.

4.5.2 Operations and Maintenance

4.5.2.1 Grade Separation

Once construction activities are completed, the grade separation is not anticipated to have any measurable negative effects on local air quality relative to the conditions that would have occurred in the absence of the grade separation. Therefore, there are no potential adverse effects on air quality as a result of the grade separation during the operations and maintenance phase.

4.5.2.2 Rail Operations

A regional air quality effects assessment was completed for the GO Rail Network to assess the air quality effects associated with the increased rail service and conversion of rail corridors from diesel to electric propulsion. Metrolinx currently has a fleet of 91 diesel locomotives, of which 17 are relatively new or recently refurbished models that comply with the most stringent emission limits (Tier 4), while the remainder cover a range of ages and emission levels (Tier 0 to Tier 3). RWDI was retained to conduct assessments of air quality effects at a local scale throughout the relevant portions of the network including the Barrie Rail Corridor. A complete report (RWDI 2020) is attached as Appendix E-2 of this EPR Addendum.

Two scenarios were analyzed, consisting of the baseline emissions from rail activity in 2015, and future emissions after the implementation of the Electrification project. The assessment of future operations was based on Metrolinx's most recent projected future train service schedule established for the year 2037.

All trains in Scenario 1 were assumed to be diesel-powered. For diesel-powered trains, each locomotive includes a main engine for motive power, and a generator, also known as a Head End Power (HEP) unit, to provide electricity to passenger cars for lighting, heating/cooling, etc. Both the engine and the HEP unit emit contaminants of concern through the combustion of diesel fuel.

Scenario 2 is based on train traffic outlined in the future train service schedule. The future train service schedules outline the mix of diesel and electric trains that will operate on each corridor, as well as further details on locomotive consists (e.g. D1L6, with one diesel engine and 6 passenger cars, or D2L12, with two diesel engines and 12 passenger cars). For electric-powered trains, the motive power and power to the HEP unit are all supplied by electricity. In this case, there are no direct combustion emissions from the trains. However, there are indirect emissions incurred in the electricity generation process, which can be estimated based on electricity generation scenarios.

Criteria Air Contaminants (CACs) and Greenhouse Gases (GHGs) considered for the regional air quality study include:

- Carbon monoxide (CO);

- Nitrogen oxides (NO_x);
- Respirable Particulate Matter with a diameter of 2.5 microns or less (PM_{2.5}); and
- Carbon dioxide equivalents (CO_{2e}).

The results of the assessment indicated that with the proposed future operations (2037 service levels with electrification) emissions of criteria air contaminants NO_x and PM_{2.5} are predicted to be lower than in the baseline scenario (2015) in the average electricity generation scenario. PM_{2.5} and NO_x emissions are expected to be slightly higher in the capacity generation scenario. In the extreme scenario of 100% fossil-fuel-based electricity generation, emissions from all contaminants are expected to increase when compared to the baseline. Emissions of CO and CO_{2e} will increase, to various degrees, compared to the baseline, depending on the electricity generation scenario. In all cases, the impact on province-wide emissions of air contaminants compared to the total for all provincial sources is small (<1%).

4.6 Noise and Vibration

4.6.1 Construction

The construction of the McNaughton Road Grade Separation was identified as having potential effects on noise and vibration related to the following activities:

- The equipment and activities associated with the construction of the grade separation;
- The traffic using the detour road during construction; and
- The potential rail diversion during construction.

Noise

The predicted construction noise effects associated with the McNaughton Road Grade Separation are described in detail in the Construction Related Noise and Vibration Assessment (Appendix F-1) and indicated the following:

- Based on the results of the noise modelling, there is a potential that the activities associated with the construction of the grade separation could result in noise levels that exceed the limits proposed by Metrolinx Guideline. This is illustrated in the Construction Related Noise and Vibration Assessment using a series of figures showing potential Zones of Influence (NZOI), specifically the residential areas within McNaughton Heights to the west of the grade separation, and the townhouse development to the east of the GO Station. The predicted potential impacts would only be realized if the construction activities were to advance without specific consideration for time of day and sensitivity of adjacent receptors.
- Construction noise levels associated with the detour road were predicted to be lower than the baseline noise conditions due to the following reasons:
 - The proposed detour road will be constructed to the north of McNaughton Road and will thus be further from the sensitive receptors. As a result, the noise levels associated with traffic will be lower due to the increased separation distances.

- The proposed detour road will include a single lane in either direction, and thus will be able to carry less traffic. Therefore, the noise levels at the sensitive receptors due to traffic along McNaughton Road will be decreased as a result of lower traffic volumes.
- During construction, rail operations on the existing track may need to be shifted approximately 4 m to the west. As a result, the rail traffic may move closer to the sensitive receptors on the west side of the existing rail corridor, resulting in increased noise levels. However, the potential increase in noise is offset by an increased attenuation effect of the existing barrier situated west of the diversion track (see Figure 4, Appendix F-1). Overall, the potential increase in noise levels for residences to the west of the grade separation will be less than 1 dB.

Vibration

The predicted construction vibration effects associated with the McNaughton Road Grade Separation are described in detail in the Construction Related Noise and Vibration Assessment (Appendix F-1) and indicated the following:

- Based on the results of the vibration modelling, there is a potential that the activities associated with the construction of the grade separation could result in vibration levels that exceed the limits proposed by Metrolinx Guideline. This is illustrated in the Construction Related Noise and Vibration Assessment using a series of figures showing potential Zones of Influence (VZOI), specifically the residential areas within McNaughton Heights to the west of the grade separation, and the townhouse development to the east of the GO Station. The predicted potential impacts would only be realized if the construction activities were to advance without specific consideration for sensitivity of adjacent receptors.
- There are no expected vibration impacts from the diversion road traffic. Traffic induced vibrations are typically not a concern for potential impacts since their Peak Particle Velocity (PPV) levels are typically significantly less than the damage criteria defined in FTA manual.
- During construction, rail operations on the existing track may need to be shifted approximately 4 m to the west. As a result, the rail traffic may move closer to the sensitive receptors on the west side of the existing rail corridor, and further from the sensitive receptors on the east. Overall, the potential rail diversion is predicted to increase vibration effects by 21% at the nearest residential receptors to the west and decrease by 8% at the nearest residential receptors to the east. The relative increase in existing vibration levels at residential receptors to the west would be below the 25% limit that would otherwise require mitigation measures to be evaluated under the MOE draft protocol.

4.6.2 Operations and Maintenance

4.6.2.1 Grade Separation

Based on the results of the traffic assessment, there will no change to the volume of traffic along McNaughton Road as a result of the grade separation, nor will the grade separation result in a change in the capacity of McNaughton Road. Therefore, there will

be no measurable change in the vehicle noise emitted from the traffic along McNaughton Road as a result of the grade separation.

As the grade separation will change the relative geometry between the roadway and sensitive receptors located south of McNaughton Road, there is a potential that the noise levels during operations and maintenance at these sensitive receptors maybe different as a result of the grade separation. Since this analysis will require the final design characteristics of the grade separation, a detailed analysis of the changes in noise levels at sensitive receptors resulting from the grade separation will need to be completed at the detailed design stage.

There are no operations and maintenance vibration effects anticipated as a result of the grade separation.

4.6.2.2 Rail Operation

In addition to assessing the impacts of the proposed McNaughton Road Grade Separation, Metrolinx completed a corridor wide noise and vibration study to assess the potential noise and vibration impacts of the increased train service along the Barrie Rail Corridor. The assessment was originally completed by RWDI in 2017, as part of the GO Electrification EA. A reassessment of the potential noise and vibration impacts was completed by Gannett Fleming in 2020 to account for the changes to the future service levels and proposed infrastructure since 2017. Refer to Appendix F-2 for the corridor wide noise and vibration study report, *Noise and Vibration Study Barrie Rail Corridor GO Rail Network Electrification Project*. (Gannett Fleming 2020)

Following the MOEE/GO Protocol, the assessment of sound and vibration effects was based on the difference in predicted levels from existing (2015) to future (2037) scenario. Existing daily service levels based on maximum service levels in 2015, as previously assessed in the 2017 EPR consisted of:

- 14 revenue diesel trains; and
- 13 non-revenue diesel trains.

In the Ultimate Capacity scenario for Year 2037, the train fleet travelling on the Barrie Rail Corridor will be both electric and diesel. Trains travelling the Barrie Rail Corridor daily will be:

- 13 revenue diesel trains;
- 232 revenue electric trains; and
- 130 non-revenue electric trains.

In instances where defined thresholds were reached or exceeded, possible mitigation measures were investigated. Sound mitigation typically involves proposing walls or barriers to block receptors (i.e., houses) from the sound of trains, but can also involve reducing sound levels at the source (e.g., quieter trains) or at the receptor location (e.g., more sound-proof windows). Barriers effectively reduce effects of all rail operations on existing and new tracks. Vibration mitigation typically involves installing technologies such as ballast mats under new rails or switches, which absorb vibration energy and reduce the effects on nearby receptors.

For the purpose of this assessment, various receptors including the following land uses were selected:

- Residences;
- Hotels, motels and campgrounds;
- Schools, universities, libraries and daycare centres;
- Hospitals and clinics, nursing / retirement homes;
- Churches and places of worship;
- Planned residential developments with approved building permits from the City of Toronto; and
- Vacant lots that are currently zoned for residential use.

Noise

The sound from rail-related operations was assessed against the criteria defined in the MOEE/GO Protocol. The daytime (16-hr, 0700h-2300h) equivalent sound level (LEQ) produced by future rail service operation of the project should not exceed the higher of:

- Daytime Pre-project noise: ambient sound level, combined with the sound level from existing rail activity; or
- 55 dBA LEQ (16-hr).

Furthermore, the night-time (8-hr, 2300h-0700h) LEQ should not exceed the higher of:

- Night-time Pre-project noise: ambient sound level, combined with the sound level from existing rail activity; or
- 50 dBA LEQ (8-hr).

As stated in the MOEE/GO Protocol, the effects from sounds at a receptor shall be expressed in terms of the Adjusted Noise Impact. The Adjusted Noise Impact is based on the difference between the objective and Post-project noise (i.e., including ambient sound and sound from Post-project rail). According to the MOEE/GO Protocol, the Adjusted Noise Impacts associated with the rail operations shall be rated with respect to the objectives as follows:

- Insignificant: Adjusted Noise Impacts between 0 and 2.99 dB;
- Noticeable: Adjusted Noise Impacts between 3 and 4.99 dB;
- Significant: Adjusted Noise Impacts between 5 and 9.99 dB; and
- Very significant: Adjusted Noise Impacts above 10 dB.

The Pre-project (2015) and Post-project (2037) sound levels were modelled for the entire study area and results at each discrete receptor were used to establish the Adjusted Noise Impact. Receptor 032, a single detached dwelling located approximately 50 m from the tracks, was identified to be the closest receptor to the proposed McNaughton Road Grade Separation.

The results of the noise modelling indicated that the Adjusted Impact Rating for Receptor 032 is Insignificant and there are no mitigation measures required (Refer to Table 4.6-1). Refer to Appendix F-2 for future details regarding the results of the noise modelling.

Vibration:

Although it is possible that vibration effects from existing infrastructure and rail operations may already exceed desired objectives at some receptors, the assessment focus is on changes to vibration effects resulting from the project. The MOEE/GO Protocol outlines desired objectives for vibration levels from GO Transit Projects. The desirable objective of the MOEE/GO Protocol is that the RMS velocity of vibration produced by the future GO Transit operations at a receptor should not exceed:

- 0.14 mm/s; or
- The existing vibration levels where existing operations already produce vibration that exceeds 0.14 mm/s.

The results of the vibration modelling indicated that the operational vibration levels are not expected to exceed the MOEE/GO Protocol vibration limits at receptors along the section of the rail corridor that crosses the proposed McNaughton Road Grade Separation and hence no mitigation is proposed for this section of the rail corridor. Refer to Appendix F-2 for further details regarding the results of the vibration modelling.

Table 4.6-1: Noise Modelling Results

Receptor	Period	Predicted Project Noise Levels (dBA)		Objective	Adjusted Noise Impact (dB)	Adjusted Noise Rating	5 dB or Greater Increase?	Investigate Mitigation
		Pre-Project	Post-Project					
032	Daytime	53.3	49.5	55.0	-5.5	Insignificant	No	No
	Night-time	51.3	46.7	51.3	-4.6	Insignificant	No	

4.7 Contaminated Materials

4.7.1 Construction

There are two potential effects identified with respect to contaminated materials during the construction phase, namely: the release of contaminated materials during construction as a result of spills and accidents; and the management of excavated materials that were contaminated by past activities. These are described more fully below.

Spills and Accidents

The construction of the McNaughton Road Grade Separation will require the use of heavy construction equipment that will need to be re-fueled on site, as well as maintained on site. These activities raise the potential for spillage of hydrocarbon-based materials onto the soils within the construction footprint that could result in an impact if not managed and remediated appropriately during construction.

During the construction activities, excavation equipment has the potential to interact with underground utilities and features that could result in the release of materials that could contaminate the surrounding environment if appropriate containment and remediation activities are not implemented.

4.7.2 Operations and Maintenance

No impacts are anticipated during the operation and maintenance phase.

4.8 Traffic and Transportation Infrastructure

4.8.1 Construction

The Traffic Impact Assessment for McNaughton Road Grade Separation (see Appendix G) analysed the traffic operations within the study area during the construction phase. The construction of the McNaughton Road Grade Separation is anticipated to commence in approximately 2024. As described in section 3.1.8, traffic volumes in the study area are expected to grow from the current conditions as a result of population growth. These increased traffic volumes were identified to result in capacity constraints at the following intersections:

- McNaughton Road at Eagle Rock Way;
- Major Mackenzie Drive at McNaughton Road;
- Major Mackenzie Drive at Keele Street; and
- Eagle Rock Way and Troon Avenue.

To address these constraints, a series of enhancements (see Appendix G) have been identified to increase the capacity of the existing road infrastructure prior to the commencement of construction activities. However, discussions are currently underway with the City of Vaughan and York Region regarding the suitability of these enhancements within the overall road infrastructure plans. Since these discussions are still in early stages, all of the results presented are for the existing road infrastructure without enhancements.

In order facilitate construction of the overpass bridge, McNaughton Road between Falvo Street and Rodinea Road will need to be closed. During construction, a detour is proposed to be constructed north of McNaughton Road which will have a single lane in each direction. The detour will start east of Falvo Street and tie in back to McNaughton Road just west of Rodinea Road and will be in place until the construction of the overpass is completed.

Traffic operations for the construction conditions (circa 2024) were assessed for the weekday AM and weekday PM peak hours. The future traffic volumes were estimated by adding a minimal volume of 5 construction trucks per direction to access the construction site during the AM and PM peak hours to the future (2024) business as usual traffic volumes (see Section 3.8).

Based on the results of the traffic modelling, the construction of the McNaughton Road Grade Separation was predicted to result in levels of service “F” at three of the intersections modelled. It should be noted that these three intersections were already operating level of service “F” under existing conditions. Table 4.8-1 summarizes the level of service at study intersections during construction (2024) relative to business as usual (2024) traffic conditions.

Table 4.8-1: Level of Service at Study Intersections during Construction

Intersection	Control Type	Level of Service	
		Business as Usual (2024)	Construction (2024)
Keele Street at McNaughton Road	Signalized	C – E	C – D
McNaughton Road at Falvo Street	Unsignalized	A – E	A – D
McNaughton Road at Rodinea Road	Signalized	B	B
McNaughton Road at Lowe's Driveway / Eaglet Court	Unsignalized	A – D	A – C
McNaughton Road at Eagle Rock Way	Unsignalized	A – F	A – F
Major Mackenzie Drive at McNaughton Road / Peter Rupert Avenue	Signalized	D – E	D – E
Major Mackenzie Drive & Hill Street	Signalized	B – C	C
Major Mackenzie Drive at City Hall Driveway	Signalized	C	C – D
Keele Street at Major Mackenzie Drive	Signalized	E – F	E – F
Keele Street at Killian Road / Railway Street	Signalized	A – B	A – B
Keele Street at Masters Avenue	Signalized	A	A – B
Eagle Rock Way and Troon Avenue	Unsignalized	A – F	A – F

4.8.2 Operations and Maintenance

Traffic operations during the opening year (2028) as well as five years after the opening year (2033) were analysed to evaluate the future traffic flow patterns at the intersections within the study area. The future (2028 and 2033) traffic volumes were estimated based on a growth rate of 1% compounded per annum applied to the existing balanced volumes, the site traffic from the proposed Chelsea Eagle Point Development, the proposed net parking trips, and the GO station site generated trips for the future (2028 and 2033) horizon.

Because the McNaughton Road Grade Separation does not result in additional traffic lanes, and thus does not increase the capacity of the roadway, the grade separation

itself does not have a direct effect on the capacity of the intersections evaluated. Given that the McNaughton Road Grade Separation will not increase the capacity of the roadway, the future (2028 and 2033) levels of service for the intersections within the study area will be the same with the grade separation in place as they would have been with no grade separation. However, the analysis results do indicate that several intersections are expected to experience capacity constraints as a result of the future traffic, unrelated to the grade separation. Table 4.8-2 summarizes the level of service at study intersections during the opening year (2028) and five years after the opening year (2033), with and without the grade separation.

Table 4.8-2: Level of Service at Study Intersections during Operations

Intersection	Control Type	Level of Service ¹ without grade separation		Level of Service ¹ with grade separation	
		(2028)	(2033)	(2028)	(2033)
Keele Street at McNaughton Road	Signalized	D – E	D – F	D – E	D – F
McNaughton Road at Falvo Street	Unsignalized	A – F	A – F	A – F	A – F
McNaughton Road at Rodinea Road	Signalized	B – C	B – C	B – C	B – C
McNaughton Road at Lowe's Driveway / Eaglet Court	Unsignalized	A – D	A – E	A – D	A – E
McNaughton Road at Eagle Rock	Unsignalized	A – F	A – F	A – F	A – F
Major Mackenzie Drive at McNaughton	Signalized	E	E – F	E	E – F
Major Mackenzie Drive & Hill Street	Signalized	C	C	C	C
Major Mackenzie Drive at City Hall Driveway	Signalized	C – D	C – E	C – D	C – E
Keele Street at Major Mackenzie	Signalized	E – F	F	E – F	F
Keele Street at Killian Road / Railway Street	Signalized	A – B	A – B	A – B	A – B
Keele Street at Masters Avenue	Signalized	A	A	A	A
Eagle Rock Way and Troon Avenue	Unsignalized	A – F	A – F	A – F	A – F

¹ The McNaughton Road Grade Separation will not alter the capacity or traffic flow patterns along the roadway. Therefore, the modelled level of service with the grade separation will be the same as the modelled level of service without the grade separation.

4.9 Stormwater Management

4.9.1 Construction

The existing stormwater infrastructure currently managing runoff along McNaughton Road will need to be decommissioned prior to construction activities, and a specific construction stormwater management strategy will need to be developed as part of the detailed design stage to manage the following:

- Stormwater within the project footprint;
- Stormwater collected from the upstream sections of McNaughton Road; and
- Discharge of stormwater into storm sewers downstream of the project footprint.

4.9.2 Operations and Maintenance

At the completion of construction activities, the integrity of the existing stormwater management system along McNaughton Road will have been re-established. The design for this stormwater management system will be developed as part of the detailed design stage. The detailed design of the stormwater management system will need to include accommodation for changes to the stormwater characteristics resulting from the construction of the grade separation.

4.10 Hydrogeology

4.10.1 Construction

As identified in the Hydrogeological Investigation Report, some level of dewatering will be required to support the construction activities. The rate of dewatering identified ranged between 10,000 L/day and 280,000 L/day. However, the individual rate of dewatering might fluctuate from day to day. The dewatering of groundwater may result in the following effects:

- The disposal of dewatering water into the municipal sewer system; and
- Potential for dewatering activities to result in a drawdown of the local groundwater levels that will impact local wells.

Disposal of Dewatering Water into Municipal Sewer System

To support the proposed dewatering activities, it will be necessary to dispose of the dewatering water into the municipal sewer systems or identify alternative disposal methods. Both the quantity and quality of the dewatering water will determine the appropriate disposal method.

Groundwater quality testing conducted at McNaughton Road indicated elevated concentrations of numerous compounds. In fact, groundwater concentrations were found to be in excess of the storm sewer limits for Total Suspended Solids (TSS), phosphorus, total Kjeldahl nitrogen, total metals (aluminum, copper, manganese). Therefore, treatment may be required to enable discharge to storm sewer. An alternative option for disposal may include discharge to the sanitary sewer if results indicated compliance of the applicable Sewer Bylaw limits (which are less restrictive for sanitary sewers) and the discharge quantity is acceptable by the City of Vaughan and

York Region. If the above options are not feasible, a service could be hired to collect the water and appropriately remove it from site for treatment/disposal at an accredited facility.

Groundwater Drawdown

The Hydrogeological Investigation Report evaluated the effects of dewatering on groundwater drawdown. Specifically, the Hydrogeological Investigation Report evaluated the spatial extend for groundwater drawdown, often referred to as the Zone of Influence (ZOI). The estimated ZOI ranges between approximately 3 and 70 m from the perimeter of the excavation. Therefore, there is little potential for dewatering activities to have impacts on wells in the vicinity of the grade separation.

4.10.2 Operations and Maintenance

No dewatering will be required during the operations and maintenance phase, as the McNaughton Road Grade Separation will be built as an overpass. Therefore, no impacts are anticipated to hydrogeological resources during the operations and maintenance phase.

4.11 Utilities

4.11.1 Construction

The following table lists the utilities along McNaughton Road that will need to be relocated during construction.

Table 4.11-1: Utilities To Be Relocated During Construction

Utility Type	Treatment
Watermains	To be relocated*
Sanitary Sewer	To be relocated
Storm Sewer	To be replaced at the grade separated roadway elevation
Streetlighting	To be replaced at the grade separated roadway elevation and multi-use pathways
Gas Main	To be relocated
Utility Poles	To be relocated
Railway Signal Barriers	To be removed
Bell	To be relocated

* Proposed relocation of the York Region watermains are subject to ongoing discussions with the municipality

4.11.2 Operations and Maintenance

Following the completion of the grade separation, full service of existing utilities will need to be re-instated to ensure the level of service meets the level of service provided to the users prior to the construction of the grade separation.

4.12 Climate Change Considerations

This section outlines how climate change considerations were taken into account in the environmental assessment and design of the Project. The following sections describe how the Transit Project Assessment Process (TPAP) Addendum for the Project incorporates the Ministry of Environment, Conservation and Parks (MECP)'s guidance for considering climate change in environmental assessments, with a focus on climate change *mitigation* and *adaptation*, as summarized in Table 4.3.2-1 and Table 4.3.2-2.

The grade separations will be constructed and operated with future climate change projections in mind, so construction delays and service interruptions due to extreme weather events will be minimized.

The Intergovernmental Panel on Climate Change (IPPC) defines climate change as:

"...a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forces such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use." (Intergovernmental Panel on Climate Change, 2014)

The term "climate change" can apply to any major variation in temperature, wind patterns or precipitation that occurs over time. Changes in the composition of the atmosphere are resulting in processes that alter global temperature and precipitation and are affecting local weather patterns. These processes can ultimately lead to increased occurrence of extreme weather events such as floods, droughts, ice storms and heat waves across the Greater Toronto and Hamilton Area (GTHA) (Metrolinx, 2017).

To mitigate climate change and the effects it can have on the natural and built environments, government agencies at all levels have developed strategies and guidelines to reduce greenhouse gas (GHG) emissions into the atmosphere. Government agencies are also implementing measures that promote resiliency to a changing climate. Consistent with these strategies and guidelines, the planning and design of the Project will consider both climate change *mitigation* (i.e., minimizing effects of a project on climate change) and *adaptation* (i.e., resilience of a project to future climatic changes).

Section 4.12.1 outlines the policy context which guides how climate change has been considered in the planning of this Project. Given the relatively small effects of the Project on climate change, and Metrolinx's extensive existing guidance on how to build and operate the stations considering future extreme weather events, reference to existing climate change strategies and policies was judged to be sufficient in considering climate change in the TPAP.

Sections 4.3.2 (mitigation) and 4.3.3 (adaptation) describe how these considerations are being implemented in project planning and design.

4.12.1 Policy Context

4.12.1.1 Government of Ontario

The Government of Ontario has committed to reducing GHG emissions to 30% below the 2005 levels by 2030 (i.e., 143 mega tonnes of carbon dioxide equivalent (CO₂e) by 2030) (Government of Ontario 2018).

The *Infrastructure for Jobs and Prosperity Act, 2015* (Province of Ontario, 2015) indicates that infrastructure should be planned to mitigate effects on climate change and be designed to consider climate change adaptation. Specifically, Section 3.11 of this Act states that:

“Infrastructure planning and investment should minimize the impact of infrastructure on the environment and respect and help maintain ecological and biological diversity, and infrastructure should be designed to be resilient to the effects of climate change.”

The 2020 Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2020) issued under the Planning Act advises on the need to consider reducing GHG emissions and reducing the potential risk of climate change-related events like droughts or intense precipitation. It encourages green infrastructure and strengthens stormwater management requirements; energy conservation and efficiency; reduced GHG emissions; climate change adaptation (e.g., tree cover for shade and for carbon sequestration); and consideration of the increased risk associated with natural hazards (e.g., flooding due to severe weather).

Applicability to the Project

Improving the public transit network can reduce traffic congestion and reduce the need for new road infrastructure, as well as reduce carbon emissions and air quality concerns associated with automobile use, contributing to reductions in GHG emission and helping to achieve provincial targets. Metrolinx is working in alignment with the intent of the *Infrastructure for Jobs and Prosperity Act, 2015* in the planning and design of the project.

Since infrastructure proposed by the project have life spans that have the potential to face significant climatic changes based on conservative climate projections, there is a need to consider both the operational impacts to climate change, as well as how the Project will be affected by future climate change-related events such as droughts or intense precipitation. This includes consideration of most of the aspects highlighted in the PPS, including green infrastructure; stormwater management; energy conservation and efficiency; GHG emissions; vegetation/carbon sequestration; and resiliency to natural hazards such as flooding. Specific measures related to these aspects are further discussed in Sections 4.12.2 and 4.12.3.

4.12.1.2 Ministry of the Environment, Conservation, and Parks

The MOECC has prepared a guide titled *Considering Climate Change in the Environmental Assessment Process* (Ministry of the Environment, Conservation, and Parks, 2017), to describe how environmental assessment processes shall incorporate consideration of climate change impacts, including:

- The effects of a project on climate change;
- The effects of climate change on a project; and
- Various means of identifying and minimizing negative effects during project design.

Considering climate change in accordance with the guide is meant to result in a project that is more resilient to future changes in climate and helps maintain the ecological integrity of the local environment in the face of a changing climate.

The guide states that proponents should take into account climate change mitigation and adaptation during both the assessment of alternatives to the undertaking and alternative methods of implementing the undertaking. Specific to Projects assessed under the TPAP Addendum process, the guide advises that the consideration of climate change should be scaled to the significance of the project's potential environmental effects, and that evaluation can be qualitative and/or quantitative.

Applicability to the Project

The TPAP Addendum starts with a selected Project. The regulation does not require proponents to look at the rationale and planning alternatives or alternative solutions to public transit or the rationale and planning alternatives or alternative solutions to the particular Project (The Ministry of the Environmental, Conservation, and Parks, 2014). The climate change assessment contained in this Addendum focuses on the various design and mitigation measures that will support climate change mitigation and adaptation during construction and operations of the Project.

Overall, the Project's effects on climate change (i.e., mitigation) are expected to be small. There will be insignificant GHG emissions resulting from both construction and operations, as detailed in the Air Quality Impact Assessments completed for the Project (see Appendix D1 and D2). The Air Quality Impact Assessments involved a high-level quantitative analysis of local GHG emissions during operations, comparing station emissions to Provincial targets.

Since the Project will be operational for the foreseeable future, it will likely be affected by future climate change-related events such as droughts or intense precipitation. As a result, the stations need to consider designs, construction and operations with these future events in mind. The Project will continue to take climate change considerations into account as the design progresses. The TPAP addendum is based on the Initial Preferred Design.

Table 4.12-1 outlines how climate change was considered in this TPAP. Each of the areas considered is described in greater detail in Sections 4.12.2 and 4.12.3.

Table 4.12-1: Consideration of Climate Change in the Pre-TPAP and TPAP Phases

Consideration	Project Phase where Consideration Implemented	Areas Considered	Type of Evaluation
Effects of the project on climate change (mitigation)	Pre-TPAP, detailed design, construction, operations	Planning for transit	Qualitative
		GHG emissions	Quantitative
		Vegetation compensation and revegetation	Qualitative
		Energy consumption and emissions	Qualitative
Effects of climate change on the project (adaptation)	Detailed design, construction, operations	Air temperature	Qualitative
		Precipitation	Qualitative
		Drought	Qualitative

Further, 4.12-2 outlines how the primary expectations for proponents when considering climate change according to the MECP's guide (as indicated by "should" statements in the guide) have been addressed.

Table 4.12-2: Consideration of Climate Change in the Pre-TPAP and TPAP Phases

Recommendation	Section(s)
<p>The ministry expects proponents to take into account:</p> <ul style="list-style-type: none"> The project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation). Resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation). 	<ul style="list-style-type: none"> Section 4.12.2.2 (greenhouse gas emissions). Section 4.12.2.3 (impacts on carbon sinks). Section 4.12.3 (climate change adaptation).
The proponent should also include a discrete statement in their study report detailing how climate change was considered in the environmental assessment.	<ul style="list-style-type: none"> Section 4.12.1.2. Table 4.12-1
Proponents of natural resource related projects should consult Appendix B for treatment of carbon stocks as sinks versus sources.	The Project is not natural resource related, so this is not applicable.
Proponents should include evaluation criteria, such as greenhouse gas emissions and impacts on carbon sinks, in the assessment of alternatives and alternative methods.	The TPAP does not include an assessment of alternatives or

Recommendation	Section(s)
	alternative methods, so this not applicable.
In concluding an environmental assessment study, the proponent should also include a statement in their study report about how climate change was considered in the environmental assessment and how the preferred alternative (project) is expected to perform with climate change considered.	<ul style="list-style-type: none"> • Section 4.12
Proponents should include evaluation criteria such as extreme weather events in their screening of alternatives, and alternative methods.	The TPAP does not include an assessment of alternatives or alternative methods, so this not applicable.
Proponents should also include in their study report, a statement about how climate change was considered in the environmental assessment, specifically in relation to the preferred alternative (project).	The TPAP does not include an assessment of alternatives or alternative methods, so this not applicable.
All climate parameters with potential to interact with a project should be defined and considered at a screening level to fully understand which interactions pose higher risk.	<ul style="list-style-type: none"> • Section 4.12.3.
Proponents should also document any uncertainty related to either downscaling climate change projections to specific sites, or expected impacts to the environment or project, within the environmental assessment.	Metrolinx is moving towards using downscaling projections as described in its <i>Planning for Resiliency</i> report (Metrolinx, 2017) to inform decisions regarding planning, construction and operations of infrastructure. This considers adaptation to climate change across all infrastructure assets, including existing and future stations.

Recommendation	Section(s)
Considering climate change in the terms of reference for an environmental assessment should commit the proponent to considering climate change impacts in related project studies prepared in support of the environmental assessment report.	The TPAP addendum does not include a term of reference, so this not applicable.
Considering climate change in an environmental assessment should result in the proponent refining and documenting measures for dealing with climate change impacts as the undertaking moves toward implementation stage. Examples could include adapted design or maintenance schedules, additional studies, and revised operating procedures.	<ul style="list-style-type: none"> • Section 4.12.3.2
Considering climate change in streamlined environmental assessment processes and studies could result in the inclusion of a commitment on how the proponent will implement climate change adaptation and mitigation measures during the detailed design phase of any given project.	<ul style="list-style-type: none"> • Section 4.12.2.3. • Section 4.12.3.2.
Proponents should consider whether making reference to existing climate change strategies or policies alone is sufficient as a consideration of climate change, or whether a more detailed consideration of climate change should be carried out when conducting project-specific environmental assessment studies. Documentation of the results of this consideration should be included as part of project reporting.	<ul style="list-style-type: none"> • Section 4.3

4.12.1.3 Metrolinx

Metrolinx's draft Regional Transportation Plan (RTP) (Metrolinx, 2018) outlines the long-term projects, plans, and activities Metrolinx will deliver to support reduction of Ontario's overall GHG emissions by promoting a shift from single occupant vehicles to more energy-efficient options like public transit, walking, cycling, carpooling, and teleworking.

Metrolinx is committed to ensuring that the existing transit network and new transit facilities/infrastructure will have a low-carbon footprint² and contribute to a clean and healthy environment for future generations (Metrolinx, 2016). Metrolinx has outlined key climate change goals in its Sustainability Strategy (2015 - 2020) (Metrolinx, 2016). The Sustainability Strategy addresses climate change through five goals, which are:

- Goal 1: Become Climate Resilient - Accelerate and intensify our efforts to implement a climate adaptation and resilience program to manage and mitigate climate change risks.

² A carbon footprint is the total greenhouse gas emissions attributed to a body (e.g., person, facility, or event) expressed as carbon dioxide equivalent (CO₂e). CO₂e is a standard unit for measuring carbon footprints, as a way to express the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same amount of warming.

- Goal 2: Reduce Energy Use and Emissions - Adopt processes, programs and technologies that allow us to effectively track, monitor and reduce our energy consumption, and carbon and air emissions.
- Goal 3: Integrate Sustainability in our Supply Chain - Minimize the impact associated with the use, extraction, processing, transport, maintenance, and disposal of materials and integrate sustainability criteria into our vendor management decisions. This goal extends to consideration of embodied carbon (i.e., the carbon dioxide emitted during the manufacture, transport, and construction of materials, together with end of life emissions).
- Goal 4: Minimize Impacts on Ecosystems - Consider the impact of infrastructure and services on ecosystems and ecosystem services and make best efforts to manage, preserve and protect. This includes the consideration of infrastructure projects within the broader context of ecosystems and ecological values, including watershed/stormwater management considerations.
- Goal 5: Enhance Community Responsibility - Leverage our significant investment in the region to create a lasting legacy for our communities and work closely with communities to create economic and social value.

Applicability to the Project

Of the goals identified above, Goals 1, 2, 3 and 4 line up most directly with climate change adaptation and mitigation as described in the MOECC's guide. Goal 1 is focused on adaptation and has been considered in various aspects of station design. Goals 2 and 3 relate to minimizing emissions during station construction and operations (mitigation), while Goal 4 focuses on minimizing impacts to ecosystems both during construction and operations (adaptation and mitigation). The following sections outline how project planning and design have been undertaken with regard to climate change mitigation and adaptation.

Goal 5 more broadly speak to how the construction and operations of the Project can maximize social and economic value and is not addressed in this volume as it does not relate to climate change directly.

The DRM indicates that new stations will target LEED accreditation and credits, and indicates which credits are mandatory and which are optional depending on project specifics.

4.12.2 Considering the Effects of the Project on Climate Change (Climate Change Mitigation)

As indicated in Table 4.12-1, the effects of the project on climate change (mitigation) have been evaluated both quantitatively (for GHG emissions) and qualitatively (for transit planning, vegetation compensation/revegetation, and energy consumption/emissions).

4.12.2.1 Planning for Transit

Public transportation is a beneficial service that can reduce traffic congestion and the need for new road infrastructure, as well as reduce carbon emissions and air quality

concerns associated with automobile use. Improvements to transit will decrease average transit trip times in the GTHA, even with an increasing population, leading to more people using public transportation and fewer vehicle-kilometres travelled in congested conditions. This reduction in congestion, when combined with expected improvements in automobile fuel efficiency, will result in a decrease in per capita GHG emissions from automobile trips (Metrolinx, 2018).

The Project has been identified for implementation through a comprehensive, iterative planning process for Go Expansion in the GTHA. Further information about the business cases for the Go Expansion Program is provided in section 1.4.2.

4.12.2.2 Greenhouse Gas Emissions

GHG/Climate Change analyses were undertaken as part of the Air Quality Effects Assessment for the proposed grade separation, to evaluate the local impacts to air quality (see Sections 3.5 and Appendix E-1).

4.12.2.3 Vegetation Compensation and Revegetation

The construction of the new stations will require the removal of trees and vegetation, which will result in a temporary loss of an existing carbon sink within the local environment, among other impacts.

Metrolinx is establishing a Vegetation Compensation Protocol for GO Expansion projects that will be applied to the Project, and vegetation that is removed will be compensated for in accordance with the provisions of this protocol, as follows:

- **For Municipal/Private Trees:** Metrolinx will work with each municipality to develop a municipality-wide streamlined tree permitting / compensation approach for municipal and private trees. The goal is to reduce administrative permitting burden for trees along long stretches of rail corridor.
- **For Trees within Metrolinx Property:** Metrolinx is developing a methodology to compensate for trees located within Metrolinx's property. This will involve categorizing trees community types / ecological value and establishing the appropriate level of compensation. Metrolinx will be looking to partner with Conservation Authorities and municipalities to develop the final compensation plan.
- **Conservation Authorities:** For vegetation removals within Conservation Authority lands where required, applicable removal and restoration requirements will be followed.
- **Federal lands:** For vegetation removals within Federally owned lands where required, applicable removal and restoration requirements will be followed.
- **Tree End Use:** Options for the end use of trees removed from Metrolinx property (e.g., reuse/recycling options) will be developed.

Revegetation of disturbed areas will take place as soon as possible. Post-planting monitoring of restoration areas will occur for one year after installation. One site visit will be conducted during the subsequent growing season to confirm survival of plantings and/or seed mix. Should the plantings and/or seed mix not survive, additional seeding

and/or plantings will be undertaken one year thereafter with one additional monitoring visit in the following growing season.

Additionally, the Metrolinx DRM requires that plant materials suitable to the growing environment at project sites be selected for vegetation/revegetation, and that species (native or non-native) must be hardy, drought and salt-tolerant, and resistant to the stresses of compacted soils and weather exposure.

4.12.3 Considering Potential Effects of Climate Change on the Project (Climate Change Adaptation)

It is recognized that climate change is already underway and can be anticipated to affect the construction and operations of the Project. There is general agreement that the Great Lakes Basin will see increases in temperature, precipitation, drought, wind gust events, and freezing rain by the end of this century; however, the level of confidence and quality of supporting evidence for these projections vary considerably (Metrolinx, 2017). Table 4.12-3 shows the current consensus predictions for climate change in the Great Lakes Basin.

Table 4.12-3: Climate Change Projections for the Great Lakes Basin

Climate Parameter	Threshold	Annual Probability		Prob. Of Occurrence for Period (2015-2050)	PIEVC Scoring		
		Historical	2050s		Annual: Historical	Annual: 2050s	Study Period (35 year)
Extreme Temperatures	40°C	~0.01 per year	1-7 days per year	~100%	1	7	7
	32°C	6.5 days per year	27.5 days per year	1	7	7	7
	-30°C	0.05 days per year	<0.01 days per year	<70%	2	0-1	5-6
	-23°C	1.1 days per year	0.1 days per year	1	7	3	7
Temperature Ranges	60°C in one year	0.1 days per year	<0.01 events per year	<90%	3	0-1	6
Reduced Visibility (e.g. fog, blowing snow)	400 m	49 hours per year, 15.1 days per year	strong trend ↓, stable recent period	1	7	6-7	7
	200 m	33 hours per year, 11.9 days per year	strong trend ↓, stable recent period	1	7	6-7	7
Frost Penetration	1.2 m or below	0.17 per year	Trend↓ but some conflicting factors	>90%	4	3	6-7
High Winds (Gusts)	90 km/h	2 per year	>2.5 per year	1	7	7	7
	120 km/h	0.05 days per year	Likely ↑	85% or higher	2	2	6-7
Tornadoes	EF1+	1-in-6,000	Unknown	~0.6%	0	0	0-1

Climate Parameter	Threshold	Annual Probability		Prob. Of Occurrence for Period (2015-2050)	PIEVC Scoring		
		Historical	2050s		Annual: Historical	Annual: 2050s	Study Period (35 year)
Overland Flood/Heavy Rainfall	≥25 mm in 2 hour	~ 0.8 events per year	Very likely ↑	1	6	6	7
	≥60 mm in 2 hours	≤ 0.03 events or less per year	Very likely ↑	~70%	1-2	2	6
Freezing Rain	≥ 10 mm	~ 0.2 days per year	~ 0.3 days per year	~100%	4	4-5	7
	≥ 25 mm	0.06 days per year	>0.09 days per year	>95%	2	3	7
Snow	Blowing snow	7.8 days per year	Trends not significant to scoring	1	7	7	7
	≥ 20 cm in one day	0.1 days per year	Conflicting trends, likely remaining similar	>95%	3	3	6-7
Hail	"Gold ball" / 45 mm or larger	0.07 per year	Unknown	>90%	2-3	unknown	6
Horizontal Rain	Gusting 50km/h + >25 mm rain	1.8 days per year	Slight trend ↑	1	7	7	7
Lightning	Direct strikes	~ 0.3% per year	Likely ↑	>99%	1	unknown	3

To focus the consideration of effects of climate change on the Project, only those themes where there is high or medium agreement on data are addressed in the sections below, for both the construction and operations phases of the Project.

4.12.3.1 Air Temperature

Increases in air temperature will not greatly impact the construction of the proposed grade separations.

4.12.3.2 Precipitation

Precipitation, whether it is rainfall, snowfall, or other forms of frozen/liquid water, is the key climate and weather-related variable of concern in Stormwater Management (SWM). As a result of climate change, storm events are predicted to become more intense in the GTHA, which can result in larger volumes of precipitation at one time (see (McDermid, et al., 2015) as outlined in Table 4.12-3).

Stormwater Management

The SWM design for the Project will consider the drainage and SWM objectives of the MECP Stormwater Management Planning and Design Manual (2003), Ministry of Transportation (MTO) Drainage Management Manual (2008), and TRCA Stormwater Management Criteria (2012), among other guidance. This will be supplemented by current guidance such as the runoff volume control targets for Ontario recommended to MECP (Aquafor Beech Ltd. and Earthfx Inc., 2016) from local municipalities and Conservation Authorities.

A detailed SWM Plan will be developed prior to the construction phase of the Project so that runoff from rainfall is controlled based on predicted future scenarios, to promote climate resilience. These scenarios will be identified by using the most up-to-date precipitation intensity-duration-frequency (IDF) curves available.

IDF curves are graphical representations of the amount of water that falls within a given period of time in catchment areas and are used by decision makers to plan and design infrastructure to withstand severe weather impacts (Office of the Auditor General of Canada, 2016). Current SWM practices include the use of IDF data and design storm distributions (e.g., Chicago Storm, Hurricane Hazel), as well as 2-year through to 100-year³ storm events.

Designing the SWM systems for the Project using IDF curves will lead to:

- Reduced ongoing operation and maintenance requirements; and
- Minimized impacts on surrounding ecosystems, since SWM systems will be designed to ensure that runoff from rainfall is controlled mostly on-site.

³ Storm even frequency is used to simplify the definition of a rainfall event that statistically has a chance of occurring once within the given time period (e.g., a 100-year storm has a 1 in 100 (1%) probability of occurring in any given year).

Oil-grit separators⁴ and stormwater management features must be sized appropriately to manage predicted future scenario flows and sediment loading (i.e., winter and spring).

Erosion and Sediment Control Measures

An increase in storm intensity, which is projected as a result of climate change (see Table 4.12-3), can make erosion and sedimentation more likely, especially during construction. Erosion and Sediment Control (ESC) measures, including the development of an ESC Plan, will be implemented during the construction phase of the Project to ensure stormwater runoff is controlled and sediment is prevented from entering sewers and watercourses. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction (Greater Golden Horseshoe Area Conservation Authorities, 2006) and OPSS 805 (Erosion and Sediment Control Measures). Installation and monitoring of appropriate ESC measures will help mitigate potential effects of climate change on the Project.

4.12.4 Drought

Increase in the frequency and extent of drought will not greatly impact the construction of the proposed grade separations.

4.13 Impact Assessment, Mitigation Measures and Monitoring Summary

Table 4.13-1 provides a summary of the impact assessment, mitigation measures and monitoring activities for the preferred design for the McNaughton Road Grade Separation. A potential effect is denoted by a "●". If no potential effects are anticipated, a "-" is indicated.

⁴ Oil grit separators are underground devices designed to protect waterways from hazardous material spills and stormwater pollution.

Table 4.13-1: Impact Assessment (Potential Effects, Mitigation Measures and Monitoring)

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Natural Environment (Wildlife and Wildlife Habitat)					
Wildlife	—	—	Disturbance, displacement or mortality of wildlife	<ul style="list-style-type: none">Prior to construction, investigation of the Project Footprint for wildlife and wildlife habitat that may have established following the completion of previous surveys will be undertaken, as appropriate.If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced, and wildlife will be encouraged to move offsite and away from the construction area on its own. A qualified biologist will be contacted to define the appropriate buffer required from wildlife.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Significant Wildlife Habitat (SWH)	—	—	Disturbance or destruction of Migratory Butterfly Stopover Areas used by Monarch Butterflies.	<ul style="list-style-type: none">Opportunities to plant milkweed or forage vegetation outside of and within the rail Right-of-Way (ROW) will be undertaken, where possible, and in accordance with the Metrolinx Vegetation Guideline (2020).If vegetation clearing will proceed when Monarch larvae may be present (April 1 to September 30), milkweed plants should be inspected for Monarch larvae prior to their removal. If larvae are present, they may be moved to a location that is suitable and safe under the direction of a qualified biologist. Monarch caterpillars may be moved to other milkweed plants; for other larval stages (i.e., eggs and chrysalis). Entire milkweed plants should be transplanted.Provide mitigation measures for additional migratory butterfly species as required.	<ul style="list-style-type: none">Regular monitoring will be undertaken during construction to prevent unauthorized impacts to the Migratory Butterfly Stopover Areas.
Snake hibernacula	—	—	Disturbance or destruction of Reptile Hibernaculum.	<ul style="list-style-type: none">Where project activity occurs adjacent to suitable snake hibernacula, exclusionary fencing will be erected along the activity area to fully isolate the area of activity during the active snake season. In the event that exclusionary fencing cannot be installed, follow-up discussions with the Ministry of the Environment, Conservation and Parks (MECP) and the Ministry of Natural Resources and Forestry (MNRF) will be required to determine adequate alternative mitigation measure(s).For areas where the hibernacula feature requires removal to facilitate development, the exclusion fencing is to be installed during the active snake season and prior to any	<ul style="list-style-type: none">Monitoring will be undertaken prior to construction to survey exclusionary fencing installation and regular monitoring during construction to survey for snakes potentially trapped within exclusionary areas.Continuous monitoring of feature removal will be undertaken during activity.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				construction activities commencing to prevent snakes from entering the feature pre-removal. Any snakes encountered within the exclusion fencing will be relocated outside the fencing and within suitable habitat containing suitable vegetation cover/refuge by a qualified biologist in accordance with the required permit(s) in accordance with the MNRF’s Reptile and Amphibian Exclusion Fencing (2013).	
Migratory Breeding Birds and Nests	•	–	Disturbance or destruction of migratory bird nests.	<ul style="list-style-type: none">All works must comply with the <i>Migratory Birds Convention Act</i> (MBCA), including timing windows for the nesting period (April 1st to August 31st in Ontario).If activities are proposed to occur during the general nesting period a breeding bird and nest survey will be undertaken prior to required activities. Nest searches by an experienced searcher are required and will be completed by a qualified biologist no more than 48 hours prior to vegetation removal.If a nest of a migratory bird is found outside of this nesting period (including a ground nest) it still receives protection.	<ul style="list-style-type: none">Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
Natural Environment (Species at Risk (SAR))					
General	•	–	Habitat loss, disturbance and/or mortality to SAR.	<ul style="list-style-type: none">All requirements of the <i>Endangered Species Act</i> (ESA) and <i>Species at Risk Act</i> (SARA) will be met. Species-specific mitigation measures will be implemented based on any recommended surveys undertaken prior to construction, and consultation with MECP/MNRF.If SAR is present and conservation strategies have been developed by MNRF/MECP, the commitments in the recover strategy will be followed.On-site personnel will be provided with information (e.g., factsheets) that address the existence of potential SAR on-site, the identification of the SAR species and the procedure(s) to follow if an individual is encountered or injured.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
Barn/Bank Swallow	•	–	Habitat loss, disturbance and/or mortality to Barn and/or Bank Swallow.	<ul style="list-style-type: none">Field surveys will be undertaken prior to construction to confirm the number of nests present at the known locations and whether the nests remain active.Where loss or disturbance cannot be avoided (e.g., due to work on bridges or banks), all requirements under the ESA will be met, including any registration, compensation, replacement structures and/or permitting requirements.	<ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<ul style="list-style-type: none"> If construction activities are scheduled during the nesting season for Barn and/or Bank Swallow (April 1st to August 31st), a nest search will be undertaken to confirm that no Barn and/or Bank Swallow are nesting on structures or banks that may be affected by construction activities on or near these areas. If possible, the area will be netted prior to nesting season to dissuade use of these areas for nesting. 	impacts. Additional monitoring measures will be developed with the MECP, if required.
Chimney Swift	•	–	Habitat loss, disturbance and/or mortality to Chimney Swift.	<ul style="list-style-type: none"> If repair, maintenance or demolition of buildings/structures with suitable roosting/nesting habitat (e.g., chimneys) is to take place, targeted surveys for Chimney Swift will be completed as per the Bird Studies Canada Chimney Swift Monitoring Protocol (2009). Repair, maintenance, or demolition of an identified roosting/nesting structure may constitute destruction of critical habitat and would be discussed in advance with the MECP and requirements of the ESA will be met. Register activities for Chimney Swift under the ESA and consult with MECP to fulfil requirements the ESA and its associated regulations. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
SAR Bats	–	–	Habitat loss, disturbance and/or mortality to SAR Bats.	<ul style="list-style-type: none"> Disturbance to bat roosting habitat will be avoided during the bat roosting period of March 31st to September 1st, with emphasis on avoiding potential effects during the maternity period of June 1st to July 31st and in accordance with MECP requirements. Additional monitoring, mitigation and compensation for removal of suitable cavity trees may be required based on the results of additional surveys and consultation with the MECP. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
Aquatic SAR	–	–	Habitat loss, disturbance and/or mortality to aquatic SAR.	<ul style="list-style-type: none"> Specific mitigation measures identified through the Aquatic Habitat and Fish Community Assessment, and/or any other studies, will be implemented. If aquatic SAR is present, design and construction will occur in accordance with MECP requirements. Register activities that fall under the notice of activity for aquatic species for works within habitat of certain fish or mussels. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
SAR Turtles	–	–	Habitat loss, disturbance and/or mortality to SAR turtles.	<ul style="list-style-type: none"> In areas identified as being potential SAR turtle habitat, in-water works will be scheduled to occur outside of the turtle overwintering period of October 1st to April 30th in any given year and in accordance with MECP requirements. Prior to in-water works, in areas identified as being potential SAR turtle habitat, an inspection for turtles will be conducted. If a nesting turtle is found, the MECP will be notified immediately, a suitable buffer zone will be flagged around the site, and that area will be protected from harm during the nesting season. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
SAR Snakes	–	–	Habitat loss, disturbance and/or mortality to SAR snakes.	<ul style="list-style-type: none"> Please refer to the “Wildlife” environmental component within this table for applicable general mitigation measures. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Additional monitoring measures will be developed with the MECP, if required.
Natural Environment (Vegetation)					
Vegetation Removal and Compensation Plans	<ul style="list-style-type: none"> 	–	Tree / Vegetation removal, injury and protection.	<ul style="list-style-type: none"> An Arborist Report will be prepared which meets regulatory requirements and is completed by an I.S.A. Certified Arborist. The report will also be completed with regard to the Metrolinx <i>Vegetation Guideline</i> (2020), <i>Ontario Forestry Act R.S.O. 1990</i>, the <i>Endangered Species Act</i>, and other regulations, municipal by-laws and best management practices as applicable. The Arborist Report will include, but not be limited to the individual identification of all trees within the Project Study Area including those that require removal or preservation, or trees that may be injured as a result of the Project. Trees to be identified within the Project Study Area will include those on Metrolinx property, trees on public and private lands, and boundary trees. Municipal by-laws will dictate the minimum Diameter at Breast Height (DBH) which requires inventory and additional requirements for tree inventories and tree protection plans. The Arborist Report will include all information needed to establish compensation ratios and 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. The success of vegetation compensation activities will be monitored in accordance with the <i>Metrolinx Vegetation Guideline</i> (2020). The approach to compensation monitoring will be determined by property ownership, applicable governing bylaws/regulations and location with respect to ecological functioning.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<p>tree end use (including identification of high value trees) as per the Metrolinx <i>Vegetation Guideline</i> (2020).</p> <ul style="list-style-type: none">• If a tree requires removal or injury, compensation and permitting/approvals (as required) will be undertaken in accordance with the Metrolinx <i>Vegetation Guideline</i> (2020). Adhere to all applicable bylaws and regulations for tree removals outside of Metrolinx properties.• Pruning of branches will be conducted through the implementation of proper arboricultural techniques.• Tree Protection Zone (TPZ) fencing will be established to protect and prevent tree injuries in accordance with local by-law requirements.• Prior to the undertaking of tree removals, a Tree Removal Strategy, building upon the considerations and elements set out in the Metrolinx <i>Vegetation Guideline</i> (2020), will be developed and implemented in adherence with best practices, standards and regulations on safety, environmental and wildlife protections.• Compensation for tree removals will be undertaken in accordance with provisions outlined in the Metrolinx <i>Vegetation Guideline</i> (2020). Adhere to all applicable bylaws and regulations for tree removals outside of Metrolinx properties.• Vegetation removals will also consider and mitigate potential impacts to sensitive species, e.g., migratory birds and Species at Risk (SAR), and features, e.g., Designated Natural Areas and Significant Wildlife Habitat. Refer to Natural Environment commitment tables for additional details.	<ul style="list-style-type: none">• Monitoring requirements will be undertaken in accordance with conditions of permits and approvals.• Monitoring and management of trees/vegetation within the rail corridor right-of-way will be undertaken in accordance with the IVM Program.
Vegetation Removal and Compensation Plans	–	–	Disturbance, injury and/or removal of SAR vegetation, including Butternut.	<ul style="list-style-type: none">• As part of the Arborist Report, all trees within or adjacent to the Project Footprint that will be removed or injured as part of the Project will be inventoried, including Butternut and any other SAR tree.• Each Butternut that may potentially be removed or impacted must be assessed by a qualified Butternut Health Assessor, in accordance with MNRF <i>Butternut Assessment Guidelines</i> (2014). The Assessor will prepare a Health Assessment Report for submission to MECP to determine the next course of action.	<ul style="list-style-type: none">• On-site inspection will be undertaken to confirm the implementation of the mitigation measures.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Integrated Vegetation Management (IVM)	—	—	Footprint Impacts and potential for the establishment of invasive species and other incompatible species.	<ul style="list-style-type: none"> An IVM Plan will be developed and implemented that is in adherence with the Metrolinx <i>Vegetation Guideline</i> (2020) and the IVM Program. The Guideline's selection criteria will be used to assess the vegetation present as compatible or incompatible, and manage it, if necessary, in a way which meets safety needs in a timely manner, is sensitive to environmental conditions, and maximizes cost-effectiveness. 	<ul style="list-style-type: none"> The presence, density, and location of compatible and incompatible species will be monitored as per the frequency and methodology established in the Bi-Annual Monitoring Program within the Metrolinx <i>Vegetation Guideline</i> (2020). The Bi-Annual Monitoring Program is made up of pre-treatment and post-treatment monitoring events that will be carried out via field, aerial, and high-rail vehicle or train surveys conducted by qualified specialists.
Tree Removal Strategy	—	—	Potential for the spread of emerald ash borer, <i>Agrilus planipennis</i> (Fairmaire) associated with removal, handling and transport of ash trees.	<ul style="list-style-type: none"> Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive <i>D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, Agrilus planipennis</i> (Fairmaire) (2014), as amended from time to time. To comply with this Directive, all Ash trees requiring removal, including any wood, bark or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. Ensure precautions are being taken to minimize the spread of invasive species by cleaning equipment prior to moving sites.
Natural Environment (Aquatic Environment)					
Wetlands and Waterbodies	—	—	Removal or impacts to wetland, aquatic and riparian vegetation; erosion and sedimentation to wetlands/waterbodies from construction; risk of contamination to wetlands/waterbodies as a result of spills.	<ul style="list-style-type: none"> Construction activities will maintain the buffers established during the design phase to minimize potential negative impacts to wetlands and waterbodies. Shorelines or banks disturbed by construction activities will be immediately stabilized by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site. An Erosion and Sediment Control Plan, in accordance with the Greater Golden Horseshoe's Erosion and Sediment Control Guideline for Urban Construction (December 2006), as amended from time to time, will be prepared prior to and implemented during construction to minimize the risk of sedimentation to the waterbody. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include alteration of activities to minimize impacts and enhance mitigation measures.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<ul style="list-style-type: none"> A Spill Prevention and Response Plan will be developed before work commences to ensure procedures and policies are in place during construction to minimize impacts to wetlands and watercourses. In wetland areas where vernal pooling occurs, prior to dewatering isolated work areas, wildlife will be captured and relocated to suitable habitat outside of the work area. 	
Fish and Fish Habitat	–	–	Potential for direct, in-water impacts to fish and fish habitat.	<ul style="list-style-type: none"> All requirements of the Fisheries Act and the ESA will be met. In the event that in-water and/or near water construction works are required, the restricted construction activity timing windows and appropriate mitigation measures will be followed, as identified in Applicable Law and through consultation with the relevant authorities including the Conservation Authority, MECP, MNRF and Fisheries and Oceans Canada (DFO). In-water works will be planned to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed. Prior to dewatering isolated work areas, fish will be captured and relocated to suitable habitat outside of the work area under a Licence to Collect Fish for Scientific Purposes from the MNRF. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Turtles and Turtle Habitat	–	–	Potential for impacts to turtles and/or turtle habitat.	<ul style="list-style-type: none"> In addition to consideration of impacts to fish and respective construction timing windows, work within wetlands will also have to consider effects on turtles. As such, work will likely have to be scheduled outside of the turtle overwintering period which occurs from October 1st to April 30th in any given year. It is also possible that turtle surveys would need to be conducted prior to the work. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Cultural Heritage					
Built Heritage Resources and Cultural Heritage Landscapes	–	–	Indirect or direct impacts to the heritage attribute(s) of a property of known or potential Cultural Heritage Value or Interest (CHVI) due to installation of new/modified infrastructure.	<ul style="list-style-type: none"> Based on the results of the <i>Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment – McNaughton Road Grade Separation</i>, no further work is required. All work shall be performed in accordance with Applicable Law, including but not limited to the Ontario Heritage Act, the Ministry of Heritage, Sport, Tourism and Culture 	<ul style="list-style-type: none"> Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or Environmental Study Reports (ESRs) and Addenda and the

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<p>Industries (MHSTCI) <i>Standards and Guidelines for Provincial Heritage Properties: Metrolinx Identification and Evaluation (I&E) Process</i> (2014), and the forthcoming <i>Standards and Guidelines for Provincial Heritage Properties: Metrolinx Identification and Evaluation (I&E) Process</i> (2020).</p> <ul style="list-style-type: none">Follow the process and recommendations outlined in the Environmental Project Reports (EPR) under Transit Project Assessment Process (TPAP) for Proponents and their Consultants.Follow the recommendations outlined in the heritage reporting completed including the Cultural Heritage Report and/or the Heritage Impact Assessment (HIA).For known and potential properties of Cultural Heritage Value or Interest (CHVI) that will experience indirect or direct impacts and where no previous assessment has been completed or a Statement of Cultural Heritage Value (SCHV) has not been approved by Metrolinx, undertake a Cultural Heritage Evaluation Report (CHER) as per the forthcoming Metrolinx I&E Process (2020). Given the importance and location of some Cultural Heritage Resources, consultation with Municipal heritage staff and other jurisdictions will be undertaken as appropriate to determine if proposed infrastructure will be subject to specific policies within heritage districts or conservation areas (including parks).	recommendations contained in any/all of the following documents: Cultural Heritage Reports, Cultural Heritage Assessment Reports (CHARs), CHERs, HIAs and Strategic Conservation Plans (SCPs).
	–	–	Direct impacts to the heritage attribute(s) of a known or potential Provincial Heritage Property (PHP) or Provincial Heritage Properties of Provincial Significance (PHPPS) due to installation of new/modified infrastructure	<ul style="list-style-type: none">Where no previous assessment has been completed or a SCHV has not been approved by Metrolinx, undertake a CHER as per the forthcoming <i>Metrolinx I&E Process</i> (2020).If warranted, complete a HIA in accordance with MHSTCI <i>Information Bulletin No. 3: Heritage Impact Assessments for Provincial Heritage Properties</i> (2017) to identify alternatives and mitigation and monitoring commitments to avoid or lessen impacts on the Cultural Heritage Value and heritage attributes of the PHP, based on the PHP's SCHV. Mitigation measures and alternatives should be consistent with the relevant conservation strategies established and adopted in a SCP. A SCP will be prepared and implemented for PHPs and PHPPS.	<ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<ul style="list-style-type: none">Approval will be obtained from the MHSTCI, for any modifications to Provincially Significant properties prior to construction.During design, the recommendations of all HIAs and Cultural Heritage Reports will be followed and adhered to during design and construction, including but not limited to strategies to protect heritage attributes.If the project study limits change or there is a change in impact that is not captured or documented in previously completed Metrolinx and/or GO Transit EPRs and/or ESRs post EA/TPAP, and which causes any additional heritage properties to be impacted by the proposed design/infrastructure, all applicable legislation will be followed to carry out additional impact assessment work and heritage studies to identify any known or potential built heritage resources and cultural heritage landscapes, and to identify potential impacts and appropriate mitigation measures.Given the importance and location of some Cultural Heritage Resources, consultation with Municipal heritage staff and other jurisdictions will be undertaken as appropriate to determine if proposed infrastructure will be subject to specific policies within heritage districts or conservation areas (including parks).	
	<ul style="list-style-type: none">	—	Potential indirect impacts on known or potential properties of CHVI resulting from construction activities	<ul style="list-style-type: none">Selection of construction staging and laydown areas will follow Metrolinx's selection procedures which include avoiding heritage attributes wherever possible or effectively mitigating impacts where not possible.	<ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
	<ul style="list-style-type: none">	—	For any additional potentially affected Cultural Heritage Resources/properties not previously identified within a previous Metrolinx/GO Transit EA/TPAP/Other Study	<ul style="list-style-type: none">If the project study limits change or there is a change in impact that is not captured or documented in previously completed Metrolinx and/or GO Transit EPRs and/or ESRs post EA/TPAP, and which causes any additional heritage properties to be impacted by the proposed design/infrastructure, all applicable legislation will be followed to carry out additional impact assessment work and	<ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per the recommendations contained in any/all of the following documents: Cultural

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				heritage studies to identify any known or potential built heritage resources and cultural heritage landscapes, and to identify potential impacts and appropriate mitigation measures.	Heritage Reports, CHARs, CHERs, HIAs and SCPs.
	—	—	Management of Cultural Heritage Resources/Properties	<ul style="list-style-type: none"> Develop and implement a SCP that addresses built heritage resources and cultural heritage landscapes according to MHSTCI Information Bulletin No. 2: Preparing Strategic Conservation Plans for Provincial Heritage Properties (2017) and as outlined in the Project Agreement. For PHPPS, approval of the MCP and SCP by MHSTCI is required. 	<ul style="list-style-type: none"> Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
	—	—	Demolition, removal, or relocation of a Metrolinx PHPPS (part or whole)	<ul style="list-style-type: none"> In the case of properties identified as PHPPS and where the proposed project infrastructure will require demolition or removal and/or transfer out of provincial control, Metrolinx will need to obtain MHSTCI Minister's consent. The Minister's Consent Package will be prepared which meets MHSTCI requirements and satisfy Metrolinx's obligations under the Ontario Heritage Act. 	<ul style="list-style-type: none"> Implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: Cultural Heritage Reports, CHARs, CHERs, HIAs and SCPs.
Archaeology					
Archaeology	•	—	Potential for the disturbance of unassessed or documented archaeological resources.	<ul style="list-style-type: none"> Based on the findings of Stage 1 AA, a Stage 2 AA has been recommended for areas identified as having archaeological potential and is being undertaken by a licensed archaeologist. When complete the Stage 2 AA will be submitted to MHSCTI for review. Metrolinx and/or Proponent will confirm that any AA reports submitted to MHSTCI for review have been entered into the Ontario Public Register of Archaeological Reports prior to commencing any ground disturbing activities. Develop and implement an Archaeological Risk Management Plan that addresses any recommendations resulting from Archaeological Assessments and documents all protocols for the discovery of human remains and undocumented archaeological resources. The Archaeological Risk Management Plan shall be amended to 	<ul style="list-style-type: none"> Performance of the work will occur within land previously subject to an Archaeological Assessment. Any site personnel responsible for carrying out or overseeing land-disturbing activities will be informed of their responsibilities in the event that an archaeological resource is encountered. Further Archaeological Assessment may identify the need for monitoring during construction.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<p>incorporate any additional actions required resulting from subsequent Archaeological Assessment Reports.</p> <ul style="list-style-type: none">• All work shall be performed in accordance with Applicable Law, including but not limited to the <i>Ontario Heritage Act</i>, the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), formerly the Ministry of Tourism, Culture and Sport (MTCS) Standards and Guidelines for Consultant Archaeologists (2011), and the MHSTCI document, <i>Engaging Aboriginal Communities in Archaeology: A Draft Bulletin for Consultant Archaeologists in Ontario</i> (2011).• In the event that archaeological resources are encountered or suspected of being encountered during construction, all work will cease. The location of the findspot should be protected from impact by employing a buffer in accordance with requirements of the MHSTCI. A professionally licensed archaeologist will be consulted to complete the assessment. If resources are confirmed to possess cultural heritage value/interest then they will be reported to the MHSTCI, and further Archaeological Assessment of the resources may be required. If it is determined that there is a potential for Indigenous artifacts, Metrolinx should be contacted and Applicable Law will be followed.• If final limits of the Project footprint are altered and fall outside of the assessed study area, additional Archaeological Assessments will be conducted by a professionally licensed archaeologist prior to disturbance and prior to construction activities. This will include completing all required Archaeological Assessments resulting from the Stage 1 Archaeological Assessment (Stage 2, Stage 3 and Stage 4, as required) as early as possible, prior to the completion of design, and in advance of any ground disturbance.• For areas determined to have archaeological potential or contain archaeological resources that will be impacted by project activities, additional Archaeological Assessment will be conducted by a professionally licensed archaeologist prior to disturbance.• If human remains are encountered or suspected of being encountered during project work, all activities must cease immediately and the local police/coroner as well as the	

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<p>Bereavement Authority of Ontario on behalf of the Ministry of Government and Consumer Services must be contacted. Archaeological investigations of human remains will not proceed until police have confirmed the remains are not subject to forensic investigation. Once human remains have been cleared of police concern, the MHSTCI will also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. If the human remains are determined to be of Indigenous origin, Metrolinx should be contacted and all Applicable Law must be adhered to.</p> <ul style="list-style-type: none"> All Archaeological Assessment findings will be shared with Indigenous Nations, as per Metrolinx's <i>Guide to Engaging with Indigenous Communities</i> (2020). 	
Archaeology	•	–	Potential to impact cemetery located in proximity to the Project footprint.	<ul style="list-style-type: none"> Work in proximity to known cemeteries requires completion of an Archaeological Assessment prior to any proposed ground disturbance in accordance with the MHSTCI's <i>Standards and Guidelines for Consultant Archaeologists</i> (2011) and the <i>Funeral, Burial, and Cremation Services Act</i> and regulations under that Act. 	<ul style="list-style-type: none"> Further Archaeological Assessment may identify the need for monitoring during construction.
Socio-Economic and Land Use					
Property	•	–	Property acquisition – permanent and temporary	<ul style="list-style-type: none"> Specific property requirements will be confirmed during design. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures. Select staging/laydown areas in accordance with Metrolinx procedures. Staging/laydown areas should be located in areas that minimize adverse effects to sensitive receptors. 	<ul style="list-style-type: none"> Follow Metrolinx guidance with respect to monitoring requirements at construction staging/laydown areas.
All land uses and adjacent lands	•	–	Nuisance effects from construction activities	<ul style="list-style-type: none"> Mitigation measures related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration commitment tables. An Erosion and Sediment Control Plan will be developed in accordance with the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction (December 2006), as amended from time to time, that addresses sediment release to adjacent properties and roadways. Develop a Communications Protocol in accordance with the Project Agreement, which will indicate how and when 	<ul style="list-style-type: none"> When applicable, monitoring related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration commitment tables. Erosion and sediment control monitoring to be conducted as per the Project Agreement. Number and resolution of complaints received.

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	Construction	Operation			
				<p>surrounding property owners and tenants will be informed of anticipated upcoming construction works, including work at night, if any.</p> <ul style="list-style-type: none"> Develop a Complaints Protocol in accordance with the Project Agreement. 	
All land uses and adjacent lands	•	–	Land use and access disruption	<ul style="list-style-type: none"> Provide well connected, clearly delineated, and appropriately signed walkways and cycling route options, with clearly marked detours where required. Provide temporary lighting and wayfinding signs and cues for navigation around the construction site. Develop a plan to reduce the effects of light pollution in accordance with the Project Agreement. Access to businesses during working hours will be maintained, where feasible. Where regular access cannot be maintained, alternative access and signage will be provided. 	<ul style="list-style-type: none"> Temporary access paths, walkways, cycling routes and fencing should be monitored. Number and resolution of complaints received.
Visual Characteristics	•	–	Visual effects from construction areas/activities	<ul style="list-style-type: none"> A screened enclosure for the development site will be provided, with particular attention to the waste disposal and material storage areas. Consideration will be given to providing temporary landscaping along the borders of the construction site between site fencing/enclosure and walkways, where space allows, and where necessary. 	<ul style="list-style-type: none"> Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified areas
Light Pollution	•	–	Light trespass, glare and light pollution effects	<ul style="list-style-type: none"> The Constructor will develop for Metrolinx review and approval an outdoor construction Light Pollution Plan that complies with all local applicable municipal by-laws and Ministry of Transportation (MTO) practices for lighting in areas near or adjacent to highways and roadways regarding outdoor lighting and incorporates industry best practices provided in ANSI/IES RP-8-18. The Constructor will perform the Works in such a way that any adverse effects of construction lighting are controlled or mitigated in such a way as to avoid unnecessary and obtrusive light with respect to adjoining residents, communities and/or businesses. 	<ul style="list-style-type: none"> Measure illuminance levels using an illuminance meter in accordance with ANSI/IES RP-8-18 Chapter 4. Number and resolution of complaints received.
Traffic	•	–	Construction may result in the need for temporary road or lane closures changing access to nearby land uses	<ul style="list-style-type: none"> Traffic Control and Management Plan(s) will be developed prior to construction to maintain reasonable access through work zones, to the extent possible. 	<ul style="list-style-type: none"> Traffic impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<ul style="list-style-type: none"> Access to nearby land uses will be maintained to the extent possible. Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur. Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory, and warning signs. 	<p>necessary during the construction period.</p> <ul style="list-style-type: none"> Cycling network impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjust as necessary during the construction period.
Public Transit	•	–	Construction may result in access restrictions to local bus routes and temporary disruptions to the existing rail corridor	<ul style="list-style-type: none"> Ensure that the public is notified in advance of any potential service disruptions. Consult with local transit agencies to establish a suitable mitigation strategy to be implemented. 	<ul style="list-style-type: none"> Traffic impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjusted as necessary during the construction period.
Air Quality					
Air Quality	•	–	Construction related air pollution may pose risks to human health and wellbeing	<ul style="list-style-type: none"> Prior to commencement of construction, develop and implement a detailed Construction Air Quality Management Plan (AQMP). The AQMP will: Demonstrate compliance with the specific air quality criteria and limits in the Metrolinx <i>Environmental Guide for Air Quality and Greenhouse Gas Emissions Assessment</i> (2019). Define the Project's air quality impact zone and identify all sensitive receptors within this area. Assess the baseline air quality by continuous measurement of local ambient concentrations of PM2.5 and PM10 over a minimum period of one week, where large local sources of pollution, such as highways, directly affect the Zone of Influence of the Project. Estimate and document the predictable worst-case air quality impacts of the Project on sensitive receptors within the air quality impact zone, develop appropriate mitigation measures, demonstrate their effectiveness, and commit to their timely implementation. Monitor continuously any contaminant, in addition to PM2.5 and PM10, which is predicted to exceed its relevant air quality exposure criterion during any phase of the Project and at any receptor. 	<ul style="list-style-type: none"> Develop and implement Weekly Air Quality Monitoring Plans that document how air quality monitoring has been conducted and compliance assessed to effectively prevent unacceptable rates of air emissions in accordance with the following guidelines: The construction related air contaminants of primary concern are in the form of particulate matter, with the principal construction related fractions of PM2.5 and PM10 - particulate matter of less than 2.5 and 10 micron in diameter, respectively. Other contaminants of concern include crystalline silica and oxides of nitrogen. The list of contaminants will be expanded with any and all air pollutants that may be produced as a result of the work. The criteria for PM2.5, PM10 and crystalline silica are provided in Metrolinx's <i>Environmental Guide for Air Quality and Greenhouse Gas</i>

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				<ul style="list-style-type: none">• Include explicit commitment to the implementation of all applicable best practices identified in the Environment Canada document, Best Practices for the <i>Reduction of Air Emissions from Construction and Demolition Activities</i> (2005).• Develop a Communications Protocol and a Complaints Protocol to respond to issues that develop during construction.	<p><i>Emissions Assessment</i> (2019). The applicable criteria for all other air contaminants of concern are to be found in the various schedules of <i>Ontario Regulation 419/05</i>.</p> <ul style="list-style-type: none">• Siting of the monitors should generally follow the guidelines provided in the Ministry of the Environment, Conservation and Parks (MECP) <i>Operations Manual for Air Quality Monitoring in Ontario</i> (2018).
Air Quality	–	<ul style="list-style-type: none">•	Exhaust emissions of diesel-powered trains contribute to local and regional air pollution	<ul style="list-style-type: none">• A detailed Operations Air Quality Management Plan will be developed and implemented to limit the generation and dispersion of airborne particulate matter, NOX and other air contaminants associated with the project operations.• New traction engines or propulsion systems and new auxiliary engines and power units will meet higher emission standards (i.e., Tier 4 diesels rather than lower tier diesels).• Engines and their emission control equipment will be maintained to manufacturers’ specifications.• Rebuilt diesel engines will meet Tier 4 emission standards at the time of major engine rebuilds.• Unnecessary train / engine / propulsion system idling will be minimized through technical and operational measures.• Unnecessary non-revenue equipment runs will be minimized through design and planning. <p>Mitigation Criteria:</p> <ul style="list-style-type: none">• Diesel engines used for traction and auxiliary power in locomotives and DMUs are subject to corresponding US EPA and Transport Canada heavy-duty diesel engine exhaust emission standards for CO, PM, NOx and HC	<ul style="list-style-type: none">• On-site inspections will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required.• Annually, test train propulsion and auxiliary power units, which produces exhaust emissions and ensure that they remain in compliance with applicable Transport Canada heavy-duty diesel engine exhaust emission standards for CO, PM, NOx and HC. Engine testing will include:<ul style="list-style-type: none">○ Testing at no load○ Testing at 50% load○ Testing at 100% load• Test rebuilt traction and auxiliary power diesel engines, before being placed into service, to the exhaust emission standards they are rebuilt to meet.• Develop an Air Sampling and Monitoring Plan and submit an annual report summarizing all sampling and monitoring results accumulated over the preceding year.
Noise and Vibration					
Operational Noise	–	<ul style="list-style-type: none">•	Environmental noise may cause annoyance, disturb sleep and	<u>Mitigation per TPAP Study Report (Noise Barriers):</u>	<ul style="list-style-type: none">• Measure and document the Leq (16-hour) and Leq (8-hour) noise levels,

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
			<p>other activities, and affect human health.</p> <p>If operations are projected to cause a 5-dB increase or greater in the average energy equivalent noise (referred to as “Leq”) relative to the existing noise level or the MECP objective of 55 dBA for daytime and 50 dBA for night-time, whichever is higher, then mitigation is required.</p>	<ul style="list-style-type: none">• Deploy the noise barriers defined in the Noise and Vibration Study Reports GO Rail Network Electrification Project, 2020 (RWDI).• Maintain noise barriers so as to ensure their continued effectiveness in noise reduction.• If deviating from the assessments made in the Noise and Vibration Study Reports GO Rail Network Electrification Project, 2020 (RWDI), comply with the noise impact and assessment criteria in the Metrolinx Guide for Noise and Vibration Assessment (2020). <p><u>Mitigation at the Source:</u></p> <ul style="list-style-type: none">• Deploy vehicle and track technology and related maintenance measures to maintain compliance with the noise and vibration exposure criteria defined below. <p><u>Mitigation Criteria:</u></p> <ul style="list-style-type: none">• Meet the following long-term day-time / night-time maximum noise exposure objectives at all noise sensitive receptors across the system, where background noise levels allow their realization:<ul style="list-style-type: none">○ 10-year objective: 70/60 dBA○ 20-year objective: 60/50 dBA○ 25-year objective: 55/50 dBA• Meet the airborne noise exposure criteria in the 1995 MOEE/GO Transit Draft Noise and Vibration Protocol.• Meet the ground-borne (vibration induced) noise exposure criteria in the 1995 MOEE/GO Transit Draft Noise and Vibration Protocol.• Meet any additional future criteria or guidance developed by regulatory agencies, as applicable.	<p>under predictable worst-case conditions, at locations where new noise mitigation barriers have been provided per the 2020 noise and vibration studies and per the Metrolinx Enhanced Mitigation Program. Outdoor measurements will be carried out in accordance with MECP requirements and US FTA Report No. 0123, Transit Noise and Vibration Impact Assessment Manual (2018). The primary purpose of these measurements is to ascertain the effectiveness of the implemented mitigation measure(s).</p> <ul style="list-style-type: none">• Assess the condition and performance of locomotives, coaches, DMUs and EMUs with respect to noise emissions as part of maintenance to ensure continued compliance with manufacturer specifications• Assess the condition and performance of the rail tracks and switches with respect to noise as part of maintenance to ensure continued compliance with manufacturer specifications
Construction and Maintenance-related Noise	•	—	Environmental noise may cause annoyance, disturb sleep and other activities, and affect human health.	<ul style="list-style-type: none">• Prior to commencement of construction, develop and submit a detailed Construction Noise Management Plan.• The Construction Noise Management Plan shall:	The Construction Noise Management Plan will incorporate the following requirements related to monitoring of noise and noise related complaints:

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
			<p>The severity of the noise effects resulting from construction projects varies, depending on:</p> <ul style="list-style-type: none">• Scale, location and complexity of the project• Construction methods, processes and equipment deployed• Total duration of construction near sensitive noise receptors• Construction activity periods (days, hours, time period)• Number and proximity of noise-sensitive sites to construction area(s)	<ul style="list-style-type: none">○ Document and commit to all measures to be taken for meeting the noise exposure limits documented in the Metrolinx Guide for Noise and Vibration Assessment (2020) at every directly exposed sensitive receptor and throughout the entire project.○ Determine the Zone of Influence for construction related noise based on the noise exposure limits outlined in the Metrolinx Guide for Noise and Vibration Assessment (2020) and taking into consideration the construction site, staging and laydown sites and hauling routes, each stage of the construction (including demolition), the overall construction schedule along with the schedule of each major component and associated major construction processes and equipment usage.○ Identify all sensitive receptors that fall within the Zone of Influence for construction related noise. Mitigation measures will be proposed for these sensitive receptors, and the effects of the proposed mitigation measures will then be evaluated using noise modelling. If results of the modelling indicate that any sensitive receptors still remain within the Zone of Influence for construction related noise, then the following shall apply:<ul style="list-style-type: none">✓ Additional mitigation is proposed and subsequently modelled until the sensitive receptor does not fall within the Zone of Influence; or✓ If mitigation strategies are not viable, receptor-based mitigation will be proposed. <ul style="list-style-type: none">• The Construction Noise Management Plan will include the temporary/permanent noise barriers indicated in the	<ul style="list-style-type: none">• Monitor noise where the Construction Noise Management Plan indicates that noise exposure limits may be exceeded. At these locations, monitor noise continuously at each geographically distinct, active construction site with one monitor located strategically to capture the highest exposure level based on planned construction activities and the number, geographic distribution and proximity of noise sensitive receptors. Develop weekly reports describing the monitoring conducted and summarizing the data collected for the reporting period. The reports will include but not be limited to the number and duration of any incident during which any of the noise exposure limits documented in the Metrolinx Guide for Noise and Vibration Assessment (2020) were exceeded, the probable cause of each exceedance, the incident-specific measure(s) implemented, the resulting mitigated noise levels and the complaints investigation procedure.• Establish a Communications Protocol and a Complaints Protocol to respond to issues that develop during construction.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				applicable noise and vibration construction impact assessment report (2020). Where additional work sites are identified which were not assessed as part of the applicable noise and vibration construction impact assessment report (2020), or where construction activities at any given site differ from those considered in this report, conduct modelling to evaluate the need for additional noise barriers as part of the Construction Noise Management Plan.	
Operational Vibration (Trains)	–	<ul style="list-style-type: none">	<p>Vibration can cause annoyance, interfere with human activity and affect human health. It may also cause building damage.</p> <p>A change in vibration levels may occur where there are changes in track alignment, addition of new track, and changes to or addition of special track work.</p> <p>Vibration levels may also change with changes in rail vehicle specifications and operating conditions.</p>	<p><u>Mitigation per TPAP Study Report:</u></p> <ul style="list-style-type: none">Deploy mitigation recommended in the OnCorr Noise and Vibration Study Report (RWDI). Review and update the vibration assessment during the design of new infrastructure at representative receptor locations to ensure compliance with the vibration exposure criteria in the MOEE/GO Transit Draft Protocol for Noise and Vibration Assessment (1994). <p><u>Mitigation at the Source:</u></p> <ul style="list-style-type: none">Deploy vehicle and track technology and related maintenance measures to maintain compliance with the noise and vibration exposure criteria defined below. <p><u>Mitigation Criteria:</u></p> <ul style="list-style-type: none">Meet the ground-borne vibration criteria in the 1995 MOEE/GO Transit Noise and Vibration Protocol.	<ul style="list-style-type: none">Measure and document the vibration impacts, under predictable worst-case conditions, of each distinct type of GO Transit train consist operating in the corridor of interest at locations where the 2020 noise and vibration studies recommends mitigation of vibration impacts. Measurements will be carried out at or near representative vibration sensitive receptors in accordance with MECP requirements and US FTA Report No. 0123, <i>Transit Noise and Vibration Impact Assessment Manual</i> (2018). The primary purpose of these measurements is to ascertain the effectiveness of the implemented mitigation measure(s).Assess the condition and performance of locomotives, coaches, DMUs and EMUs with respect to vibration levels as part of maintenance to ensure continued compliance with manufacturer specificationsAssess the condition and performance of the rail tracks and switches with respect to vibration levels as part of maintenance to ensure continued compliance with manufacturer specifications

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Construction and Maintenance-related Vibration	•	–	Exposure to vibration may result in public annoyance and complaints. Vibration may also cause damage to buildings and other structures.	<ul style="list-style-type: none"> Adhere to the following vibration exposure limits: Vibration, as a human irritant, is assessed in terms of its average level. Vibration velocity should not exceed 0.14 mm/s or current conditions (whichever is higher) by more than 25%. As a threat to buildings, vibration is assessed in terms of its peak value. The Zone of Influence for vibration shall be the area where structures are expected to experience vibration peak particle velocities that exceed 5 mm/s. Vibration velocity should be limited to 8-22 mm/s, depending on vibration frequency. These limits are prescribed by the most current versions of the Toronto Municipal Code Chapter 591, Noise (2020) and Chapter 363, Vibration (2019) for typical structures (not building with special needs). Adhere to the ground-borne (vibration induced) noise exposure criteria in the US FTA Report No. 0123, Transit Noise and Vibration Impact Assessment Manual (2018). Develop and implement a detailed Construction Vibration Management Plan for Metrolinx review and approval with minimum requirements outlined below: Complete a detailed construction related vibration assessment prior to the commencement of construction that includes assessment of the vibration Zone of Influence. The Zone of Influence for vibration shall be established by using the methodology and input data provided in Section 7.2 of the US FTA Report No. 0123 (2018), <i>Transit Noise and Vibration Impact Assessment Manual</i> (2018). Complete pre-construction condition surveys for properties within the vibration Zone of Influence of the planned work to establish their condition and establish a baseline prior to any work beginning. Identify any heritage structures and other sensitive structures, buildings or infrastructure vulnerable to vibration damage, assess requirements and, if necessary, develop mitigation measures. Identify buildings, where vibration sensitive activities such as sound recording or medical image processing take place, assess requirements and, if necessary, develop mitigation measures. 	<p>The Construction Vibration Management Plan will incorporate the following requirements related to monitoring of vibration and vibration related complaints:</p> <ul style="list-style-type: none"> Monitor vibration continuously at structures where the Construction Vibration Management Plan indicates that structures are deemed to be within the Zone of Influence for construction related vibration or at additional structures as requested by Metrolinx. The type of Vibration Monitoring Program that is established is based on the vibration Zone of Influence, the project location, duration, presence of night-time activity, and receptor proximity. The monitoring types include: <ul style="list-style-type: none"> ✓ Type 1: Monitoring continuously throughout the project (for receptors within the Zone of Influence). ✓ Type 2: Monitoring during most impactful phases of the project only (for receptors outside of the Zone of Influence but within 50 m of the boundary of the construction site). ✓ Type 3: Monitoring in response to complaints only (for receptors outside of the Zone of Influence and beyond 50 m of the boundary of the construction site). Establish a Communications Protocol and a Complaints Protocol to respond to issues that develop during construction.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<ul style="list-style-type: none">Establish a 15-metre setback distance between the construction vibration source and nearby buildings, where possible, to minimize impacts. If this is not possible, then monitor the vibration levels associated with the activity.Select construction/maintenance methods and equipment with the least vibration impacts.In the presence of persistent complaints and subject to the results of a field investigation, identify alternative vibration control measures, where reasonably available.	
Contaminated Materials					
Excavated Materials	<ul style="list-style-type: none">	–	Construction operations could expose contaminated materials and/or result in the spreading of contaminated materials	<ul style="list-style-type: none">Develop a Soil and Excavated Materials Management Plan for the handling, management and disposal of all excavated material (i.e. soil, rock and waste) that is generated or encountered during the work. The plan will be overseen by a Qualified Person pursuant to <i>Ontario Regulation 153/04</i> under the <i>Environmental Protection Act</i> (QP) and will comply with <i>Ontario Regulation 406/19</i> (On-Site and Excess Soil Management – to be enacted into law on July 1, 2020), the Ministry of the Environment, Conservation and Parks (MECP), formerly the Ministry of the Environment and Climate Change (MOECC)’s <i>Management of Excess Soils: A Guide for Best Management Practices</i> (April 2019, as amended) and all Applicable Law. The plan will describe how to address the management of the excavated materials, imported materials, contaminated materials, and impacted railway ties, including handling, transportation, testing, documentation and reuse and disposal of excavated materials generated as part of the works and in accordance with applicable regulatory requirements and the Project Agreement, as applicable.Non-soil materials, including railway bedding, railway ties, or ballast materials encountered during the earthworks will also require waste classification as documented by testing where applicable to determine management and disposal requirements as per <i>Ontario Regulation 347</i> (as amended) and all Applicable Law.The Soil and Excavated Materials Management Plan will be reviewed and approved by Metrolinx prior to construction.	<ul style="list-style-type: none">A Soil and Excavated Material Monthly Dashboard Report will be developed by the Constructor for Metrolinx review that includes monitoring and performance data related to the management of excavated materials for the preceding month.Upon completion of the work, the Constructor will submit a Soil and Excavated Material Management Implementation Report to Metrolinx.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Traffic and Transportation					
Traffic	<ul style="list-style-type: none">	–	Construction may result in the need for temporary road or lane closures changing access to nearby land uses	<ul style="list-style-type: none">Traffic Control and Management Plan(s) will be developed prior to construction to maintain reasonable access through work zones, to the extent possible.Access to nearby land uses will be maintained to the extent possible. Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur.Traffic signal timing optimization may be assessed/implemented to increase capacity of affected intersections and to aid in the movement of traffic and would be determined through coordination between Metrolinx and the municipality. Appropriate changes to traffic signal timings will be undertaken if required.Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory, and warning signs.	<ul style="list-style-type: none">Traffic impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.Cycling network impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjust as necessary during the construction period.
Stormwater Management					
Potential Impacts and Proposed Mitigation Measures for Stormwater and Site Drainage	<ul style="list-style-type: none">	–	<ul style="list-style-type: none">The proposed construction activities pose a potential impact due to sediment transport into adjacent natural areas including watercourses, wetlands and municipal drainage infrastructure.The proposed works may result in increases to impervious areas, with potential effects to water quantity and quality.In addition to the increases in impervious coverage, there may be alterations to the local drainage system, both overland (major drainage system) and storm sewers (minor drainage system).	<ul style="list-style-type: none">Prepare and implement a Drainage and Stormwater Report, an Erosion and Sediment Control Plan, detailed drainage design and erosion and sediment control drawings in accordance with the Ministry of the Environment, Conservation and Parks (MECP) <i>Stormwater Management Planning and Design Manual</i> (2003), the Greater Golden Horseshoe’s <i>Erosion and Sediment Control Guideline for Urban Construction</i> (December, 2006), as amended from time to time, and the guidelines and regulatory requirements of the Conservation Authority having jurisdiction.The overall stormwater quality and quantity control strategy will be developed in accordance with all relevant municipal, provincial and federal requirements, as amended, as well as the requirements of Conservation Authorities having jurisdiction.A detailed assessment of proposed ditches along the rail corridor is required to ensure adequate drainage conveyance in accordance with municipal requirements and American Railway Engineering and Maintenance-of-Way	<ul style="list-style-type: none">Turbidity levels within discharges from sites to be monitored visually. Turbidity levels will be monitored upstream and downstream of sites at watercourse crossings or adjacent to watercourses. Turbidity levels within discharges from sites and within receiving storm sewers will also be monitored visually to determine potential impacts from construction.Grab samples for existing watercourses and/or wetlands, when runoff from the site discharges to a watercourse and/or wetland will be conducted for pre-construction, during construction, and post construction conditions until the site is considered stabilized. Grab samples for watercourses and wetlands will be

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<p>Association (AREMA) <i>Manual for Railway Engineering</i> (2019).</p> <ul style="list-style-type: none">• Infiltration requirements for municipalities will be determined as per the design guidelines and standards.• To offset the potential impacts to wetlands, the grades and drainage system on the periphery of the grade separation may need to be designed to result in minor local drainage diversions to the wetland features. An annual water budget for existing, future (without mitigation) and future (with mitigation) would have to be conducted. Input from a terrestrial biologist is required to review the annual water budget variations for existing and future conditions.• Develop and implement a Spill Prevention and Response Plan in accordance with the Project Agreement.	<p>taken for non-precipitation event and for precipitation events to obtain a reasonable understanding of the turbidity levels. Post-construction monitoring of wetland areas may be required depending on input from Conservation Authorities.</p> <ul style="list-style-type: none">• Monitoring will be conducted for potential oil spills and containment of spills to be conducted as per provincial requirements.• Functionality of stormwater quantity controls including peak flows and water levels for storm events within the design range. Monitoring would require local rainfall data.• Infiltration targets measured by flow monitoring on infiltrative Low Impact Development (LID) Best Management Practices (BMPs).• Stormwater quality measures will be assessed to provide a minimum 80% Total Suspended Solids (TSS) removal as per the MECP <i>Stormwater Management Planning and Design Manual</i> (2003). Where applicable, additional water quality requirements as per the LSRCA's Lake Simcoe Phosphorus Offsetting Program (LSPOP).• Within LSRCA's jurisdiction, Phosphorus levels immediately downstream of sites will be monitored and compared to baseline conditions determined prior to construction.
Hydrogeology					
Groundwater	<ul style="list-style-type: none">•	–	Construction operations could expose groundwater and associated contamination	<ul style="list-style-type: none">• Develop a Groundwater Management and Dewatering Plan to guide the handling, management, and disposal of groundwater encountered during the works. The Groundwater Management and Dewatering Plan will be	<ul style="list-style-type: none">• A Groundwater Management Monthly Dashboard Report will be developed by the Constructor for Metrolinx review to document performance

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<p>overseen by a QP and will comply with <i>Ontario Regulations 406/19</i> (On-Site and Excess Soil Management – to be enacted into law on July 1, 2020), <i>64/16</i> and <i>387/04</i>, as amended under the <i>Ontario Water Resources Act</i>.</p> <ul style="list-style-type: none">• The Groundwater Management and Dewatering Plan will describe the handling, transfer, testing, monitoring, disposal of groundwater generated as part of the works and in accordance with applicable regulatory requirements and the Project Agreement. The Groundwater Management and Dewatering Plan will outline general groundwater monitoring considerations during the works and provide guidance for groundwater monitoring following the works where considered applicable.• The Groundwater Management and Dewatering Plan will describe the anticipated groundwater quantity and dewatering Zone of Influence that will be encountered during the works, and if approvals are needed for the water taking, such as a Permit to Take Water (PTTW) or an Environmental Activity Sector Registry (EASR) from the MECP.• The Groundwater Management and Dewatering Plan will describe the storage, transfer, and disposal and or treatment of the groundwater collected during the works, and approvals for the water disposal, and/or treatment if applicable, based on the quantity and quality.• The Groundwater Management and Dewatering Plan will be reviewed and approved by Metrolinx prior to construction.	<p>monitoring data/results and any corrective actions implemented during the previous month.</p> <ul style="list-style-type: none">• Upon completion of the work, the Constructor will submit a Groundwater Management and Dewatering Implementation Report to Metrolinx.
Utilities					
Utilities Planning and Construction	<ul style="list-style-type: none">•	<p>–</p>	Utility serviceability effects due to design requirements and construction	<ul style="list-style-type: none">• Develop and implement a detailed Utility Infrastructure Relocation Plan that identifies all utilities anticipated to be impacted by the construction works, all relevant utility agencies and authorities, and outlines the approach to the utility relocation process. The Utility Infrastructure Relocation Plan will be developed in accordance with the Project Agreement.• Additional surveys shall be performed prior to construction to field locate and verify the existing utilities within the project area and document their condition.	<ul style="list-style-type: none">• Maintain regular communication and coordination through issuance of regular progress reports and updates to applicable utility agencies.• Record all installation tolerances and how they are to be monitored.• Perform inspection and testing to ensure successful utility relocation and safe and efficient installation.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				<ul style="list-style-type: none">Perform all work identified in the Utility Infrastructure Relocation Plan to protect, support, safeguard, remove, and relocate all Utility Infrastructure.Obtain permits and consents from and with all Utility Companies with respect to the design, construction, installation, servicing, operation, repair, preservation, relocation, and or commissioning of Utility Infrastructure.Ensure minimizing impact to the Train Service Plans and to continuity of service and disruption to property owners and customers of the Utility Companies to the satisfaction of the Utility Companies and Metrolinx.	<ul style="list-style-type: none">In the event of potential impacts to critical utilities, instrumentation and monitoring shall be carried out to protect the critical utilities and structures and reduce risks of damage due to construction activities.
Utilities Post-Construction Phase	–	•	Future Utility Maintainability	<ul style="list-style-type: none">Where new utility crossings are proposed, application for a new utility crossing agreement will be required. Where modifications to an existing utility crossing takes place, updates to an existing utility crossing will be needed.Post- construction inspections of the new utility infrastructure shall be undertaken for applicable works upon completion of the construction works to document condition.Obtain as-built plans of the relocated infrastructure from utility agencies per as-built preparation standards <i>CSA S250-11 – Mapping of Underground Utility Infrastructure</i> (2011), as amended from time to time.	<ul style="list-style-type: none">Develop and implement tracking system for as-built deliverables.

5.0 Consultation

Consultation for this project has been undertaken in accordance with *O.Reg. 231/08 Transit Projects and Metrolinx Undertakings*, Section 15. Engagement has been undertaken with a variety of key stakeholders to solicit comments and feedback on the proposed Grade Separation. Metrolinx consulted with the public, Indigenous Nations, property owners, elected officials, Technical Advisory Committee members, and review agencies during this addendum process to ensure their feedback could be fully considered and incorporated.

Formal consultation in advance of the Notice of EPR Addendum was commenced with the publication of the Notice of Public Meeting first published on January 30, 2020. Informal consultation, as well as discussions with municipal stakeholders, has been ongoing since the issuance of the BRCE in mid-2017. Various methods of communication have been employed throughout the addendum process. The consultation record is documented in Appendix H.

5.1 Consultation Overview

Consultation for this project has been grouped with the other projects that are part of the GO Expansion Program, providing an opportunity for a more fulsome engagement process. The objectives of this approach were to:

- Meet the requirements of O.Reg. 231/08, s. 15;
- Engage with diverse stakeholders;
- Educate about the requirements for Grade Separations;
- Provide opportunities to comment on and feedback to the proposed project design; and
- Inform local communities of the Network Wide Structures Project Addendum.

Due to the changes to the project associated with the Significant Addendum to the BRCE, renewed consultation activities were conducted under Section 15 of *O.Reg. 231/08*. To ensure that stakeholders had the opportunity to comment on the project in advance of the prescribed review period following distribution of a Notice of EPR Addendum, additional consultation activities were undertaken.

In order to attract as many stakeholders as possible, a diverse set of engagement methods were employed, including:

- Online engagement at www.metrolinxengage.com, where participants could learn more about the Project and share their comments by e-mail;
- Notifications and email updates;
- Meetings with Review Agencies (Federal, Provincial, Municipal and Conservation Authorities);
- Notifications and presentations to Elected Officials;
- Notifications to Indigenous Nations;

- Meetings with Utilities;
- Notifications to Property Owners;
- In person Public Meetings, at various locations, chosen based on the proposed siting of GO Expansion Improvements;
- Virtual Public Meetings;
- Newspaper, Radio, and Social Media Advertisements; and
- Targeted Mailouts to directly affected property owners and residents within 100m of both sides of the rail corridor.

5.1.1 GO Expansion Consultation Program

Metrolinx engaged in a variety of projects under its GO Expansion Program Update to help improve GO Rail service within the GGHA. The projects included within the GO Expansion Program are as follows:

- New Track and Facilities TPAP;
- Scarborough Junction Grade Separation TPAP;
- Stouffville Grade Separations TPAP;
- Network Wide Structures Project (Significant Addendum to the Barrie Rail Corridor Expansion Project Environmental Project Report 2017); and
- GO Rail Network Electrification (Significant Addendum to the GO Rail Network Electrification Environmental Project Report 2017).

In order to more efficiently present information on multiple, interrelated aspects of the GO Expansion Program, and so that interested persons could participate in combined meeting sessions, consultation activities for the Network Wide Structures Program took place alongside those for the other portions of the GO Expansion Program. As such, the notifications, meetings, and Public Information Centres included information related to other programs listed above.

Through the GO Expansion Consultation Program, general public feedback was solicited through three rounds of consultation:

- Public Meeting #1, a series of Public Meetings that took place in 10 locations, chosen based on the proposed siting of GO Expansion improvements in February 2020 (detailed in Section 5.4.1);
- Public Meeting #2 for the full GO Expansion Program, a Virtual Information Centre (Due to the global Covid-19 pandemic) online between August 18 and September 1, 2020 (detailed in Section 5.4.2). Participants were able to read about the McNaughton Road Grade Separation Project and asked Metrolinx general questions about the project. There was no new information from the McNaughton Road Grade Separation project presented in this round; and

- Public Meeting # 3, a Virtual Information Centre (Due to the global Covid-19 pandemic) online between November 27 and December 11, 2020 (detailed in Section 5.4.3).

5.1.1.1 Online Engagement

A Project website was developed to provide general information about the GO Expansion Program (<https://www.metrolinxengage.com>). The website provides a comprehensive hub for interested stakeholders and members of the public to learn more about a variety of Metrolinx initiatives. This website allows viewers to find out how they can participate in consultation events, provide feedback, as well as register their e-mail address for project updates.

Specific information about the McNaughton Road Grade Separation could be found under the Network Wide Structures Project section of the website (<https://www.metrolinxengage.com/en/engagement-initiatives/network-wide-structures-project-wellington-and-mcnaughton>). The Project website was set up ahead of Public Meeting #1 to provide information about the Public Meetings for the Project including dates and locations. The Project website housed documents reports and drawings relevant to the project. These documents included maps, program updates, discussion guide and information sheets, panels describing the technical studies and proposed infrastructure (which were presented at the in person Public Meetings), roll plans, a journey map, and the vegetation guide. Prior to Public Meeting #3 the project website was updated and the web address was changed (<https://www.metrolinxengage.com/en/engagement-initiatives/network-wide-structures-project-pic3>). Additional information was added including updated panels and web content.

The Project Website also provided a contact form for members of the public to submit comments and feedback about the Project, and a message board where questions and answers could be posted. Feedback received through these mechanisms can be found in Table 5.1-1.

Project Email Addresses

Metrolinx utilized multiple engagement specific email addresses to send notifications and receive responses related to the GO Expansion Program:

- GOExpansionTPAP@metrolinx.com – General email;
- IndigenousRelations@metrolinx.com – For Correspondence with Indigenous Nations; and
- YorkRegion@metrolinx.com – Regional email address.

Table 5.1-1: Summary of Comments Relevant to McNaughton Road Grade Separation Received through Online Engagement

ID	Title	Date Submitted	Question/Comment	Official Response
1	Official crossings where the railway is a barrier to walkability Anonymous Feb 25, 2020 - 07:39	Feb. 25, 2020	<p>I know this study is specifically about grade separations, but please please please consider putting in official pedestrian crossings, be they grade level or separated, in places where people already can't help trespassing.</p> <p>For instance on the Barrie line, at Bridgeland Avenue and Floral Parkway. I hope you'll agree that it's crazy that someone could live a few metres from their job across the tracks but have to walk over 3 km to get there legally.</p>	<p>Thank you for sharing your comments regarding the proposed Wellington Street East Grade Separation in the Town of Aurora, and for your suggestions regarding pedestrian crossings on the Barrie corridor. The grade separation project is in the very early stages of the environmental assessment and design. Metrolinx is conducting studies to determine the impact of the proposed grade separation on the local environment and mobility patterns.</p> <p>Metrolinx is focused on increasing first and last mile connections for pedestrians, cyclists, transit users and carpoolers to GO Stations, as this is a priority action outlined in Metrolinx's 2041 Regional Transportation Plan.</p> <p>There will be future opportunities to learn more about the various projects happening across the region. Please email YorkRegion@metrolinx.com if you would like to be added to the regional distribution list to receive further updates or invitations pertaining to Metrolinx projects in York Region.</p>
2	Impact Assessment - Noise and Vibration	Feb. 26, 2020	<p>As I showed you and indicated that I had previous dialogue with many of Metrolinx Staff.</p> <p>At the Markham Meeting on Feb 18 - I spoke with John? and James Hartley whom both assured me that there would be an expert in the area of NOISE POLLUTION at the next meetings.</p> <p>I came to the Aurora meeting and you indicated that the Communications person could address my concerns.</p> <p>I am tired of asking to discuss this issue with Metrolinx experts and been given the brush off.</p> <p>You mentioned that there was a Consultant RWDI from Guelph that was working with Metrolinx.</p> <p>A quick look at their projects does not indicate any Noise Studies, but their CEO indicated in a brief recorded message that " communication with the client AND the clients Representatives was paramount for their success"</p> <p>When can I expect to be informed of this TRAIN WHISTLE PROJECT and provide input??</p> <p>What input and representation is provided by the Residents that bear the blunt of these 110dBA blasts??</p>	<p>It was great meeting you at the GO Expansion Public Open Houses in Markham and Aurora. I apologize for any confusion about a noise specialist being in attendance at the Aurora meeting. As you are aware – our noise and vibration studies are ongoing to support the TPAP projects. We are anticipating sharing the results (and have a noise specialist in attendance) at our second round of open houses. We are aiming to host these meetings in Spring 2020.</p> <p>We recognize that train whistles are loud, but Metrolinx follows the Federal Canadian Railway Operating Rules to sound the whistles in the interest of public safety. Sounding whistles, their volume and frequency are federally regulated by Transport Canada.</p> <p>Whistle cessation is a municipal led process. In the past, Metrolinx has successfully worked with municipalities to implement whistling cessation where requested. The City of Markham just completed this process for 13 level crossings, and you can read about it here - https://www.cbc.ca/news/canada/toronto/markham-mandatory-train-whistling-level-crossings-1.5474675. I encourage you to reach out to the Town of Newmarket Elected Officials to discuss whistle cessation.</p>

ID	Title	Date Submitted	Question/Comment	Official Response
			<p>I would like to start from square one again and you were going to get me in touch by e-mail AND a phone number for the BOSS - Jason Ryan.</p> <p>I wish to meet with him and his experts.</p> <p>Could you ask him to e-mail me to set up a meeting after March 22-2020</p>	
3	Proposed McNaughton Road Bridge Design is flawed	Dec. 1, 2020	<p>So who is the great designer at Metrolinx who came up with the Design to go over the tracks and not include a wider sidewalk or multi-use pathway on the north side? Why is this design so different from what I see being built at Rutherford Road GO? Are the residents on the south side of McNaughton Road fools? Do you think residents are going to enjoy seeing this new ugly bridge towering over the existing residential properties. Metrolinx's justification for going over the tracks was all about money and had nothing to do with any other factors! You're telling us that you will be buffering the south side of the structure with landscaping, REALLY, a couple of twigs and Metrolinx will call it a day!!! The project manager and anyone who is leading this design should be fired and replaced with more qualified designers and project manager. Have you seen what York Region is doing on Major Mackenzie Drive for their new bridges? Who has the gull to present a new bridge to the public without a sidewalk or multi-use pathway on the north side. We want what we see at Rutherford Road! Mayor, Regional Councillors, Local Councillors & Provincial MPs please instruct Metrolinx to go back to the drawing board and come up with a better design for this location. By the way, there is an existing sidewalk on the north side of McNaughton Road, maybe your designer should visit the site? PLEASE CHANGE THIS DESIGN!!! Thank for giving us the opportunity to voice our concerns and I hope Metrolinx is not going through the motions during Covid-19 to push a cheap design while no one was paying attention?????</p>	<p>Thank you for sharing your comments regarding the proposed McNaughton Road Grade Separation. This project is in the early stages of environmental assessment and design, where we are determining the impact of the proposed grade separation on the local environment. Our studies analyze traffic impacts, socio-economic and land use factors, and local heritage to ensure that impacts of the proposed grade separation are mitigated.</p> <p>The road over rail grade separation at McNaughton Road was selected as the proposed design as it minimizes impacts to surrounding properties while maintaining construction timelines and rail service. In 2019, Metrolinx conducted an options analysis to determine the appropriate type of grade separation (overpass or underpass). We analyzed impacts to stakeholders, local setting, public realm, property impacts, utilities, engineering constraints, environment, operations and maintenance, capital costs and benefits. The results of this analysis concluded that a road overpass is the most feasible option considering all of these factors.</p> <p>By contrast, a road underpass presents a number of challenges. On McNaughton Road, groundwater levels in the area could require extensive excavation and dewatering in order to make it safe to build the underpass. This would result in additional infrastructure requirements, including pumping stations and associated utilities that would ultimately lead to additional property impacts within the local community. The underpass option would also require a track diversion, resulting in additional property impacts.</p> <p>Regarding a pedestrian connection on the north side of McNaughton Road, Metrolinx is currently in discussion with municipal stakeholders on a proposed option. As we are in the early design stage for this project, the community will be kept informed of any developments.</p> <p>Metrolinx will be back to the community on this project as it develops, and there will be future opportunities to provide your feedback. Please email us at YorkRegion@metrolinx.com if you would like to be added to the regional distribution list and receive further updates or invitations pertaining to projects in York Region.</p>
4	McNaughton grade separation	Dec 2, 2020	<p>Maple Go Currently has a exit from the north end to McNaughton road. The proposed solution removes this access point. The concern is that all traffic will</p>	<p>You're correct, the proposed grade separation at McNaughton Road would remove the ability for vehicles to exit onto McNaughton Road. The impact this would have on local traffic is something that Metrolinx has undertaken as part of the McNaughton Rd. Grade Separation Significant Environmental Project Report</p>

ID	Title	Date Submitted	Question/Comment	Official Response
			now be ushered to Hill St. and Eagle Rock Way which already experience overflow during rush hour. How will this added congestion be mitigated? Will Hill Street or Eagle Rock Way have any road improvements to help with the flow of traffic onto Major Mackenzie/McNaughton?	(EPR) Addenda. As part of construction staging, the right-out only exit from the GO parking lot onto McNaughton Road is to be permanently closed, while alternative access via Eagle Rock Way on the south side is to be maintained. As we move closer to construction, Traffic Control and Management Plan(s) will be developed in collaboration with the City of Vaughan to maintain reasonable access through work zones, to the extent possible. As part to those plans, mitigation measures such as signal-timing optimization may be implemented through coordination between Metrolinx and the municipality as part of the detailed design and implementation phases.
5	McNaughton Road Bridge 3D Model	Dec 7, 2020	Can you please present a better 3D image of what the McNaughton Road Bridge will look like and in relation to the existing homes to the south side. How high will this bridge be and what acoustical measures will you be incorporating into the south barrier to protect residents from this new traffic noise that will be generated with trucks and cars on this bridge? The noise wall on McNaughton should be replaced or even raised to protect our community? Please make this bridge beautiful respecting the Maple area.	<p>Thank you for sharing your comments regarding the proposed McNaughton Road Grade Separation. This project is in the early design stage and we have provided the 3D images that are currently available. As the design progresses the renderings will be updated based on the latest design details to include more information and aesthetic details.</p> <p>We will work with the City of Vaughan on the aesthetics of the retaining walls and protection barriers, as well as the slope on the south side of the proposed grade separation. As we are in the early design stage for this project, the community will be kept informed of any developments, and we look forward to consulting the community as plans progress.</p> <p>At the highest point, the proposed top of the barrier / railing will be approximately 12.5m above the existing road surface. On the bridge itself, there will be a railing and protection barrier on both sides of the grade separated roadway.</p> <p>We have conducted studies to ensure that the impacts of the proposed grade separation are mitigated, including a Traffic Impact Assessment (TIA). As a result of the TIA, the road will maintain two lanes in each direction, similar to the existing configuration. Therefore, there will be no changes to traffic volume and no measurable change in vehicle noise from traffic along McNaughton Road as a result of the grade separation.</p> <p>However, this is a preliminary study and there are some impacts that require further analysis as the design is further fleshed out. A detailed analysis of the changes in noise levels resulting from the grade separation will be completed at the detailed design. For more information on operational noise and vibration mitigation measures, please visit https://www.metrolinxengage.com/en/content/go-rail-network-electrification-addendum-noise-vibration-and-air-quality-studies.</p> <p>Metrolinx will be back to the community on this project as it develops, and there will be future opportunities to provide your feedback. Please email us at YorkRegion@metrolinx.com if you would like to be added to the regional distribution list and receive further updates or invitations pertaining to projects in York Region.</p>
6	Traffic/ Road Improvements??	Dec 7, 2020	Traffic is a night mare in this area when the train arrives. What improvements are being proposed at the intersection of Hill Street & McNaughton Road? at McNaughton Road & Major Mackenzie Drive?? at McNaughton Road & Keele Street??	The McNaughton Road Grade Separation is in the early stages of environmental assessment and design, and we have conducted studies to ensure that the impacts of the proposed grade separation are mitigated. These studies include a Traffic Impact Assessment (TIA). As a result of the TIA, McNaughton Road will maintain two lanes in each direction, similar to the existing configuration. In addition, once complete, this project will remove the at-grade crossing with McNaughton Road and the rail corridor, which means that cars won't have to wait at the crossing as trains pass. This is especially significant as Metrolinx introduces all-day two-way service with trains running up to every 15 minutes in each direction.

ID	Title	Date Submitted	Question/Comment	Official Response
				<p>Prior to construction of the grade separation, we will develop Traffic Control Management Plan(s) to maintain reasonable access through work zones, where possible. In accordance with this plan, we will monitor traffic impacts and make adjustments as necessary during the construction period.</p> <p>As part of the traffic impact assessment for post-construction conditions, we've considered potential mitigation measures to control traffic. These include optimizing the signal timing at the intersections you mentioned, and introducing turning lanes at the intersections of Major Mackenzie Drive and Keele Street.</p>
7	Street View of proposed McNaughton Bridge	Dec 11, 2020	<p>Further to the comments I noticed below could we please see a 3D view of this bridge from the perspective of Lindenshire Avenue and Salterton Circle? How much higher will this bridge be from the ground, 5m? 10m? I am also worried about truck & car noise into these residential communities. What size of trees are you planting? Large mature trees to hide the bridge height? Are you installing some type of high glass wall on the bridge to protect the residents from the noise? I do not see anything from the drawing.</p> <p>I am also disappointed that this bridge did not go below ground like you are doing on Rutherford Road. Good design usually costs money and using the excuse that there is ground water or utility relocation is a very, very poor response to the residents of Vaughan. You just do not want to spend the money in this location, this is the bottle line and you can try to justify this any way you want to try to move this project forward but we know the truth!!! Please reconsider the design of this project and do the right thing as I am sure the City of Vaughan is not supporting this design from BIG BROTHER.</p>	<p>Thank you for sharing your comments regarding the proposed McNaughton Road Grade Separation. As our design progresses, renderings will be updated accordingly to include more information and aesthetic details. At its highest point, the top of the overpass will be approximately 12.5m above grade with the opening for trains having 7m of clearance.</p> <p>Metrolinx conducted a Traffic Impact Assessment (TIA) as part of the environmental studies completed for this project. The results of the traffic impact assessment indicated that the proposed grade separation will not result in changes to the traffic volumes along McNaughton Road, nor will the proposed grade separation increase the capacity of the roadway as it will maintain two lanes in each direction similar to existing configuration. Therefore, there will be no measurable change in the vehicle noise emitted from the traffic along McNaughton Road as a result of the grade separation.</p> <p>When the final design characteristics are more solidified, a detailed analysis of the changes in noise levels resulting from the grade separation will be completed. Metrolinx will be building noise mitigation across our network as we deliver GO Expansion. In particular, noise walls will soon be built along the west side of the Barrie Corridor adjacent to Maple GO. This is being completed as part of the double tracking and enabling works which will soon be underway in Vaughan known as Barrie Contract 2. We are currently in the procurement stage for this project and expect construction to start next year. For an interactive map of the proposed locations of noisewalls, please visit this interactive map: https://maps.metrolinx.com/arcgis/apps/webappviewer/index.html?id=199ded6da5e746c08f4742df9c921f8c</p> <p>On the topic of vegetation, the 3D image shows that the embankment south of the grade separation will be landscaped to soften visual impact. An Integrated Vegetation Management plan will be prepared to guide the site grading, surface treatments, and plantings to be compatible with the Metrolinx Vegetation Guideline (2019), local site conditions, and applicable municipal standards and guidelines. It is too early in the process to determine the type of trees that will be planted.</p> <p>In 2019 Metrolinx conducted an options analysis to determine the appropriate type of grade separation (overpass or underpass). We analyzed impacts to stakeholders, local setting, public realm, property impacts, utilities, engineering constraints, environment, operations and maintenance, capital costs and benefits. The results of this analysis concluded that a road overpass is the most feasible option considering all of these factors. By contrast, a road underpass presents a number of challenges. For one thing, the existing road profile places the rail crossing at a lower elevation than the road. Given the proximity to Maple GO, the track cannot be raised, and as a result, to accommodate an underpass the section of McNaughton Road from Keele Street to Rodinea Road/Troon Avenue would need to be significantly lowered through excavation. This would result in the disposal of large quantities of earth, and with substantial lengths of retaining walls required to limit property impacts. In addition, as you've pointed out</p>

ID	Title	Date Submitted	Question/Comment	Official Response
				<p>from a previous response, another significant factor inhibiting the road underpass is that the groundwater levels in the area could require extensive excavation and dewatering in order to make it safe to build the underpass. This would result in additional infrastructure requirements, including pumping stations and associated utilities that would ultimately lead to additional property impacts within the local community. Lastly, underpass option would also require a track diversion, resulting in additional property impacts.</p> <p>Metrolinx will be back to the community on this project as it develops, and there will be future opportunities to provide your feedback. Please email us at YorkRegion@metrolinx.com if you would like to discuss this further or be added to the regional distribution list and receive further updates or invitations pertaining to projects in York Region.</p>

5.1.2 TPAP Addendum Consultation Program

In addition to the consultation detailed above, the following consultation occurred specific to the Network Wide Structures Project:

- Letters sent to potentially impacted property owners (See Appendix H-7); and
- Meetings with directly affected property owners.

5.1.3 Stakeholder Engagement Methods/Tools/Activities

5.1.3.1 Stakeholder Contact List

The Stakeholder Contact List was developed as part of the BRCE TPAP. This list was updated to reflect the parameters of the Network Wide Structures TPAP Addendum and updated as required to facilitate consultation and maintain connections with interested stakeholders. The list consisted of the following stakeholder groups: members of the public, property owners, Indigenous Nations, review agencies (federal, provincial, municipal and conservation authorities), elected representatives, utility companies, transit authorities, community/interest groups, EMS services, school boards, and other rail operators. The contact list contained the names, addresses, phone numbers and email addresses of each individual so that they could receive project updates throughout the project and addendum.

Representatives from the following public bodies were included in the stakeholder mailing list:

Federal Government

- Transport Canada
- Canadian Transportation Agency
- Environment and Climate Change Canada
- Fisheries and Oceans Canada
- Health Canada
- Impact Assessment Agency of Canada
- National Trust for Canada
- NavCanada
- Parks Canada
- Canadian Environmental Assessment Agency

Provincial Government

- Ministry of Environment, Conservation and Parks
- Ministry of Indigenous Affairs
- Ministry of Energy, Northern Development and Mines
- Ministry of Municipal Affairs and Housing

- Ministry of Natural Resources and Forestry
- Ministry of Heritage, Sport, Tourism, and Culture Industries
- Ministry of Transportation
- Ministry of Community Safety and Correctional Services
- Ministry of Economic Development, Job Creation and Trade
- Ministry of Education (Ontario)
- Ontario Heritage Trust
- Infrastructure Ontario
- Ontario Growth Secretariat
- Conservation Ontario
- Ministry of Agriculture, Food, and Rural Affairs
- Ontario Provincial Police
- Ontario Power Generation
- Hydro One

Municipal Government, Conservation Authorities and Related Municipal Bodies

- York Region
- City of Vaughan
- Conservation Authorities
- Toronto and Region Conservation Authority
- York Region District School Board
- York Catholic District School Board
- Conseil Scolaire Viamonde
- Conseil Scolaire de District Catholique Centre-Sud
- Greater Toronto Airports Authority
- York Region Paramedic Services
- York Regional Police
- City of Vaughan Fire and Rescue Services

5.1.3.2 Potentially Impacted Property Owners List

The Potentially Impacted Property Owners List was developed and updated based on the preliminary reference concept design to facilitate discussions with property owners who have the potential to be impacted by the construction of the grade separations. See Section 5.1.2 for an overview of consultation actions.

5.2 Regulatory Agency and Municipal Consultation

5.2.1 Meetings with Agencies and Municipalities

Technical Advisory Committee Meetings (TACs) were held with the City of Vaughan and York Region. The dates and locations of the TAC meetings are listed in Table 5.2-1. The presentation materials and meeting minutes can be found in Appendix H-4.

Table 5.2-1: Details of Technical Advisory Committee Meetings

Date	Location	Attendees
22-May-19	Aurora Town Hall 100 John West Way, Aurora, Ontario	Town of Aurora Town of Newmarket City of Vaughan
24-May-19	90 Bales East East Gwillimbury	York Region York Region Transit
31-Oct-19	Vaughan City Hall 2141 Major MacKenzie Dr W, Maple, ON L6A 1T1	City of Vaughan
16-Dec-19	Vaughan City Hall 2141 Major MacKenzie Dr W, Maple, ON L6A 1T1	City of Vaughan
20-Jan- 20	Aurora Town Hall 100 John West Way, Aurora, Ontario	Town of Aurora City of Vaughan York Region
22-Jun- 20	Online Session	Town of Aurora City of Vaughan York Region
08-July-20	Online Session	City of Vaughan
10-Dec-20	Online Session	City of Vaughan

5.2.2 Meetings with Elected Officials

Metrolinx provided briefing materials in advance of the Public Meetings to elected officials via email and offered to hold briefing meetings with elected officials. Table 5.2-2 provides a list of elected officials contacted for briefing.

Table 5.2-2: List of Elected Officials Contacted for Briefing During the Consultation Phase

Contact	Briefing Package Sent
Members of Provincial Parliament within the Legislative Assembly of Ontario	
Stephen Lecce, MPP, King-Vaughan	December 20, 2019
	February 4, 2020
	November 24, 2020
City of Vaughan	
Marilyn Iafrate, Councillor	February 4, 2020
	February 4, 2020
	November 24, 2020
Sandra Yeung Racco, Councillor	February 4, 2020
	February 4, 2020
	November 24, 2020

5.2.3 Conservation Authority Correspondence

5.2.3.1 Toronto and Region Conservation Authority

Metrolinx has had a number of meetings with Toronto and Region Conservation Authority (TRCA) regarding the Go Expansion Program. The McNaughton Road Grade Separation is located within their jurisdiction but not within the regulated area. A meeting to present the Project to TRCA was held July 25, 2019, after initial consultation it was determined that no further input from TRCA would be required for this project. Presentation materials and meeting minutes can be found in Appendix H-5.

5.2.4 Utilities Correspondence

Relevant utility companies were contacted early in the project and a meeting was held to introduce the Network Wide Structures Project and request information on November 15, 2019. A project specific meeting was held with Enbridge November 24, 2020. Meetings were held April 9, 2021 and April 28, 2021 to discuss stormwater issues with the City of Vaughan. Correspondence with Utilities can be found in Appendix H-7.

5.2.5 Regulatory Agency Correspondence

On January 30, 2020 Metrolinx sent an email to the Ministry of the Environment, Conservation and Parks (MECP) advising of the upcoming Public Meeting meetings to be held in February 2020. This correspondence also indicated that Metrolinx would be seeking feedback on the network-wide technical studies including:

- Noise and Vibration;
- Air Quality;
- Vegetation Management Program;
- Heritage and Archaeology; and
- Natural Environment.

Table 5.2-3 provides a list of all meetings held with Regulatory Agencies.

Table 5.2-3: Locations, Dates, Times and Attendance at Regulatory Agency Meetings

Project	Date	Meeting Type	Location
GO Expansion Program	September 16, 2019	MTO Information Meeting	159 Sir William Hearst Avenue. 5th Floor Boardroom, Toronto, ON
GO Expansion Program	March 12, 2020	MECP Status Update	MECP Downtown Office, 135 St. Clair West, Toronto Ontario
GO Expansion Program	April 1, 2020	Species at Risk Strategy	Online Session

5.2.6 Government Review Team Correspondence

In preparation of this Addendum members of a Government Review Team (GRT) were provided with draft documents for review and comment. Table 5.2-4 summarizes all contact points with Agencies relating to this review. Table 5.2-5 summarizes all contact points with Municipalities relating to this review. See Appendix H-4 and H-5 for correspondence records for Municipalities and Agencies respectively.

Table 5.2-4: Agency GRT Review of Draft EPR Addendum Document

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
GOExpansion TPAP account	Conservation Halton	7-Sep-20	Draft EPR Addendum Comments	<p>Good morning</p> <p>As the Barrie Rail Corridor is outside of Conservation Halton's jurisdiction, we will not be providing comments on the materials.</p> <p>Regards,</p> <p>Emma DeFields, MES, MCIP, RPP Environmental Planner</p>	15/Oct/20	<p>Dear Emma,</p> <p>Thank you for your response.</p> <p>We are writing to confirm receipt, and to let you know that your message has been shared with the project team.</p> <p>Sincerely,</p> <p>Metrolinx GO Expansion Project Team</p>
GOExpansion TPAP account	<p>Hydro One Networks Inc.</p> <p>Laura Dimand, B.Sc., GIT Environmental Planner, Environmental Programs and Approvals</p>	23-Sep-20	Administrative - Draft EPR Addendum	<p>Good morning,</p> <p>Following up on the request below - please provide the documents over WeTransfer. In addition please ensure you include the Secondary Land Use email (SecondaryLandUse@HydroOne.com) on all TPAP related requests, as per the GRT list, please also include the following contacts:</p> <p>ACEVES Elsy Elsy.Aceves@HydroOne.com PETTIGREW Renee Renee.Pettigrew@HydroOne.com And myself, Laura.Dimand@HydroOne.com</p> <p>Thank you,</p> <p>Laura Dimand, B.Sc., GIT Environmental Planner, Environmental Programs and Approvals</p>	29-Sep-20	<p>Hi Laura,</p> <p>Our sincere apologies for this delayed response – there were a few delays regarding monitoring of this inbox and your emails were not received until now.</p> <p>Thank you for letting us know about your Dropbox limitations. Please find a Wetransfer link with all the documents pertaining to Wave 1 and 2 circulations.</p> <p>We can confirm that the following emails are included in our GRT circulation list and were sent the previous emails: SecondaryLandUse@HydroOne.com Elsy.Aceves@HydroOne.com Renee.Pettigrew@HydroOne.com Laura.Dimand@HydroOne.com</p> <p>Can you please confirm whether Hydro One intends to provide comments on these reports? We are hoping to receive stakeholder feedback by October 9th if possible.</p> <p>We look forward to your continued involvement in the Network-Wide Structures project.</p> <p>Sincerely,</p> <p>Metrolinx GO Expansion Project Team</p>
GOExpansion TPAP account	Ministry of Heritage, Sport Tourism and Culture	25-Sep-20	Draft EPR Addendum Comments	<p>To: Go Expansion Team,</p> <p>On behalf of the Sport Recreation and Community Programs Division of the Ministry of Heritage, Sport Tourism and Culture Industries, I have reviewed the</p>	8-Oct-20	<p>Hi Bob,</p> <p>Thank you for your review of the draft EPR Addendum documents and your response.</p>

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
	Industries Sport Recreation and Community Programs Division Bob Freeman Senior Program Advisor			documents relating to the Barrie Rail Corridor Expansion Project, Transit Project Assessment Process (TPAP) the EP Report Addendum. Please note that I have no comments or concerns. Thank you for the opportunity to review the documents best of luck with the project. Regards, Bob Freeman Senior Program Advisor		We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Ministry of Economic Development, Job Creation and Trade Michael Helfinger Senior Policy Advisor Corporate Policy Unit	28-Sep-20	Draft EPR Addendum Comments	Dear Team members: Thank you for sharing these reports with the Ministry of Economic Development, Job Creation and Trade. Given that these reports deal with highly technical matters that are beyond our expertise, we do not have any comments beyond acknowledging that the proposed grade separations will further contribute to realizing our stakeholders' priority of improved workforce productivity through reduced travel times, as discussed in our comments on the broader New Track and Facilities project earlier this year. Best regards, Michael Helfinger Senior Policy Advisor Corporate Policy Uni	8-Oct-20	Dear Michael, Thank you for your response. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Ministry of Heritage, Sport, Tourism and Culture Industries Heritage, Tourism and Culture Division Programs and Services Branch Heritage Planning Unit	29-Sep-20	Draft EPR Addendum Comments	Good afternoon, Please find attached our comments and covering letter on the Barrie Rail Corridor TPAP EPR Addendum. Dan Minkin Heritage Planner	30/Sep/20	Good morning Dan, I am confirming receipt of the Ministry's cover letter and comments on the draft Environmental Protection Report Addendum for the McNaughton Road and Wellington Street East Grade Separations. MX will review the attachments and be in touch if any clarifications are required, while developing responses and updating our draft EPR Addendum Report. We look forward to receiving the Ministry's comments on the 'wave 2' reports issued on September 11.

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
	Dan Minkin Heritage Planner					Thank you and have a great day. Meghan
GOExpansion TPAP account	Ministry of Municipal Affairs and Housing Michael Collens, MES Senior Associate (A) Growth Management Program Policy, Planning, Analysis & Delivery Branch Ontario Growth Secretariat	29-Sep-20	Draft EPR Addendum Comments	Hi, On behalf of OGS, we do not have comments on the Wave 1 documents. Thanks, Michael Collens, MES Senior Associate (A)	8-Oct-20	Hi Michael, Thank you for your review of the Wave 1 of the draft EPR Addendum documents and your response. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Conservation Ontario Leslie Rich, MES, RPP Policy and Planning Liaison	29-Sep-20	Draft EPR Addendum Comments	Good afternoon, Please send the material to the conservation authority affected by the proposal (Lake Simcoe Region Conservation Authority). Conservation Ontario will not be providing comments. Thank you, Leslie Rich, MES, RPP Policy and Planning Liaison Conservation Ontario	8-Oct-20	Hi Leslie, Thank you for your response. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	TRCA Shirin Varzgani, MIP, MES (Pl.) Planner Infrastructure Planning and Permits Development and Engineering Services	29-Sep-20	Draft EPR Addendum Comments	Hi I will sending out the TRCA sign off letter regarding the above-noted project soon. Should you wish to followup or have questions, please do not hesitate to contact me. Thank you and regards, Shirin Varzgani, MIP, MES (Pl.) Planner	8-Oct-20	Hi Shirin, Thank you for your response. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				Infrastructure Planning and Permits Development and Engineering Services		
GOExpansion TPAP account	Parks Canada Omar McDadi Field Unit Supervisor, Rouge National Park	29-Sep-20	Draft EPR Addendum Comments	We have no comment to provide. Thank you.	8-Oct-20	Hi Omar, Thank you for your response. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	MECP	30-Sep-20	Draft EPR Addendum Comments	Hey Lindsay, Thanks for the email reminder I was waiting until end of day yesterday to see if any more comments came in before forwarding them over I received comments from our noise/vibration reviewer as well as air quality from our Regional technical reviewer- see attached In terms of the TPAP addendum main document, I will try to get you comments from me (if any) by next week's deadline of October 7, 2020. Thanks, Adam Sanzo Project Officer Environmental Assessment Branch Ministry of the Environment, Conservation and Parks	30-Sep-20	Morning Adam, Thank you for the submission of the comments on noise/vibration and air quality. MX will review the attachments and be in touch if any clarifications are required, while developing responses and updating our draft EPR Addendum Report. Also, we look forward to receiving your comments on the TPAP Addendum. Let me know if you have any questions. Thanks again, and have a great day! Lindsay
GOExpansion TPAP account	TRCA Shirin Varzgani, MIP, MES (Pl.) Planner Infrastructure Planning and Permits Development and Engineering Services	1-Oct-20	Draft EPR Addendum Comments	Hi Please see the attached letter. Should you have any questions, please do not hesitate to contact me. Thank you and regards, Shirin Varzgani, MIP, MES (Pl.) Planner	15/Oct/20	Hi Shirin, Thank you for your letter. We are writing to confirm receipt, and to acknowledge that given these projects are outside of TRCA's jurisdiction, there are no comments at this time. This has been shared with the project team. Please note that the project team has contacted the LSRCA for their comments on these projects as well. Sincerely,

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				Infrastructure Planning and Permits Development and Engineering Services		Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Ontario Power Generation Tammy Wong Sr. Env. Specialist Corporate EH&S	5-Oct-20	Draft EPR Addendum Comments	Hello, Thank you for your letter below. This project is not near OPG operations or facilities. Please feel free to discontinue notification on this project, Regards, Tammy Wong Sr. Env. Specialist Corporate EH&S Ontario Power Generation	8-Oct-20	Hi Tammy, Thank you for your response. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Ministry of Energy, Northern Development and Mines Dawn-Ann Metsaranta, P.Geo. Senior Strategic Initiatives Lead	5-Oct-20	Administrative - Draft EPR Addendum	Good Afternoon, Thank you for sharing this information with me. I am in a different position and these emails can now be directed to: Mary.Perry@ontario.ca Clare.Pineau@ontario.ca My name can be removed. Thank you. Dawn-Ann Metsaranta, P.Geo. Senior Strategic Initiatives Lead PH:705-465-1757	8-Oct-20	Hi Dawn-Ann, Thank you for letting us know. Mary and Claire were also provided the materials and we have removed you from our contact list for future correspondences. Regards, Diana Radulescu The GO Expansion Team
GOExpansion TPAP account	Ministry of Heritage, Sport, Tourism and Culture Industries Heritage, Tourism and Culture Division Programs and Services Branch Heritage Planning Unit Karla Barboza MCIP, RPP, CAHP (A) Team Lead, Heritage	5-Oct-20	Draft EPR Addendum Comments	Hi Metrolinx GO Expansion Project Team, Thanks for the reminder! We have received the materials and will provide comments on Wave 2 documents (more specifically the Cultural Heritage Reports) by October 9. Thanks again, Karla	7/Oct/20	Hi Karla, Thank you for your interest in the Project and for your upcoming comments on the Draft EPR Addendum. We are writing to confirm receipt, and to let you know that your message has been shared with the project team for response. Sincerely, Metrolinx GO Expansion Project Team

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
GOExpansion TPAP account	Conservation Halton Emma DeFields, MES, MCIP, RPP Environmental Planner	5-Oct-20	Draft EPR Addendum Comments	Good afternoon It is my understanding that the material circulated on September 11th pertained only to the Barrie Rail Corridor, which is outside of Conservation Halton’s jurisdiction. As such, we will not be providing on this aspect of the project. Thank you Emma DeFields	7/Oct/20	Hi Emma, Thank you for your interest in the Project and for your comments on the Draft EPR Addendum. We are writing to confirm receipt, and to let you know that your message has been shared with the project team for response. Sincerely, Metrolinx GO Expansion Project Team
	Ontario Growth Secretariat Ministry of Municipal Affairs and Housing Michael Collens, MES Senior Associate (A) Growth Management Program Policy, Planning, Analysis & Delivery Branch	8-Oct-20	Draft EPR Addendum Comments	Hi Metrolinx GO Expansion Project Team, The Ontario Growth Secretariat would like to extend our thanks for the opportunity to provide comments. We would like to acknowledge that, overall, the reports do a good job of recognizing the role and weight of A Place to Grow: Growth Plan for the Greater Golden Horseshoe (“A Place to Grow”) as a lens to review the projects, including by supporting the relevant policy framework on priority transit corridors, major transit station area density targets, walkability, and user access and safety. We would point out that, as provided under the Places to Grow Act, 2005 that, generally, the policies of A Place to Grow take precedent over the Provincial Policy Statement. We would also point out (with the understanding that this is a matter of timing rather than omission) the reports need to reference A Place to Grow, as amended, including forecasts to 2051 (rather than 2041). Amendment 1 to A Place to Grow was issued by the Minister of Municipal Affairs and Housing and took effect on August 28, 2020. We would emphasize that, as the projects continue, they support easy, safe, comfortable and convenient access to active transportation and promote connections between local and regional transit in accordance with policies 2.2.1.4 d) i., 2.2.4.8 and 3.2.3.4.	15/Oct/20 18/Dec/20	Good morning Michael, Thank you for your review of the draft EPR Addendum documents and your comments. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team Good morning Michael, Thank you for your interest in the Network-Wide Structures Project and for your comments on the Draft EPR Addendum and technical appendices. The project team has reviewed your comments and would like to share the attached responses. Your comments and feedback have been taken into consideration, and edits applied where applicable, for the next iteration of the EPR Addendum documentation. We anticipate issuance of the revised files with our Notice of EPR Addendum in early 2021. If you have further questions or comments about the project or the GO Expansion program in general, please do not hesitate to contact us at this email. Sincerely,

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				<p>Should you have any questions, feel free to contact me.</p> <p>Sincerely,</p> <p>Michael Collens, MES Senior Associate (A) Growth Management Program Policy, Planning, Analysis & Delivery Branch Ontario Growth Secretariat Ministry of Municipal Affairs and Housing</p>		Network-Wide Structures Project Team
GOExpansion TPAP account	Ministry of Heritage, Sport, Tourism and Culture Industries Heritage, Tourism and Culture Division Programs and Services Branch Heritage Planning Unit Dan Minkin Heritage Planner	9-Oct-20	Draft EPR Addendum Comments	<p>Good evening, Please find attached our comments on the draft Appendices A1-1 and A2-1, the Cultural Heritage Reports: Existing Conditions and Preliminary Impact Assessment for the two grade separations. These constitute our comments on the Wave 2 documents.</p> <p>Dan Minkin Heritage Planner Ministry of Heritage, Sport, Tourism and Culture Industries Heritage, Tourism and Culture Division Programs and Services Branch Heritage Planning Unit</p>	13/Oct/20	<p>Good morning Dan,</p> <p>Thank you for your review of the Wave 2 draft EPR Addendum documents and your comments.</p> <p>We are writing to confirm receipt, and to let you know that your message has been shared with the project team.</p> <p>Sincerely,</p> <p>Metrolinx GO Expansion Project Team</p>
					18/Dec/20	<p>Good morning Dan,</p> <p>Thank you for MHSTCI's interest in the Network-Wide Structures Project and for your comments on the Draft EPR Addendum and technical appendices. The project team has reviewed your comments and would like to share the attached responses.</p> <p>Your comments and feedback have been taken into consideration, and edits applied where applicable, for the next iteration of the EPR Addendum documentation. We anticipate issuance of the revised files with our Notice of EPR Addendum in early 2021.</p> <p>If you have further questions or comments about the project or the GO Expansion program in general, please do not hesitate to contact us at this email.</p> <p>Sincerely,</p>

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
						The Network-Wide Structures Project Team
					9/Apr/21	<p>Morning Dan,</p> <p>Thank you for providing the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) comments on the draft EPR Addendum for the McNaughton Road Grade Separation (part of the Network Wide Structures Project). The project team has reviewed and incorporated your comments into the EPR addendum and technical reports as per the correspondence below.</p> <p>Since your review, Metrolinx has also been working to revise the Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment based on the previous feedback received. The revised report can be found at the link below for your review, and the responses to your previous comments are attached.</p> <p>Download Link:</p> <p>Should you wish to provide any further feedback on the revised Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment, please submit your feedback in writing by May 10, 2021 via the attached comment response form.</p> <p>Metrolinx intends to issue the McNaughton Road Grade Separation EPR Addendum and Appendices on June 3rd, 2021. This will commence the 30-day public stakeholder review period, followed by the 35-day Minister's review period. It should be noted, prior to the last PIC (November 2020), the Wellington Grade Separation has been separated, and will be completed via a separate EPR Addendum.</p> <p>Feel free to reach out with any questions or concerns.</p> <p>Kindest Regards, Lindsay</p>
		5-May-21	Draft EPR Addendum Comments	Good afternoon Lindsay, Please find our comments attached.	N/A	Acknowledges comments have been addressed and MHSTCI has no further concerns with this Cultural Heritage Report

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				Dan Minkin Heritage Planner		
Lindsay.Prihoda@metrolinx .com	MECP	9-Oct-20	Draft EPR Addendum Comments	<p>Hi Lindsay</p> <p>Sorry for the late response</p> <p>Im just working through sending my comment memo and waiting on supervisor approval before I send it. Sorry I missed the Oct 7 deadline you mentioned in your submission.</p> <p>I don't have many comments at all from a formatting and context perspective- so the memo wont have many comments from my end</p> <p>I also haven't received any additional comments from any technical reviewers on the second round of technical reports. If I do receive anything within the next few days ill send them over.</p> <p>I hope to have my memo over to you by end of day or Monday at the latest- sorry again</p> <p>Let me know if you have any other questions.</p> <p>Regards,</p> <p>Adam Sanzo Project Officer Environmental Assessment Branch Ministry of the Environment, Conservation and Parks</p>		<p>Morning Adam,</p> <p>Thanks for the update!</p> <p>No problem send the comment memo next week, whenever it is approved!</p> <p>Let me know if you have any question.</p> <p>Happy Thanksgiving! ☐</p> <p>Lindsay</p>
GOExpansion TPAP account	Central Lake Ontario Conservation Agency	14-Oct-20	Draft EPR Addendum Comments	<p>Hello, as this project is outside the limits of CLOCA's jurisdiction we will have no comments on the TPAP – if you could please remove any CLOCA e-mail addresses from the distribution list for this specific project that would be appreciated. Thank you,</p> <p>Eric Cameron Infrastructure Planner / Enforcement Officer</p>	15/Oct/20	<p>Good morning Eric,</p> <p>Thank you for your comments. We are writing to confirm receipt, and to let you know that your message has been shared with the project team.</p> <p>Sincerely,</p> <p>Metrolinx GO Expansion Project Team</p>
GOExpansion TPAP account	MECP	15-Oct-20	Draft EPR Addendum Comments	<p>Hey Lindsay</p> <p>Please see attached comment memo</p>	15/Oct/20	<p>Afternoon Adam.</p> <p>I am confirming receipt of the Ministry's cover letter and comments on the draft Environmental Protection Report</p>

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				<p>As mentioned in the memo- we cannot complete our full review of the Draft EPR until all of the sections are complete. I will need to review the final draft once the document is completed.</p> <p>Regards,</p> <p>Adam Sanzo Project Officer Environmental Assessment Branch Ministry of the Environment, Conservation and Parks</p>		<p>Addendum for the McNaughton Road and Wellington Street East Grade Separations.</p> <p>MX will review the attachment and be in touch if any clarifications are required, while developing responses and updating our draft EPR Addendum Report.</p> <p>Furthermore, MX will ensure a full copy of the final Draft EPR Addendum is provided to you for review/comment.</p> <p>Thank you and have a great day! J</p> <p>Lindsay</p>
					9/Apr/21	<p>Morning Adam,</p> <p>Thank you for providing your comments on the draft EPR Addendum for the Network Wide Structures Project. The project team has reviewed and incorporated your comments into the EPR addendum and technical reports. It should be noted the comment log tracker is attached above with Metrolinx's responses to all comments provided during the last submission of the Addendum in Fall 2020.</p> <p>As you are aware, the previous version of the draft EPR Addendum combined both McNaughton Road and Wellington Street East Grade Separations. As was communicated before PIC 2 in November 2020, the Wellington Grade Separation has been removed from this EPR Addendum. While we expect to move forward with the grade separation, Metrolinx requires further work with the Town of Aurora, York Region and affected property owners to find a design solution that will fit the needs of the Town, Region, property owners and GO Expansion. The Wellington Street East grade separation will be studied in a separate proposed Wellington Addendum. Further meetings will be arranged between Metrolinx, the Town of Aurora and York Region to discuss the Wellington Grade Separation in more detail.</p> <p>Metrolinx is currently seeking your comments on the EPR Addendum for the McNaughton Road Grade Separation.</p>

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
						The following documents have been provided for your information and review: i. Comment/Response form as attached to this e-mail – please use this form to provide your comments on the EPR Addendum document ii. The EPR Addendum and appendices can be accessed via the Browser link below.
		4-May-21	Draft EPR Addendum Comments – Air Quality	<p>Hi Adam,</p> <p>I screened through Appendix E1-Construction Air Quality Report “Construction Related Air Quality Effects Assessment – McNaughton Road Grade Separation” dated March 8, 2021 to determine if the previous comments submitted by TSS were addressed. Based on my review, the previous comment no. 2 and 6 of the attached document has not been addressed.</p> <p>Central Region TSS offers the same comments to the proponent to update the tables and figures that refer to the PM2.5 AAQC of 30 ug/m3 to 27ug/m3 since the PM2.5 AAQC is based on the Canadian Ambient Air Quality Standards (CAAQs). No additional comments are offered at this time.</p> <p>Thanks, Marinha Antunes</p>	N/A	Metrolinx Response: The Air Quality report was prepared prior to the MECP revision of the standards for the AAQC Table value in November 2020 to match the Canadian Ambient Air Quality Standards (CAAQS). A footnote has been added to Table 4.1 to acknowledge the change in criterion value, and to advise that the application of this revised value to the modeling would have a negligible effect on the potential degree of impact to sensitive receptors.
		23-Apr-21	Draft EPR Addendum Comments – Noise and Vibration	<p>Hello Adam:</p> <p>I have reviewed the two latest Noise and Vibration reports for the Metrolinx Barrie Line, one for Construction Noise and the other for Operational Noise and Vibration.</p> <p>The latest Operational Noise and Vibration report for the Metrolinx Barrie line is dated 14 Jan 2021 therefore is the same as the report issued in January, therefore we have no further comments.</p> <p>Please provide a link to the Construction Noise and Vibration report for the Barrie Line issued in January.</p>	N/A	Closed

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				<p>I have attached an email to Cindy Batista containing our last set of comments dated 2021-1-26.</p> <p>Thanks</p> <p>Kevin Smith, P.Eng. Senior Noise Engineer</p>		
		5-May-21	Draft EPR Addendum	<p>Hey Lindsay,</p> <p>Sorry it appears I never responded to this email asking about comments.</p> <p>With regards to specific comments from me, I don't have anything in addition to my original comments that were previously addressed.</p> <p>I have been in contact with our Regional Technical Support Section and although the reviewer who commented back in October/November is no longer working for that unit, her colleague Marinha has taken over and has provided me an update on the comments from the region- please see attached.</p> <p>In addition, our noise reviewers have also followed up and also indicate that there is no additional comments and the previous comments that were addressed are sufficient. Also see attached</p> <p>I am following the status of your conversations with Dan Minkin at MHSTCI, but if you can also forward any recent correspondence or sign off by the conservation authority as we would need to reference that in our decision documentation for the Minister. Please forward any documentation or correspondence to Cindy Batista as today will be my official last day and a project officer has not yet been assigned to formally take over this file from me. I will periodically check my emails to make sure that there is nothing received that is not forwarded to both Cindy and Metrolinx</p> <p>Let me know if you have any other questions</p> <p>Thanks,</p>	5-May-21	<p>Thank you Adam! Please find attached a letter from Toronto and Region Conservation Authority (TRCA) dated October 1, 2020 for MECP's records. Let me know if there is any other information you require.</p> <p>Cindy – If you could please confirm in Adam's absence who the new Project Officer will be for this project it would be greatly appreciated. If there is no new Project Officer, would Metrolinx be able to use your name and contact information on the Notice for the McNaughton Addendum? As Metrolinx will be required to update the Notice with new contact information by the end of this week to be able to meet our timelines for the newspapers and printing company to ensure the advertisements/bulk mailers of the notice are available for June 3.</p> <p>Kindest Regards, Lindsay</p>

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
				Adam Sanzo Project Officer		
GOExpansion TPAP account	TRCA	19-Oct-20	Administrative - Draft EPR Addendum Comments	Hello, Please take me off the email list for this project. Thank you Zack Carlan Planner Infrastructure Planning and Permits Development and Engineering Services	19/Oct/20	Hi Zack, Thank you for your email – we will remove you from the mailing list. Best wishes, The GO Expansion Team
GOExpansion TPAP account	Central Lake Ontario Conservation Agency	19-Oct-20	Administrative - Draft EPR Addendum Comments	Good morning, we will have no comments with respect to this study as it is located outside of our watershed boundary. Eric Cameron Infrastructure Planner / Enforcement Officer	19/Oct/20	Hi Eric, Thank you for your email, your response has been noted. Best wishes, The GO Expansion Team
GOExpansion TPAP account	MHSTCI	20-Oct-20	Draft EPR Addendum Comments	Good morning Metrolinx GO Expansion Project Team, Thanks for the email. MHSTCI has already provided comments on these drafts – see attachments. Let us know if you have any questions about our comments. Regards, Karla	20-Oct-20	Hi Karla, Thank you for your email. We have recorded MHSTCI's comments and are working to address them. We appreciate your review of the draft EPR Addendum documents. Best wishes, The GO Expansion Team
GOExpansion TPAP account	MNRF	20-Oct-20	Draft EPR Addendum Comments	Good Afternoon, MNRF has reviewed the Natural Environment Technical Reports Appendix G1-1 and G1-2 and has no comments. Please let me know if you have any questions. Sincerely, Maria Jawaid (she/her) District Planner Aurora District Ministry of Natural Resources and Forestry	20-Oct-20	Good evening Maria, Thank you for your review and acknowledgment. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team

Source	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Final Response	Final Response Summary
GOExpansion TPAP account	Hydro One	19-Oct-20	Draft EPR Addendum Comments	Please see the attached for Hydro One's Response.	20-Oct-20	Good evening, Thank you for your review and letter. We are writing to confirm receipt and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Halton Regional Police	21-Oct-20	Draft EPR Addendum Comments	Good morning: We have no comments with regard to the Draft EPR Addendum. Thanks, Keith Moore Coordinator Planning, Policy and Emergency Management Strategic Management Office Halton Regional Police Service	21-Oct-20	Good evening Keith, Thank you for your review and acknowledgment. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team
GOExpansion TPAP account	Canadian Transportation Agency	21-Oct-20	Draft EPR Addendum Comments	Hello Metrolinx GO Expansion Project Team, The Canadian Transportation Agency has received the Draft EPR Addendum and has no comments to provide. Thank you, Stephen Karasmanis Junior Infrastructure Engineer, Determinations and Compliance Branch Canadian Transportation Agency / Government of Canada	21-Oct-20	Good evening Stephen, Thank you for your review and acknowledgment. We are writing to confirm receipt, and to let you know that your message has been shared with the project team. Sincerely, Metrolinx GO Expansion Project Team

Table 5.2-5: Municipal GRT Review of Draft EPR Addendum Document

Source	Municipality	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Response	Response Summary
Mia.Donaldson @metrolinx.com	York Region	Vi Bui	29-Sep-20	Draft EPR Addendum Comments	<p>Hi Mia and Metrolinx Team,</p> <p>As requested, please find the attached York Region comments for your information and consideration. If you have any further questions, please contact the undersigned to discuss.</p> <p>Thank you</p> <p>Vi T. Bui, P.Eng Program Manager, Transportation Development Planning, Transportation & Infrastructure Planning Branch, Transportation Services Department</p>	29-Sep-20	<p>Hi Vi,</p> <p>Thank you for providing York Region’s comments on the draft EPR and technical reports.</p> <p>We will review and respond accordingly.</p> <p>Thanks!</p> <p>Mia</p>
Mia.Donaldson @metrolinx.com	Town of Aurora	Sabir Hussain	29-Sep-20		<p>Hi Mia,</p> <p>Attached please find the Town of Aurora comments.</p> <p>Regards.</p> <p>Sabir Hussain, P.Eng. Municipal Engineer, Engineering Division, Planning and Development Services</p>	<div>29-Sep-20</div> <div>18-Dec-20</div>	<div><p>Hi Sabir,</p><p>Thank you for providing the Town of Aurora’s comments. We will review and respond accordingly.</p><p>Thanks! Mia</p></div> <div><p>Dear Sabir,</p><p>Thank you for the Town of Aurora’s interest in the Network-Wide Structures Project and for your comments on the Draft EPR Addendum and technical appendices. The project team has reviewed your Wave 1 and 2 comments and would like to share the attached responses.</p><p>Your comments and feedback have been taken into consideration, and edits applied where applicable, for the next iteration of the EPR Addendum documentation. We anticipate issuance of the revised files with our Notice of EPR Addendum in early 2021.</p><p>If you have further questions or comments about the project or the GO Expansion program in general, please do not hesitate to</p></div>

Source	Municipality	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Response	Response Summary
							contact us at this email. Sincerely, Network-Wide Structures Project Team
Mia.Donaldson@metrolinx.com	York Region	Vi Bui	15-Oct-20	Draft EPR Addendum Comments	Hi Mia, what is the different between first and second wave? I believe our comments sent you on September 29 covered both. Please confirm. Thanks Vi	15-Oct-20	Hi Vi, Thanks for reaching out to confirm. The breakdown for the first and second waves is as follows: • Wave 1 o Draft EPR o Construction Air Quality Report (one each for Wellington and McNaughton) o Construction Noise and Vibration report (one each for Wellington and McNaughton) o Traffic Impact Assessment (one each for Wellington and McNaughton – these were the same versions already circulated to the TAC for review/comment) • Wave 2 o Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (one each for Wellington and McNaughton) o Socio Economic and Land Use Characteristics report (one each for Wellington and McNaughton) o Natural Environment Report (one each for Wellington and McNaughton) Based on the attached provided Sept. 29th, comments appear to be related to: general comments regarding the grade separations, utilities, traffic, natural environment/vegetation. Due to the general nature of the feedback, these could cover all comments associated with the EPR and technical reports circulated during Wave 1 and 2. However if the Region could please confirm if any further comments specific to the technical reports are anticipated, that would be much appreciated.

Source	Municipality	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Response	Response Summary
							<p>In addition, we had noted below that the Stage 1 Archaeological Assessment reports, Tree Inventory reports, and Consultation Appendix are still underway/under regulatory agency review. These will be included in the next iteration, circulated with the Notice of EPR Addenda.</p> <p>Feel free to give me a call to discuss further.</p> <p>Thanks! J</p> <p>Mia</p>
Mia.Donaldson@metrolinx.com	York Region	Vi Bui	15-Oct-20	Draft EPR Addendum Comments	<p>Thanks Mia for this information.</p> <p>We have to recirculate some of these materials internally for review. Is it possible that we can get an extension to October 30? I think our comments provided to date cover most of it, however, we just want to be sure that all departments in the Region should review and provide comments, if any.</p> <p>Thanks</p> <p>Vi</p>	15-Oct-20	<p>Hi Vi,</p> <p>Thanks for confirming, we are okay with granting this extension to ensure all YR comments are included J</p> <p>Best,</p> <p>Mia</p>
Mia.Donaldson@metrolinx.com	City of Vaughan	Winnie Lai	15-Oct-20	Draft EPR Addendum Comments	<p>Good afternoon Mia,</p> <p>Last time we emailed each other, you mentioned setting up meeting with the City to go over the comments and concerns we have on the McNaughton Grade Separation North side Multi-use Path before the next TAC meeting.</p> <p>We haven't heard back from you and are wondering if that's still happening?</p> <p>We have reiterated our comments regarding the North side Multi-use Path on our commenting matrix for the EPR.</p> <p>Thanks.</p>	15-Oct-20	<p>Hi Winnie,</p> <p>Thanks for reaching out, and appreciate the City flagging these comments on the Draft EPR and Waves 1 & 2 of the technical reporting.</p> <p>We are currently working to respond to the City's additional inquiries (letter dated Sept. 10th) submitted in response to the supplemental information provided by MX. Once we have compiled all of the relevant information, we hope to schedule another focused meeting to review and discuss next steps.</p> <p>We have not yet scheduled the next joint TAC</p>

Source	Municipality	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Response	Response Summary
					Regards, Winnie Lai P.Eng. Transportation Project Manager Infrastructure Planning and Corporate Asset Management		meeting (with CoV, ToA and YR), but hope to schedule something in November, in advance of our next round of PICs. Please let us know if you have any questions/concerns on this approach. Thanks! Mia
						18-Dec-20	Dear Winnie, Thank you for the City of Vaughan’s interest in the Network-Wide Structures Project and for your comments on the Draft EPR Addendum and technical appendices. The project team has reviewed your comments and would like to share the attached responses. Your comments and feedback have been taken into consideration, and edits applied where applicable, for the next iteration of the EPR Addendum documentation. We anticipate issuance of the revised files with our Notice of EPR Addendum in early 2021. If you have further questions or comments about the project or the GO Expansion program in general, please do not hesitate to contact us at this email. Sincerely, Network-Wide Structures Project Team
						9-Apr-21	Hi Winnie, Thank you for providing the City of Vaughan’s comments on the draft EPR Addendum for the McNaughton Rd. Grade Separation (part of the Network Wide Structures Project). The project team has reviewed and incorporated your comments into the EPR addendum and

Source	Municipality	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Response	Response Summary
							<p>technical reports as per the correspondence below.</p> <p>Since your review, Metrolinx has been working to revise the Traffic Impact Assessment based on the previous feedback received. The revised report can be found at the link below for your review, and the responses to your previous comments are attached.</p> <p>Download link:</p> <p>Should you wish to provide any further feedback on the revised Traffic Impact Assessment, please submit your feedback in writing by May 10, 2021 via the attached comment response form.</p> <p>Metrolinx intends to issue the McNaughton Rd. Grade Separation EPR Addendum and Appendices on June 3rd, 2021. This will commence the 30-day public stakeholder review period, followed by the 35-day Minister's review period. As noted prior to the last PIC, the Wellington Grade Separation has been separated, and will be completed via a separate EPR Addendum.</p> <p>Feel free to reach out with any questions or concerns.</p> <p>Thanks!</p> <p>Mia</p>
		Winnie Lai	10-May-21	Draft EPR Addendum Comments	<p>Good morning Mia,</p> <p>Our development engineering and traffic staff have no further comment on the TIA provided in April.</p> <p>Thank you.</p> <p>Regards,</p>		

Source	Municipality	Comment Received From	Date Comment Received	Issue Category	Comment/Feedback	Date of Response	Response Summary
					Winnie Lai P.Eng. Transportation Project Manager Infrastructure Planning and Corporate Asset Management		
Mia.Donaldson @metrolinx.com	York Region	Vi Bui	30-Oct-20	Draft EPR Addendum Comments	Hi Mia and Metrolinx Team, As promised, please the attached York Region’s comments for your consideration. These comments are included for both Wave 1 and Wave 2. If you have any further questions, please contact me to discuss. Have a great weekend! Vi T. Bui, P.Eng Program Manager, Transportation Development Planning, Transportation & Infrastructure Planning Branch, Transportation Services Department	30-Oct-20	Hi Vi, Thanks for providing the Region’s comments! We will review and respond accordingly. Have a great weekend as well! J Best, Mia
						18-Dec-20	Dear Vi, Thank you for York Region’s interest in the Network-Wide Structures Project and for your comments on the Draft EPR Addendum and technical appendices. The project team has reviewed your comments and would like to share the attached responses. Your comments and feedback have been taken into consideration, and edits applied where applicable, for the next iteration of the EPR Addendum documentation. We anticipate issuance of the revised files with our Notice of EPR Addendum in early 2021. If you have further questions or comments about the project or the GO Expansion program in general, please do not hesitate to contact us at this email. Sincerely, Network-Wide Structures Project Team

5.3 Notices

Public notices were published prior to all Public Meetings, as well as prior to the issuance of the Notice of EPR Addendum. Table 5.3-1 summarizes all notices circulated as part of this Addendum. Copies of these notices can be found in Appendix H-2.

Table 5.3-1: Summary of Notices

Type	Medium	Language	Location	Date
Notice of Public Meeting No. 1	Newspaper	English	Toronto Star	February 1, 2020 February 8, 2020
		French	Mississauga Le Metropolitain	January 30, 2020 February 6, 2020
			Toronto L'Express	January 31, 2020 February 7, 2020
	Radio	English	680 AM News	February 3, 2020 – February 16, 2020
			97.3 FM Boom	February 3, 2020 – February 16, 2020
	Bulk Mailer	English	Letters to residents within 100 m of each project footprint	January 29, 2020
Notice of Public Meeting No. 2 for the full GO Expansion Program (Network-Wide Structures did not present updated information)	Digital	English and French	E-mails to stakeholders, elected officials, and review agency contacts	August 18, 2020 – August 24, 2020
	Digital	English and French	Social Media (Facebook, Instagram, Twitter, LinkedIn)	August 18, 2020 – August 24, 2020
	Digital	English and French	Metrolinx Regional Newsletter	August 21, 2020 – August 24, 2020
Notice of Public Meeting No. 3	Digital	English and French	E-mails to stakeholders, elected officials, and review agency contacts	November 27, 2020 – December 1, 2020
	Digital	English and French	Social Media (Facebook, Instagram, Twitter, LinkedIn)	November 27, 2020 and December 1, 2020

Type	Medium	Language	Location	Date
	Digital	English and French	Metrolinx Regional Newsletter	December 1, 2020 – December 7, 2020
Notice of EPR Addendum	Newspaper	English	Vaughan Citizen (Print and Digital)	June 3, 2021 June 10, 2021
		French	Toronto L'Express (Print and Digital)	June 4, 2021 June 11, 2021
	Digital	English and French	Social Media (Twitter)	June 4, 2021
		English and French	Metrolinx Regional Newsletter	June 3, 2021
	Bulk Mailer	English	Letters to residents within 100 m of each project footprint	June 3, 2021

5.3.1 French Translations

As a government agency operating under the principles of the *French Language Services Act (FLSA)*, Metrolinx is committed to providing services in French in designated areas of the province. The agency works to ensure the availability and accessibility of quality services in French system wide. Following these principles, Metrolinx provided a French translation of the newspaper ads, mailer, and website for the project. Property owner, GRT and notifications to Indigenous Nations were not translated.

5.4 Public Consultation

5.4.1 Public Meeting #1

As part of the consultation process, open house style Public Meetings were held in late February 2020. A total of 10 Public Meetings were held on separate dates and in locations close to the communities that will be affected by the GO Expansion Project. Poster boards presenting an overview of Significant Addenda to the *Barrie Rail Corridor Expansion Project Transit Project Assessment Process Environmental Project Report* (Hatch, 2017a) and the proposed grade separation at McNaughton Road were displayed. Metrolinx and its consultants attended the Public Meetings to answer questions from the public and key stakeholders. A journey map explaining how to glean information from the poster boards was made available to attendees. Information sheets about the GO Expansion Program and the Projects were made available.

Comment forms were provided to attendees for feedback and an email address for electronic feedback was also provided. Copies of all Public Meeting materials and scans of the comment forms received can be found in Appendix H-3.

The Notice of Public Meeting including the dates, locations, times, and the Project purpose was posted in local newspapers and the Metrolinx website. Radio advertisement were aired and information about the PUBLIC Meetings was posted at GO stations. The Notice of Public Meeting was delivered by email (unless otherwise requested) to all stakeholders on the Master Contact List. Property owners potentially affected by the Projects received a notice as well as a tailored impacted property notification. A copy of the notice of Public Meeting can be found in Appendix H-2.

5.4.1.1 McNaughton Road Grade Separation

A Public Meeting for the McNaughton Road Grade Separation was held on February 29, 2020 from 11:30am – 1:30pm. The Public Meeting was held at Vaughan City Hall located at 2141 Major MacKenzie Drive West in Maple, Ontario. Approximately thirty (30) people attended the Public Meeting and twenty-seven (27) people signed in. Regional Councillor Gino Rosati and Councilor Marilyn Lafrate were in attendance. Representatives of the York Major Holdings Council attended and made inquiries about the King City Station. Representatives of the Canada-China Business Council also attended.

Overall attendees appeared to be positive about the project. Attendees expressed support for electrification and general transit improvements to increase service, get people out of cars, and replace diesel trains. Many attendees were seeking more information about construction timelines and potential impacts to businesses, parking, and traffic. All Public Meeting materials and comment forms are available in Appendix H-3. Comments received through the comment sheets have been transcribed in Table 5.4-1.

Overview

Table 5.4-1: Summary of Questions, Comments and Concerns from Stakeholders at Public Meeting #1, City of Vaughan

Entry #	What do you see as the benefits of GO Expansion (i.e. what do you like)?	What do you see as the challenges of GO Expansion (i.e. what are you worried about)?	What ideas or suggestions would you like to see Metrolinx consider as we move forward with GO Expansion?	Other Comments
1	Faster trip time to city centre (Toronto). Reduced noise (live -- 1 km from RofW). More frequent service makes competitive with cars. The number of station looks good. (The Kirby station should not be built. As it is too close to King City)	Unnecessary delay in approval process	The prepaid parking spaces are often vacant at the Aurora station. There could be a premium for those who do not use the space regularly or method of indicating that the space may be used when the driver of the space is not using it.	An Uber style bus picking up system could facilitate travel to station. Must be prepared and refundable. The use of bicycles to travel to station is limited. Perhaps some commuters would use a bicycle if there was less risk of bicycle theft. Perhaps cycle sharing could be an option for a small sum of people

Other Projects

Entry #	Do you have any other comments, concerns, and/or advice for Metrolinx about what's happening now?
1	King City GO bus service stopped on King Road from the 400 in route to King City GO station? (Lost) New station at Kirby potentially called "Hope"?

Tell Us How We Did

Entry #	Did you find this meeting helpful in learning more about GO Expansion? What was the most helpful part? How could we improve moving forward?	How did you hear about the Open House? Check all that apply
1	Good mix of graphics and text information (seeing full sized maps of rail corridor, etc.). Staff were friendly and approachable.	Newspaper ad, word of mouth, and project website.
2	Very informative, thank you. Answered any questions (parking at the site station). Station (future) at Kirby Side road, call it "Hope" as that's place-name, please communicate the Kirby families to the grand opening! Can 2 tracks fit at Keele and King Road - answered	Newspaper ad, word of mouth, and project website.
3	I believe that thought should be given to Metrolinx acquiring the rail line that runs to Orangeville through Brampton. This would mean Caledon could also have GO rail service without utilizing the CP rail line through Bolton, which I understand CP is not in favour of. This would also increase frequency through Brampton that needs it.	Project website
4	Excellent presentation information with ample personal attention to questions!	Metrolinx Notice
5	Graphics. Knowledgeable stuff	Metrolinx Notice
6	Yes, it was very helpful. Yes, it was very helpful. It was particularly helpful to have Metrolinx staff available to answer questions that arose after explaining the presented material and which were directly dealt with the material.	Newspaper ad, word of mouth, and project website.

5.4.2 Public Meeting #2 (Virtual)

Due to the Covid-19 pandemic Public Meeting #2 for the GO Expansion Program was held virtually. Notification of the Public Meeting was emailed to individuals and groups on the Project contact list between August 18, 2020 and August 24, 2020. Metrolinx also posted information regarding the event on their social media platforms.

Though Metrolinx did not actively seek detailed comments on the Network-Wide Structures Project – it forms part of the GO Expansion program and opportunities to ask general questions were provided. No new information was presented for the Network-Wide Structures Project

In addition to the GO Expansion program landing page, each GO Expansion program project had a dedicated webpage with TPAP and addendum-specific information. Participants in the online consultation had an opportunity to provide general feedback about GO Expansion, as well as project- specific feedback.

Visitors to the Public Meeting materials on the Metrolinx Engage website were encouraged to complete comment forms (electronically through email to YorkRegion@metrolinx.com) as well as ask questions on the Metrolinx Engage website itself. It was requested that comments be returned by September 1, 2020.

5.4.2.1 McNaughton Road Grade Separation

No new information about the Network Wide Structures Project was presented at this meeting, but links to the information from Public Meeting #1 were made available. Public meeting materials were made available on Metrolinx Engage on August 18, 2020.

Although new material was not presented, feedback was solicited and the ability to ask Metrolinx a question was kept live for the duration of Public Meeting #2, resulting in the following feedback:

- A few participants suggested that Metrolinx consider a road underpass at McNaughton Road because an overpass visually impacts the local neighbourhood. Participants also raised concerns about active transportation, traffic impacts, and potential impacts to surrounding properties.
- Participants would like to know about any potential construction timelines for the grade separations proposed at McNaughton Road.

5.4.3 Public Meeting #3 (Virtual)

Metrolinx hosted the third round of public consultation for the GO Expansion Program Online from November 27 to December 11, 2020. In the third round of consultation, Metrolinx presented available draft environmental and technical study findings and provided updates on outstanding study results for the three (3) TPAPs (New Track and Facilities TPAP, Scarborough Junction Grade Separation TPAP, Stouffville Rail Corridor Grade Separations TPAP) and the two (2) addenda projects (the Addendum to the GO Rail Network Electrification TPAP 2017, and the Network Wide Structures Project).

Figure 5.4-1 shows the landing page as it appeared during the Public Meeting timeframe.

5.4.3.1 McNaughton Road Grade Separation

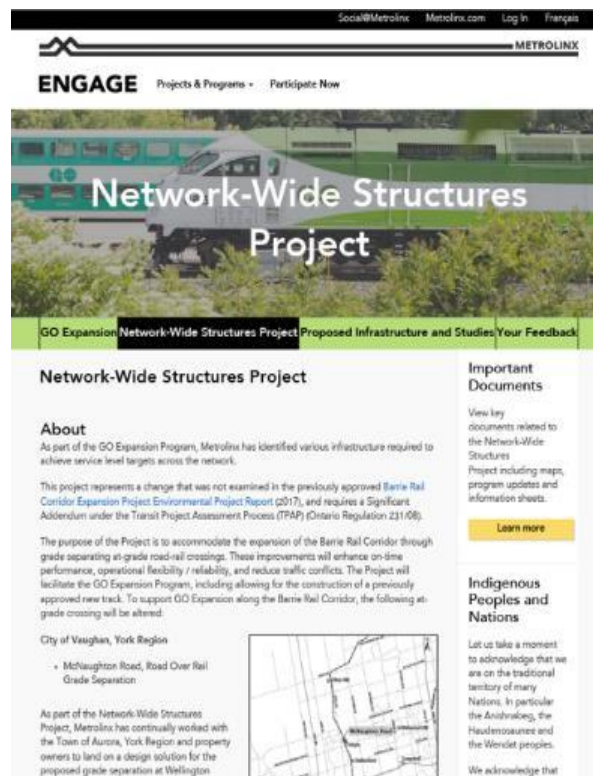
Feedback about the Network-Wide Structures Project includes:

- Concerns about visual impacts, active transportation, traffic impacts, and potential impacts to surrounding properties of a road over rail grade separation at McNaughton Road; and
- Questions about potential construction timelines for the grade separations proposed at McNaughton Road.

The Network-Wide Structures Project website is organized by the following pages: *About*, *Proposed Infrastructure & Studies*, *Your Feedback*, and *Important Documents*. The new information being presented in Round Three include:

- A revised design of the proposed McNaughton Road Road-Over-Rail grade separation in the City of Vaughan; and
- Highlights from the preliminary impact assessments and proposed mitigation measures for the McNaughton Road (City of Vaughan) grade separation.

Figure 5.4-1: Network Wide Structures Landing Page during Public Meeting #3



Proposed Infrastructure & Studies Page

Content on this page described the purpose and benefits of grade separations and the proposed McNaughton Road grade separation.

Within the Proposed Grade Separation section, there were two subsections with more information about the environmental studies (Studies, Impacts, and Mitigation) and commitments to future work (following the TPAP and moving into detailed design and construction).

In the Studies, Impacts, and Mitigation subsection, links to the following draft environmental studies were provided:

- Construction Air Quality;
- Construction Noise and Vibration;
- Cultural Heritage (archaeological resources, built heritage resources and cultural heritage landscapes); natural environment (including species-at-risk); and
- Socio-economic and Land Use.

A link was also provided for the System-wide Operational Noise, Vibration, and Air Quality Studies being undertaken as part of the GO Rail Network Electrification Addendum project.

Important Documents Page

The *Important Documents* page included a combination of documents presented during Rounds One, Two, and Three. The document titles indicate the round of consultation for which the documents were prepared. The following is a list of project-specific important documents presented in Round Three:

Network-Wide Structures Project Proposed Infrastructure & Studies:

- GO Expansion Program Proposed Infrastructure Network-Wide Structures Panel Set (Round One);
- GO Expansion Program Studies Panel Set (Round One);
- McNaughton Road Overpass Roll Plans (Round Three); and
- McNaughton Road Panels (Round Three).

Environmental and Technical Studies (all reports are in “Draft” and subject to agency review):

- Construction Air Quality;
- Construction Noise and Vibration;
- Cultural Heritage;
- Natural Environment;
- Socio-Economic and Land Use;

- Roll Plans; and
- McNaughton Road Overpass.

Project Specific Feedback

- **Concerns about visual impacts of the proposed McNaughton Road road-over-rail grade separation.** Some participants noted that they prefer a road-under-rail grade separation to minimize potential visual impacts; similar to the road underpasses at Major Mackenzie Drive West and Rutherford Road. There were also a few suggestions to provide a detailed 3D view of the proposed road-over-rail grade separation at McNaughton Road from the south perspective looking north so that community members can get a sense of how it looks and its potential visual impacts. Participants also noted that the bridge should be enhanced to respect the Maple area;
- **Concerns about traffic impacts.** Some participants expressed concerns about eliminating the north-end exit at Maple GO Station, as it may force traffic to feed into Hill Street and Eagle Rock Way. Participants were interested in learning about Metrolinx's future plans to improve traffic flow from these streets to Major Mackenzie Drive West and McNaughton Road;
- **Concerns about sidewalk or multi-use path.** Some participants suggested that Metrolinx consider providing wider sidewalks or a multi-use path on the north side of the proposed McNaughton Road grade separation. Metrolinx is currently proposing a multi-use path on the south side of the grade separation; and
- **Noise impacts at the proposed McNaughton Road grade separation.** A few participants suggested that Metrolinx consider providing a glass noise wall at the proposed McNaughton Road grade separation to mitigate potential noise impact from cars and trucks.

Table 5.4-2: Key Issues Raised During Public Meeting #3

What We Heard	What We're Doing About It
Concerns about visual impacts of the proposed McNaughton Rd road overpass	<p>The road over rail grade separation at McNaughton Road was selected as the proposed design as it provides fewer technical challenges as compared to the rail over road option.</p> <p>In 2019 Metrolinx conducted an options analysis to determine the appropriate type of grade separation (overpass or underpass). We analyzed impacts to stakeholders, local setting, public realm, property impacts, utilities, engineering constraints, environment, operations and maintenance, capital costs and benefits. The results of this analysis concluded that a road overpass is the most feasible option considering all of these factors. By contrast, a road underpass presents a number of challenges. For one thing, the existing road profile places the rail crossing at a lower elevation than the road. Given the proximity to Maple GO, the track cannot be raised, and as a result, to accommodate an underpass the section of McNaughton Road from Keele Street to Rodineau</p>

What We Heard	What We're Doing About It
	<p>Road/Troon Avenue would need to be significantly lowered through excavation. This would result in the disposal of large quantities of earth, and with substantial lengths of retaining walls required to limit property impacts. In addition, another significant factor inhibiting the road underpass is that the groundwater levels in the area could require extensive excavation and dewatering in order to make it safe to build the underpass. This would result in additional infrastructure requirements, including pumping stations and associated utilities that would ultimately lead to additional property impacts within the local community. Lastly, underpass option would also require a track diversion, resulting in additional property impacts.</p> <p>Metrolinx will work with the City of Vaughan regarding the aesthetic and landscaped embankment proposed on the south side, to soften visual impact.</p>
Concerns about traffic impacts to Hill Street and Eagle Rock Way	<p>The proposed grade separation at McNaughton Road is proposed to remove vehicular exit onto McNaughton Road.</p> <p>The impact this would have on local traffic is something that Metrolinx has undertaken as part of the McNaughton Road Grade Separation Significant Environmental Project Report (EPR) Addenda. As part of construction staging, the right-out only exit from the GO parking lot onto McNaughton Road is to be permanently closed, while alternative access via Eagle Rock Way on the south side is to be maintained. Ultimately, the proposed grade separation will not result in changes to the traffic volumes along McNaughton Road, nor will the proposed grade separation increase the capacity of the roadway as it will maintain two lanes in each direction similar to the existing configuration. As we move closer to construction, Traffic Control and Management Plan(s) will be developed in collaboration with the City of Vaughan to maintain reasonable access through work zones, to the extent possible. As part to those plans, mitigation measures such as signal-timing optimization may be implemented through coordination between Metrolinx and the municipality as part of the detailed design and implementation phases.</p> <p>For more information on traffic impact mitigation, please visit the infrastructure panels.</p>
Consider providing wider sidewalks or a multi-use path (MUP) on the	<p>Metrolinx is proposing two multi-use pathways as part of the proposed grade separation: one on the south side of the elevated McNaughton roadway and one at grade on south side of McNaughton Road to provide connection to the Maple GO Station Platform.</p>

What We Heard	What We're Doing About It
north side of the proposed McNaughton Road grade separation	Metrolinx is currently in discussion with municipal stakeholders on a proposed option for a pedestrian connection on the north side of McNaughton Road. As we are in the early design stage for this project, the community will be kept informed of any developments. Find out more by viewing the infrastructure panels.
Consider providing a glass noise wall on the proposed McNaughton Road grade separation to mitigate noise impact from cars and trucks	Metrolinx has conducted studies to ensure that the impacts of the proposed grade separation are mitigated, including a Traffic Impact Assessment (TIA). As a result of the TIA, the road will maintain two lanes in each direction, similar to the existing configuration. Therefore, there will be no changes to traffic volume and no measurable change in vehicle noise from traffic along McNaughton Road as a result of the grade separation. However, this is a preliminary study and there are some impacts that require further analysis as the design is further fleshed out. A detailed analysis of the changes in noise levels resulting from the grade separation will be completed at the detailed design. For more information on operational noise and vibration mitigation measures, including proposed noise walls along the corridor, please visit the noise and vibration and air quality page.

5.5 Engagement with Indigenous Nations

In 2018, Metrolinx made a commitment to building positive and meaningful relationships with Indigenous Peoples, in alignment with its strategic objectives. The Indigenous Relations Office (IRO), established in 2019, has a mandate to build and grow relationships with Indigenous Nations, organizations, businesses and customer-residents. In 2020, the IRO became the sole point of contact for Indigenous Nations and supports the Environmental Programs & Assessment department to coordinate engagement and communication related to all Metrolinx projects.

During the Pre-Planning phase of the Project, Metrolinx engaged with potentially affected Indigenous Nations to understand their level of interest in the Project and determine the community's consultation needs and/or requirements.

O. Reg. 231/08 stipulates that at a minimum, Proponents must make reasonable and good faith efforts to engage with Indigenous Nations by:

- Giving each Indigenous Nation on the contact list a copy of the Notice of Commencement;
- Ensuring Indigenous Nations are provided with an opportunity to participate in the consultation process;
- Following up with telephone calls to ensure that Indigenous Nations are aware of the Project;

- Provide Indigenous Nations with notification of consultation events such as Public Meetings;
- Provide relevant Project documentation and other material when requested;
- Discussing potential negative impacts on the Project on any constitutionally protected Aboriginal and Treaty rights that may be identified and measures to mitigate these negative impacts; and
- Ensuring consultation is flexible enough to meet the specific and unique needs of the Indigenous Nations.

Sixteen Indigenous Nations were contacted separately regarding the Project and provided with a Project Introduction letter on February 6, 2020. The letter provided a notice of Public Meeting #1 and the opportunity to tailor the engagement approach to meet their requests. During Pre-Planning activities, the focus of Metrolinx engagement was on establishing with these communities, introducing the Project, identifying and confirming their potential interest in the Project, ascertaining an understanding of their potentially affected Aboriginal and Treaty rights, and obtaining information about community-specific consultation preferences. Correspondence with Indigenous Nations can be found in Appendix H-6.

Metrolinx recognizes the importance of fulsome engagement with Indigenous Nations throughout the TPAP Addendum process. Through consultation with MECP the following Nations were identified as potentially having an interest in the Network Wide Structures Project:

- Six Nations of the Grand River
- Kawartha Nishnawbe First Nation
- Mississaugas of the Credit First Nation
- Williams Treaties First Nations
 - Alderville First Nation
 - Beausoleil First Nation
 - Chippewas of Georgina Island
 - Chippewas of Rama First Nation
 - Curve Lake First Nation
 - Hiawatha First Nation
 - Mississaugas of Scugog Island First Nation
- Métis Nation of Ontario
- Huron-Wendat Nation
- Haudenosaunee Confederacy Chiefs Council (HCCC)
- Wahta Mohawks

- Moose Deer Point First Nation
- Mohawks of the Bay of Quinte

Table 5.5-1 lists the meetings that were held with Indigenous Nations, records of these meetings can be found in Appendix H-6.

Table 5.5-1: Meeting with Indigenous Nations

Date	Participants	Purpose
13-Nov-19	Huron-Wendat Nation	Overview of Metrolinx Projects 2019
14-Apr-20	Curve Lake First Nation	Metrolinx GO Expansion (OnCorridor) Program
15-July-20	Curve Lake First Nation	Upcoming Metrolinx Projects

5.6 Notice of EPR Addendum

In accordance with Section 15 of O.Reg.231/08, a Notice of Environmental Project Report (EPR) Addendum was first issued on June 3, 2021. The Notice provides the public, Indigenous Nations and organizations, review agencies, and other stakeholders, with information about the project, next steps, how to access the EPR Addendum (posted online to the Metrolinx Engage website) and how comments may be formally submitted. The Notice of EPR Addendum was published on separate dates in the following newspapers with circulation within the project study area, see table 5.6-1. As well it was shared through Metrolinx Twitter and posted on the project web site.

The Notice of EPR Addendum includes the following information (a copy of the Notice can be found in Appendix H-2):

- Information as to where and how members of the public may examine the Environmental Project Report Addendum and obtain copies;
- A description of the objection process, which includes:
 - A statement that there are circumstances which the Minister has authority to require further consideration for the project, or impose conditions on it, if he or she is of the opinion that:
 - The transit project may have a negative impact on a matter of provincial importance that relates to the natural environment or has a cultural heritage value or interest; or
 - The transit project may have a negative impact on a constitutionally protected Aboriginal or treaty right.
- A statement that, before exercising the authority referred to above, the Minister is required to consider any written objections to the transit project that he or she receives within 30 days after the Notice of Environmental Project Report Addendum is first published.

Table 5.6-1: Notice of EPR Addendum Newspaper Circulation

Publication	Dates Published
Vaughan Citizen (includes online version)	Thursday June 3, 2021 Thursday June 10, 2021
Toronto L'Express (includes online version)	Friday June 4, 2021 Friday June 11, 2021

The Notice of EPR Addendum was shared on the project website, Twitter, and provided to the following stakeholders:

- Director, Environmental Assessment Services, Environmental Assessment Branch, Ministry of the Environment, Conservation and Parks (MECP);
- Director, Central Region MECP;
- The following Indigenous Peoples and Nations:
 - Six Nations of the Grand River
 - Kawartha Nishnawbe First Nation
 - Mississaugas of the Credit First Nation
 - Williams Treaties First Nations
 - Alderville First Nation
 - Beausoleil First Nation
 - Chippewas of Georgina Island
 - Chippewas of Rama First Nation
 - Curve Lake First Nation
 - Hiawatha First Nation
 - Mississaugas of Scugog Island First Nation
 - Métis Nation of Ontario
 - Huron-Wendat Nation
 - Haudenosaunee Confederacy Chiefs Council (HCCC)
 - Wahta Mohawks
 - Moose Deer Point First Nation
 - Mohawks of the Bay of Quinte
- Every individual who provided a written request for a copy;
- All households, apartments, farms and businesses within a minimum of 100m of the project footprint (total of 28,428 notices);

- All members of the public on the York Region mailing list;
- All members of the public who signed up at the Public Meetings or via email request; and,
- All members of the public/review agencies/municipalities/elected officials/other stakeholders with email/mailling addresses included on the Project Contact List.

5.7 30-Day Public Review

Upon issuing the Notice of EPR Addendum, the Final EPR and Supporting Appendices (environmental and technical studies) were made available for 30 days for review by the Public (including property owners), Indigenous Nations and organizations, Review Agencies, and other Stakeholders. Specifically, the EPR Addendum was posted online to the Metrolinx project website as follows:

<https://www.metrolinxengage.com/en/engagement-initiatives/network-wide-structures-project>

During the 30-day review period, if there are concerns pertaining to the potential for a negative impact on a matter of Provincial importance according to O. Reg. 231/08 that relates to the natural environment or has cultural value or interest, or on a constitutionally protected Aboriginal or treaty right, an objection may be submitted to the Minister of Environment, Conservation and Parks (the Minister) as outlined in the Notice of Completion.

The 30-day public review period will commence on June 4, 2021 and will conclude on July 4, 2021.

5.8 35-Day Minister Review

Following the 30-day public review period, the Minister has 35-days within which to issue one of three notices:

- Proceed with the Project in accordance with the EPR Addendum; or
- Proceed with the Project in accordance with the EPR Addendum subject to conditions; or
- Require the proponent to conduct further work and submit a revised EPR Addendum.

The 35-day review period will commence on July 5, 2021 and will conclude on August 9, 2021.

6.0 Permit and Approvals, and Commitments and Future Work

6.1 Permits and Approvals

All required permits and approvals shall be obtained, and the project completed in accordance with applicable law. The required permits and approvals shall be obtained prior to the associated work commencing.

In addition to the commitments to future work, permits and approvals obtained for the proposed works, as outlined in the following sections, may identify the need for additional mitigation. Any additional mitigation measures required in connection with a permit or approval shall be implemented.

6.1.1 Federal

At the time of publication, no federal permits and approvals have been confirmed as required for the project. As the project proceeds the federal permit and approval requirements shall continue to be assessed and addressed.

6.1.2 Provincial

At the time of publication, the following provincial permits and approvals have been identified as required for the project:

- Species At Risk Ontario (SARO)/Endangered Species Act (ESA) Permits - Under O.Reg. 230/08 and O.Reg. 242/08;
- Wildlife Scientific Collector's Authorization - Under Fish and Wildlife Conservation Act, S.O. 1997, c. 41;
- Environmental Activity and Sector Registry (EASR) for Water Taking - Under O. Reg. 63/16 Registrations, Part II.2; and
- Hazardous Waste Information Network Registry (HWIN) - Under O. Reg. 347.

As the project proceeds the provincial permit and approval requirements shall continue to be assessed and addressed.

6.1.3 Municipal

A range of municipal permits and approvals may be required for the project, particularly as pertaining to municipally owned lands and infrastructure. All required permits and approvals shall be obtained. However, Metrolinx as a Crown Agency of the Province of Ontario is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals.

Water, sanitary, and storm servicing will be reviewed during detailed design. The City of Vaughan, Town of Aurora, and the Municipality of York will be consulted during detailed design to address impacts to municipal water, sanitary, and storm sewer systems.

Communication and engagement with the Municipality of York, City of Vaughan and Town of Aurora shall continue as design and construction planning progress to address municipal interests.

6.1.4 Conservation Authorities

Metrolinx as a Crown Agency of the Province of Ontario is not subject to the Conservation Authorities Act. However, Metrolinx will engage with the Conservation Authority to incorporate their requirements as a best practice, where practical, and may obtain associated permits and approvals or engage in a Voluntary Project Review where applicable.

Communication and engagement with the Lake Simcoe Region Conservation Authority (LSRCA) will continue as design and construction planning progress to address matters related to their mandate.

6.1.5 Utilities

Coordination with the Municipality of York, City of Vaughan and Town of Aurora and the relevant private utilities will be undertaken as design and construction planning progress. Potential utility conflicts shall be reviewed in consultation with each utility company as part of detailed design. Implementation and construction obligations shall be undertaken pursuant to the crossing agreements with each of the utility companies as required. Any associated permits and approvals will be obtained prior to construction.

6.2 Summary of Permits and Approvals

A preliminary list of the potentially applicable permitting and approval requirements for the Project are identified in Table 6.2-1. Additional requirements may be identified or confirmed during detailed design, or as ongoing consultation progresses.

Table 6.2-1: Summary of Permits and Approvals

Permits, Licences and Approvals	Regulatory Authority	Legislation & Regulation
Federal		
Species at Risk	Environment and Climate Change Canada (ECCC)	Species At Risk Act S.C. 2002, c. 29
Provincial		
Notice of Transit Project Assessment Process (TPAP) Addendum – Significant	MECP	O. Reg 231/08 Environmental Assessment Act (Transit Projects & Metrolinx Undertakings)
Species at Risk Ontario (SARO)/Endangered Species Act (ESA) Permits	MECP	O. Reg. 230/08 and O. Reg 242/08 Endangered Species Act Section 17

Permits, Licences and Approvals	Regulatory Authority	Legislation & Regulation
Depending on the dewatering volumes: Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR)	MECP	Ontario Water Resources Act (O. Reg 128/03) Section 34 O. Reg 63/16 - Registrations Under Part II.2 of the Act – Water Taking
Hazardous Waste Information Network Registry (HWIN)	MECP	Environmental Protection Act (O. Reg. 347)
Compliance with Fish and Wildlife Conservation Act	MNRF	Fish and Wildlife Conservation Act S.O. 1997, c. 41 (December 10, 2019), Section 7
Wildlife Scientific Collector's Authorization	MNRF	Fish and Wildlife Conservation Act S.O. 1997, c. 41 (December 10, 2019) Section 60
Cultural Heritage Assessment Sign off	MHSTCI	Ontario Heritage Act
Stage 1 & 2 Archaeology Assessment Sign off	MHSTCI	Ontario Heritage Act
Municipal		
Tree Injury/Removal Permit and Tree Protection By-Law	Municipality	City of Vaughan By-Law 052-2018
Municipal Discharge Permit (Sewer By-Laws)	Municipality	City of Vaughan Sewer Use By-Law 087-2016 Regional Municipality of York, Discharge of Sewage, Storm Water and Land Drainage By-Law 2011-56 <i>Note: As Vaughan's sewer system is connected to York Region's sewer system a temporary discharge permit from the Region of York will be required.</i>

Permits, Licences and Approvals	Regulatory Authority	Legislation & Regulation
Noise By-Law Exemption	Municipality	City of Vaughan Noise Control By-Law 062-2018

6.3 Commitments and Future Work

Metrolinx is committed to implementing the mitigation and monitoring activities outlined in Table 4.13-1. Commitments for future work to be undertaken during subsequent phases of the Project are outlined in Table 6.3-1.

Table 6.3-1: Summary of Commitments and Future Work

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Implement mitigation measures and monitoring requirements as outlined in Table 4.13-1. Develop/undertake design and management plans in accordance with the specific mitigation measures identified through the effects assessment and listed in Table 4.13-1. The Study Area is within the City of Vaughan and York Region. Metrolinx will continue to communicate and engage with the municipalities throughout detailed design and prior to construction to confirm that any municipal input is addressed prior to commencement of construction activities. This will include continued discussion to refine and confirm the design requirements for the Project to align with City/Region standards, ongoing engagement related to implementation schedules and mitigation of impacts to City/Region resources, and negotiation related to cost sharing agreements for the construction, operation and maintenance of new infrastructure. A range of municipal permits and approvals may be required for the project, particularly as pertaining to municipally owned lands and infrastructure. All required permits and approvals shall be obtained. However, Metrolinx as a Crown Agency of the Province of Ontario is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals. Water, sanitary, and storm servicing will be reviewed during detailed design. The municipality will be consulted during detailed design to address impacts to municipal water, sanitary, and storm sewer systems.

Discipline	Commitments
	<ul style="list-style-type: none"> Communication and engagement with the municipality shall continue as design and construction planning progress to address municipal interests. Final detailed monitoring plans will be developed as part of detailed design activities.
Hydrogeology	<ul style="list-style-type: none"> Appropriate dewatering strategies will be determined and confirmed in coordination with the relevant municipality. Permits and approvals related to dewatering, if required, will be determined during detailed design.
Cultural Heritage	<ul style="list-style-type: none"> No demolition, construction, grading or other soil disturbances will occur within the Project Footprint prior to the MHSTCI (Archaeological Program Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.
Archaeology	<ul style="list-style-type: none"> Based on the findings of Stage 1 AA, a Stage 2 AA has been recommended for areas identified as having archaeological potential and is being undertaken by a licensed archaeologist. When complete the Stage 2 AA will be submitted to MHSTCI for review. Metrolinx and/or Proponent will confirm that any AA reports submitted to MHSTCI for review have been entered into the Ontario Public Register of Archaeological Reports prior to commencing any ground disturbing activities.
Traffic and Transportation	<ul style="list-style-type: none"> Municipal paramedic services will be given an opportunity to review emergency response plans and access/egress points to construction sites. Detailed staging plans involving changes to the roads on which YRT buses operate will be submitted for approval by YRT prior to implementation. Changes to bus stops, temporary or permanent will be submitted for approval by YRT in advance of implementation.
Construction	
General	<ul style="list-style-type: none"> Implement mitigation measures and monitoring activities related to construction as outlined in Table 4.13-1. Develop/undertake design and management plans in accordance with the specific mitigation measures identified through the effects assessment and listed in Table 4.13-1.

Discipline	Commitments
	<ul style="list-style-type: none"> An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring activities (see Section 6.5).
Natural Environment	<ul style="list-style-type: none"> An Erosion and Sediment Control Plan, in accordance with the Greater Golden Horseshoe's Erosion and Sediment Control Guideline for Urban Construction (December 2006), as amended from time to time, will be prepared prior to and implemented during construction to limit sedimentation and pollution of storm sewer infrastructure. The site-specific ESC Plan will be comprehensive such that all measures to eliminate or reduce environmental effects will be identified, and details related to the frequency of monitoring/testing will be included. A Spill Prevention and Response Plan will be developed before work commences.
Hydrogeology	<ul style="list-style-type: none"> If required, permit/approval requirements related to dewatering will be followed.
Socio-Economic and Land Use	<ul style="list-style-type: none"> Surrounding property owners and tenants will be informed of anticipated upcoming construction works.
Air Quality	<ul style="list-style-type: none"> Adherence to the site-specific mitigation and monitoring recommendations identified in the Construction Related Air Quality Effects Assessment Report (Appendix E-1). If the types and quantities of construction equipment evaluated in the Construction Related Air Quality Effects Assessment Report (Appendix E-1) differ substantially from the types and quantities anticipated to be used by the Contractor, the Contractor will be responsible for ensuring equipment meets the emission limits referenced in the report. Greenhouse gas emissions were not included in the construction air quality investigation as a detailed Construction AQMP will address greenhouse gas emissions.
Noise and Vibration	<ul style="list-style-type: none"> If the types and quantities of construction equipment evaluated in the Construction Noise and Vibration Assessment Report (Appendix A6) differ substantially from the types and quantities anticipated to be used by the Contractor, the Contractor will be responsible for ensuring equipment meets the sound level limits referenced in the report.

Discipline	Commitments
Traffic and Transportation	<ul style="list-style-type: none"> Municipal Paramedic Services will be notified of in advance of change of access/egress to existing residences, commercial properties, infrastructure, parks, etc. Construction lane and turning widths will accommodate emergency vehicles. Prior to construction, Metrolinx will discuss the validity of traffic data used to complete the TIA with the City of Vaughan, in comparison with actual traffic volumes at the time of construction. For road detours, at a minimum one lane of traffic will be maintained in each direction. A temporary sidewalk will also be constructed along at least one side of the detour. These facilities will be complying with relevant municipal standards and AODA requirements.
Operations	
General	<ul style="list-style-type: none"> Implement mitigation measures and monitoring activities related to operations as outlined in Table 4.13-1. Develop/undertake design and management plans in accordance with the specific mitigation measures identified through the effects assessment and listed in Table 4.13-1.
Noise and Vibration	<ul style="list-style-type: none"> Stationary noise sources will meet the MECP allowable levels for stationary sources (NPC-300 criteria). If necessary, appropriate noise mitigation will be applied (design of adequate acoustical housing, noise isolation mounts, etc.).

6.4 Summary of Mitigation Measures and Monitoring

Upon completion of the Addendum process Metrolinx will finalize Detailed Design of the proposed McNaughton Road Grade Separation, while seeking the necessary permits and approvals. Consultation will continue through detailed design and construction where required for obtaining permits, informing interested parties of construction updates, and coordinating with municipalities and Indigenous Nations (if required).

The key objectives of monitoring activities are as follows:

- Confirm accuracy of predictions in EPR;
- Facilitate compliance with regulatory standards, and approval requirements;
- Track the status and resolution of EA commitments and requirements;
- Augment EA information if needed;
- Evaluate the effectiveness of mitigation measures; and

- Identify where effects/conditions do not meet regulatory requirements so that contingency measures can be taken.

In advance of commencing construction activities, mitigation measures will be implemented as outlined in Table 4.13-1 and monitoring activities will continue throughout construction activities, and upon completion of proposed grade separations where required. Monitoring commitments are summarized in Table 4.13-1. Detailed monitoring plans will be developed as part of detailed design activities.

6.5 Environmental Mitigation and Monitoring Plan

The Environmental Mitigation and Management Plan (EMMP) will outline environmental protection measures for natural environment and socio-economic features located on or adjacent to the Project site. The EMMP will include both general and site-specific environmental protection measures based on Project-specific requirements, past project experience, current industry best management practices, and consistency with federal and provincial construction mitigation practices. The EMMP will:

- Outline environmental protection measures related to Project activities;
- Provide instructions for carrying out construction activities to minimize environmental effects; and
- Serve as reference information for the environmental inspection staff to support decision making and provide links to more detailed information.

The EMMP will be based on the fieldwork conducted in support of the EPR to provide Project-related environmental mitigation measures and follow-up commitments to be addressed during the detailed engineering design, construction and post-construction reclamation phases.

The EMMP will be developed with the goal of ensuring that construction is completed in compliance with environmental approvals, commitments and obligations. A core component of the EMMP will be engaging an Environmental Monitor, which will provide the following services in implementing the EMMP:

- Conduct a routine monitoring program to confirm that environmental protection measures are conducted as planned;
- Identify and provide direction to remediate any unexpected environmental occurrences (i.e., failure of environmental protection measures, damage to protection measures resulting from unexpected storms);
- Provide expert guidance to Project staff during construction to ensure that the environment is protected according to environmental approvals, commitments and obligations;
- Confirm that any commitments or requirements developed in accordance with regulatory authorities are carried out as planned, and recommend additional protection measures, if required;

- Document environmental protection measures, deficiencies and methods to address environmental deficiencies carried out by Project staff;
- Where required, act as a liaison between Metrolinx and regulatory agencies when issues arise during construction;
- Conduct additional field programs as required (i.e., fish rescue programs); and
- Identify appropriate timing windows (e.g., in-water works, breeding bird season) and clear sites for construction where required.

The EMMP will outline how environmental monitoring staff will address deficiencies with the Contract Administrator and construction contractor so that these issues can be resolved in a timely manner to avoid negative effects to the environment.

The EMMP will also outline procedures for construction monitoring staff to provide direction to the construction contractor for location of environmental protection measures that require site specific considerations, or “field fit”. They will also identify areas that may require additional environmental protection measures not identified on the construction drawings. Any additional environmental mitigation measures will be discussed with Metrolinx staff prior to directing the contractor to install them.

6.6 Public/Stakeholder Engagement

As a commitment to future works, Metrolinx will continue to engage with stakeholders to share information and solicit input about the Project.

7.0 References

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