Heritage Road Layover
Environmental Project Report

Project # IM21405045

Prepared for:

Metrolinx

277 Front Street West, Suite 400, Toronto, Ontario

August 2022

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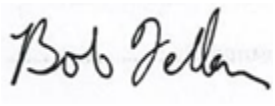
Issued by:	Bob Felker, BES, MCIP, RPP Senior Environmental Planner		Date: August 18, 2022

Executive summary

Project Overview

Metrolinx is completing a Transit Project Assessment Process (TPAP) Environmental Project Report (EPR) 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. By 2055, annual ridership is expected to exceed 200 million, compared to 105 million without GO Expansion (Metrolinx, 2018).

As part of this program, Metrolinx is proposing to expand its facilities along Kitchener Corridor, which runs from Union GO Station to Kitchener GO Station. A new layover, the Heritage Road Layover (the Project), is planned to provide additional storage capacity required to achieve the proposed level of service (two-way all-day service from Union Station to Bramalea GO Station and 15-minute peak service and 30-minute off peak and counterpeak service for stations between Bramalea GO and Mount Pleasant GO stations, with an opportunity to expand to two-way all-day service to Georgetown GO Station), and consolidate the operational needs associated with frequent inner service to optimize operations planning for start and end of service. See Figure ES-1-1.

Project Description

The purpose of the Project is to install a new layover to accommodate increased service and support the need for additional train storage and maintenance associated with the planned growth and service improvements on the Kitchener Corridor that are being planned and implemented as part of Metrolinx's commitment to GO Expansion. The site of the layover facility is proposed on the Halton Subdivision portion of the Kitchener Corridor between Heritage Road (Mile 20.14) and Winston Churchill Boulevard (Mile 21.15) in the City of Brampton, Regional Municipality of Peel (See Figure ES-1-1).

The layover facility will be designed with four (4) tracks with the capacity to accommodate one (1) train consist of two (2) locomotives and 12 coaches or two (2) trains consists of one (1) locomotive and six (6) coaches on each track. A two-lane access road 230 metres (m) in length, with a ROW width of 14.95 m, and a travelled portion 7.0 m wide will be created from Winston Churchill Boulevard to allow personnel to enter the layover facility.

Only the property included in the red outlined in Figure ES-1-1 will be acquired by Metrolinx as part of the proposed Project. No additional property outside of the boundaries will be acquired or controlled (permanently or temporarily to support construction) by Metrolinx.

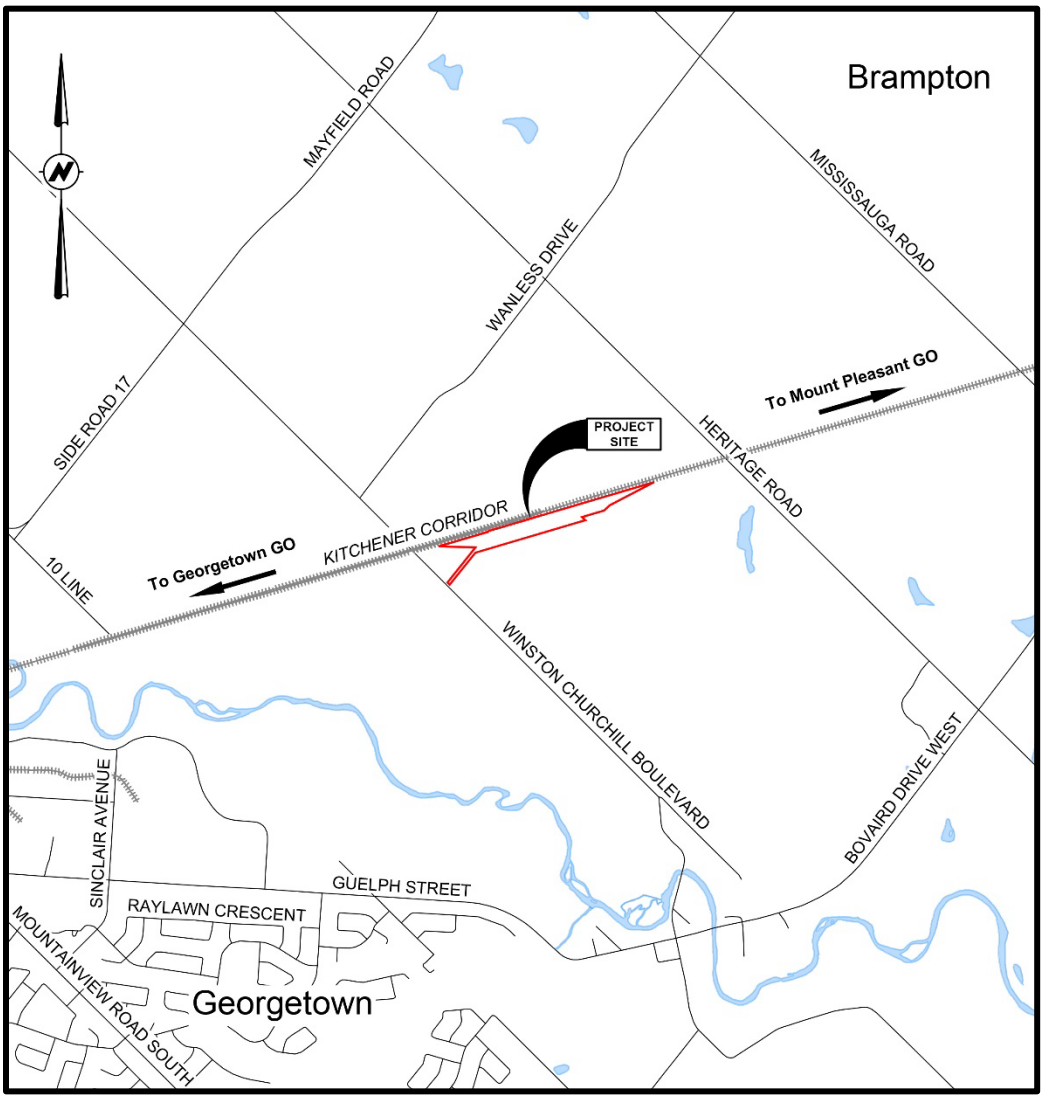


Figure ES-1-1: Location of Project Site

Study Process

This Environmental Project Report (EPR) documents the findings of the TPAP with respect to existing environmental conditions, assessment of potential impacts, mitigation measures and monitoring requirements, stakeholder and public consultation, and commitments to future work. See Figure ES 1-2 for the full TPAP.

Environmental Project Report Structure

This report has been organized into seven sections (Introduction, Project Description, Existing Conditions, Impact Assessment, Climate Change Considerations, 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*.

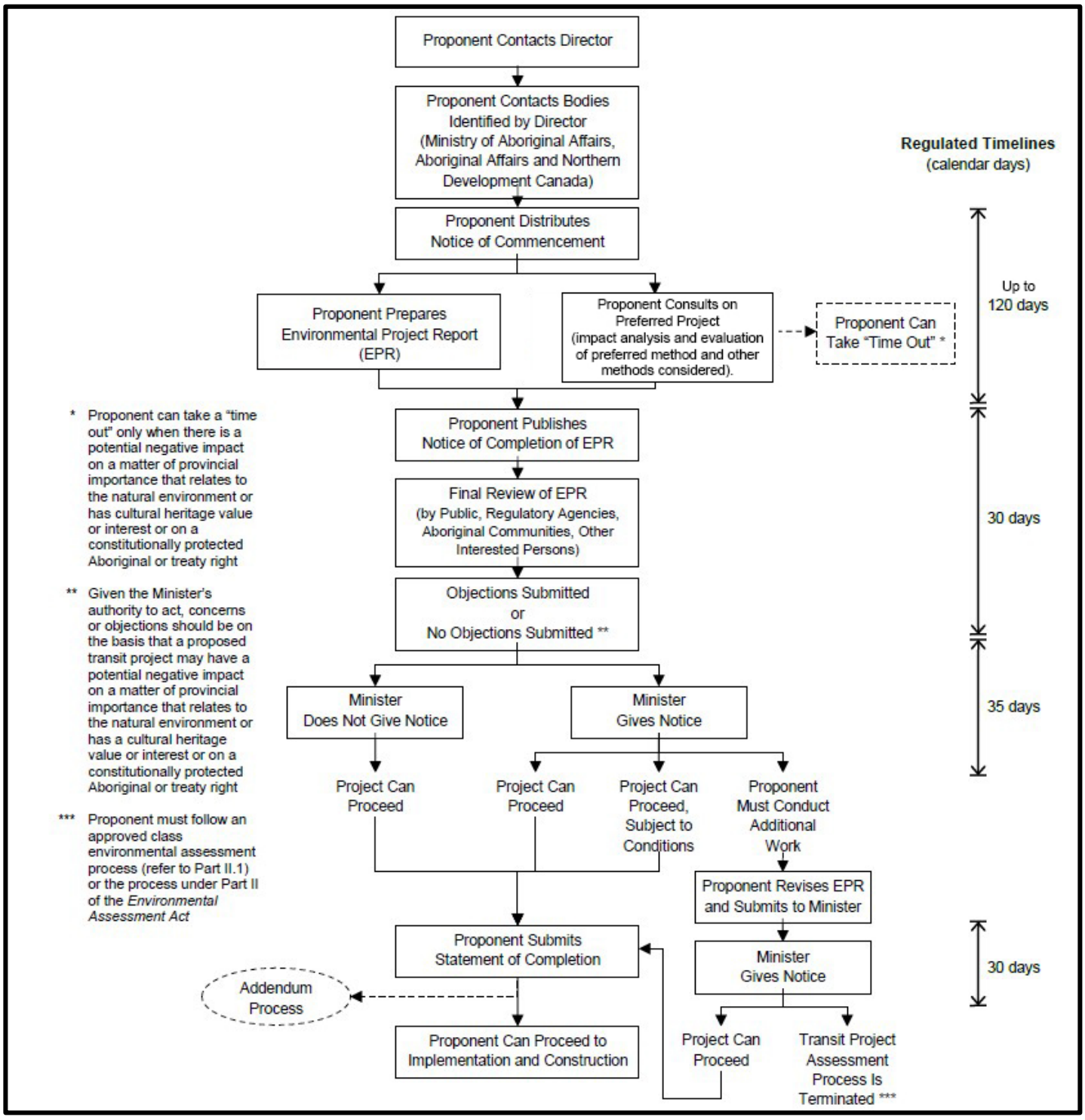


Figure ES 1-2: Outline of Transit Project Assessment Process

Assessment of Potential Effects and Proposed Mitigation Measures

The proposed Heritage Road Layover 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 Project (see Section 4). The assessment considered both the construction phase, and the operations 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.

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

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Air Quality					
Air Quality	•	–	Emissions from fuel combustion and fugitive dust during construction activities could temporarily decrease air quality.	Dust prevention and control methodologies may include, but are not limited to: • Regulate mobile equipment travelling speeds inside the construction area to prevent excessive dust generation. • Ensure proper maintenance of equipment and vehicles operating in work areas. • Proper planning of construction phases and effective use of construction equipment to reduce dust. • Minimize the size of active areas on storage piles. • Operators should use due diligence during material loading, unloading and transferring activities to avoid excessive dust generation. • Drop heights should be minimized as much as practicable. • Development and implementation of an Air Quality Management Plan for the construction phase. • Wetting or covering of open areas, unpaved roads, or material storage piles that may emit dust. • Usage of non-chemical dust suppressant to reduce fugitive dust emissions from temporary unpaved roads or parking lots. • Stabilization of construction access and roadways to reduce the tracking of construction sediment (mud and soil) onto public roads by construction equipment. • Regular sweeping of vehicle trackout on public roads. • Use of temporary barriers to prevent soil erosion and control windspeed for locations where dust could potentially be generated.	• Air monitoring for PM_{10} along the Project Site perimeter, with particular emphasis on the ZOI, will provide assurance that fugitive dust sources are being adequately controlled and the potential for off-site effects are minimized. • Construction activities will be monitored by a qualified Environmental Inspector.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				• Introduction of a no-idling policy to control mobile equipment and other vehicle emissions where applicable.	
Air Quality	–	•	Increase in volumes of train and vehicular traffic may decrease air quality but are anticipated to remain within MECP allowable air quality limits.	• No mitigation measures required.	• No monitoring activities are required.
Noise and Vibration					
	•	–	The predicted sound modelling indicate that it is feasible to operate most construction equipment within MECP limits. The vibration levels are predicted to meet the applicable limits during all construction stages.	The following standard noise mitigation measures are recommended noise management practices to reduce construction noise effects: • Major construction activities scheduled during daytime hours. • Noise mitigation measures (e.g., muffler systems) will be installed on construction equipment and properly maintained. • Where possible, construction equipment will be turned off when not in use (e.g., a no idling policy). • Vehicles and equipment should be routinely maintained and serviced for proper operation. • In case of a complaint received during construction, Metrolinx will investigate and take appropriate action to manage the issue responsibly. • Due to the proximity of the construction footprint to surrounding sensitive receptors, further recommendations for mitigation of construction vibration include: • Operate vibration-generating equipment as far from sensitive receptors as possible. • Schedule vibration-generating activities so that they do not occur at the same time. • Avoid use of impact pile-drivers and vibratory rollers near sensitive areas.	• Monitor noise where it is predicted 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 regular 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			
				• Schedule major construction activities to take place during daytime hours, where possible. Prior to commencement of construction, a detailed Construction Noise Management Plan shall be developed. • The Construction Noise Management Plan shall: ○ 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: ▪ 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.	

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Natural Environment					
Wildlife	●	-	Disturbance, displacement, or mortality of wildlife	• Prior to construction, field investigation of the Project Site for wildlife and wildlife habitat will be undertaken, as appropriate. • Where feasible, the Project Site construction zone will be surrounded by a silt (exclusion) fence within 48 hours of the commencement of construction activities to prevent wildlife from entering the site. The exclusion fencing will be examined daily and repaired as needed to ensure it functions as intended • If wildlife is encountered within the construction site, 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.	• 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.
Migratory Breeding Birds and Nests	●	-	Disturbance or destruction of migratory bird nests.	• All works must comply with the 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. • In the event that bird nests protected under the MBCA, FWCA, or ESA are encountered during construction, work must stop in the vicinity of the sighting until further direction is provided. These species and their nests must not be disturbed, tormented, injured, destroyed, and/or	• Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				separated from eggs, hatchlings, or chicks in any way. A protective buffer area should be established around the nest in consultation with a qualified avian biologist, as well as the MNRF, MECP, and/or Canadian Wildlife Service (CWS).	
Species at Risk – General	●	-	Habitat loss, disturbance and/or mortality to SAR.	• All requirements of the Ontario *Endangered Species Act* (ESA) and the federal *Species at Risk Act* (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 recovery 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.	• 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.
Species at Risk - Bats	●	-	Habitat loss, disturbance and/or mortality to bats.	• Per MECP guidance as part of the TPAP consultation: • If there are any structures or buildings on the subject lands that may be suitable for use by bats, surveys should be undertaken in accordance with the Ministry's protocols. ○ If SAR bats are determined to be present, potential direct impacts may be avoided if tree removal is completed outside of the roosting period or active season (December 1 to March 14)	• 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.
Species at Risk – Barn Swallow	●	-	Habitat loss, disturbance and/or mortality to Barn Swallow.	• Field surveys were undertaken prior to construction to confirm barn swallow presence in the area. • Where loss or disturbance cannot be avoided (e.g., due to work on bridges or banks), all requirements under the ESA will be met,	• 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			
				including any registration, compensation, replacement structures and/or permitting requirements. • If construction activities are scheduled during the nesting season for Barn Swallow (April 1st to August 31st), a nest search will be undertaken to confirm that no Barn Swallows 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.	measures will be developed with the MECP, if required.
Species at Risk – Eastern Meadowlark	●	-	Habitat loss, disturbance and/or mortality to eastern meadowlark.	• Field surveys were undertaken prior to construction to check for eastern meadowlark presence in the area. • If construction activities are scheduled during the nesting season for eastern meadowlark (April 1st to August 31st), a nest search will be undertaken to confirm that no eastern meadowlark are nesting in or near areas that may be affected by construction activities.	• 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 Environment - Watercourses	●	-	Impacts to three watercourses in the Natural Environment Study Area, aquatic and riparian vegetation; erosion and sedimentation to watercourses from construction; risk of contamination to watercourses, as a result of spills.	• Shorelines or banks disturbed by construction activities will be immediately stabilized by any activity associated with the project to prevent erosion and/or sedimentation, through re-vegetation with native species suitable for the site in adherence with the Metrolinx Vegetation Guideline (2020). • An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guide for Urban Construction (TRCA 2019), as amended from time to time, will be prepared prior to and implemented during construction to minimize the risk of sedimentation to the wetland or waterbody. • A Spill Prevention and Response Plan will be developed before work commences and implemented during construction to ensure procedures and policies are in place during construction to minimize impacts to wetlands or waterbodies.	• 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			
				• 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. • A Salt Management Plan will be developed before work commences to ensure procedures and policies are in place during construction and operations to minimize impacts to watercourses. • 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. • Operate, store, and maintain equipment, vehicles, and associated materials in a manner that prevents the entry of any deleterious substance from entering the natural environment. • Implement drip pans under equipment (e.g., generators, pumps, etc.) in operation within the work areas. • Any refuelling should be undertaken at least 30 m from any watercourse and any other surface drainage feature. • 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) *Stormwater Management Planning and Design Manual* (2003), the Greater Golden Horseshoe's *Erosion and Sediment Control Guideline for Urban Construction* (December, 2006), as amended from time to time, and the guidelines and regulatory requirements of CVC. • The overall stormwater quality and quantity control strategy will be developed in accordance with all relevant municipal,	

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				provincial and federal requirements, as amended, as well as the requirements of CVC.	
Aquatic Environment – Fish and Fish Habitat	●	-	Potential for direct, in-water impacts to fish and fish habitat.	• All requirements of the Fisheries Act and the ESA will be met. • As the watercourses on the Project Site are seasonal intermittent watercourses, a spring freshet survey will be completed in spring 2023 to further assess conditions prior to construction. • 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.	• 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.
Vegetation Removal and Compensation Plans	●	-	Tree / Vegetation removal, injury and protection.	• As part of the Arborist Report, all trees within or adjacent to the Project Study Area that will be removed or injured as part of the Project will be inventoried, including Butternut and any other SAR vegetation. SAR vegetation will be subject to permitting and approval requirements under Applicable Law, prior to the commencement of construction. The Arborist Report will include, but not be limited to the individual identification of all trees within the 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 Study Area will include those on Metrolinx property, trees on public and private lands, and boundary trees. Municipal by-laws will dictate the	• 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 Metrolinx's Vegetation Guideline (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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				minimum 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 tree end use (including identification of high value trees) as per the Metrolinx Vegetation Guideline (2020). • Vegetation compensation will be implemented through Metrolinx's Vegetation Compensation Guideline (2020), at minimum. Metrolinx's Vegetation Guideline considers baseline, municipal and ecological compensation strategies, and Metrolinx will work with the Treaty/Rights Holders, CVC, and the City during detailed design to identify appropriate measures for tree compensation. • 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 Vegetation Guideline (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 Vegetation Guideline (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	• Monitoring requirements will be undertaken in accordance with conditions of permits and approvals. • Monitoring and management of trees/vegetation within the Kitchener Corridor right-of-way will be undertaken in accordance with the Integrated Vegetation Management (IVM) Program within the Metrolinx Vegetation Guideline (2020).

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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				Natural Environment commitment tables for additional details.	
Vegetation Removal and Compensation Plans – SAR Habitat	●	-	Disturbance, injury and/or removal of SAR vegetation, including Butternut.	• As part of the Arborist Report, all trees within or adjacent to the Project Site 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 the Butternut Assessment Guidelines (MNRF, 2014). The Assessor will prepare a Health Assessment Report for submission to MECP to determine the next course of action.	• On-site inspection will be undertaken to confirm the implementation of the mitigation measures.
Integrated Vegetation Management (IVM)	●	-	Footprint Impacts and potential for the establishment of invasive species and other incompatible species.	• An IVM Plan will be developed and implemented that is in adherence with the Metrolinx Vegetation Guideline (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.	• 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 Vegetation Guideline (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, Agrilus planipennis (Fairmaire) associated with removal, handing and transport of ash trees.	• Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, Agrilus planipennis (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. • Ensure precautions are being taken to minimize the spread of invasive species by cleaning equipment prior to moving sites.	• 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 Environment					

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
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Archaeological Resources	●	-	Potential for site AjGx-267 (Heritage Layover H1) to be impacted by construction and operational activities. No impacts are anticipated to Site AjGx-268 (Heritage Layover H2), which lies outside of the construction footprint.	• 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 incorporate any additional actions required resulting from subsequent Archaeological Assessment Reports. • All work shall be performed in accordance with Applicable Law, including but not limited to the *Ontario Heritage Act*, the Ministry of Tourism, Culture and Sport (MTCS), formerly the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) *Standards and Guidelines for Consultant Archaeologists* (2011), and the MTCS document, *Engaging Aboriginal Communities in Archaeology: A Draft Bulletin for Consultant Archaeologists in Ontario* (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 MTCS. 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 MTCS, 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	• 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
	Construction	Operation			
				Assessments resulting from the Stage 1 AA (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 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 MTCS 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 communities, as per Metrolinx's *Guide to Engaging with Indigenous Communities* (2020).	
CHR1 - McNichol Cemetery	-	-	No direct adverse impacts are anticipated to the McNichol Cemetery. However, the close proximity of the proposed work to the cemetery poses a potential risk for land disturbance.	• The proposed work should be planned in a manner that avoids the McNichol Cemetery. • In accordance with the MTCS's *Standards and Guidelines for Consultant Archaeologists* (2011) and the *Funeral, Burial, and Cremation Services Act* and regulations under that Act, work in proximity to known cemeteries requires completion of an Archaeological Assessment	• Long term protection of the cemetery must be ensured, and no development, including any soil disturbing activities, can take place within the cemetery limits. • Further Archaeological Assessment may identify the need for monitoring during construction.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				prior to any proposed ground disturbance. Previous Archaeological Assessments have been carried out in McNichol Cemetery (see Appendix G) and temporary fencing will be erected during construction to protect the cemetery.	
CHR2 - Built Heritage Resource – 10827 Winston Churchill Boulevard	●	-	Indirect Adverse Impact. Isolation of a heritage attribute from its surrounding environment, context, or a significant relationship.	• The proposed work does not encroach on the property and should be planned in a manner that maximizes the buffer between the proposed access road/layover facility and the residential property. This property should be noted on project drawings as a “potential heritage property” to identify the heritage status of the property to project personnel. Selection of construction staging and laydown areas will follow Metrolinx ‘s selection procedures, which includes avoiding the property wherever possible or effectively mitigating impacts where not possible. • Post-construction landscaping should be planned in a manner that screens the layover facility and access road from the residential property. Options for vegetation screening will be explored during detailed design.	• None.
CHR3 - Built Heritage Resource – 10746 Winston Churchill Boulevard	-	-	None. The residence is located approximately 110 metres from the proposed work.	• None.	• None.
Socio-Economic and Land Use					
Property	●	●	Property acquisition – permanent and temporary.	• Specific property requirements will be confirmed during detailed 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.	• Number and resolution of complaints received.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
All land uses and adjacent lands	●	-	Nuisance effects from construction activities.	• The Project will comply with regulated noise and vibration limits for construction activities. • Mitigation measures related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration section of the commitment tables. • 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 to respond to construction nuisance complaints.	• When applicable, monitoring related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration commitment tables. • Number and resolution of complaints received.
All land uses and adjacent lands	●	●	Land use and access disruption.	• Provide temporary lighting and wayfinding signs and cues for navigation around the construction site.	• Number and resolution of complaints received.
Aesthetics / Visual Characteristics	●	●	Visual effects from construction / operations areas / activities.	• The Project has been designed to minimize effects on existing land use and development due to the setback from the adjacent road. • Temporary storage sites for equipment, staging / laydown areas, stockpiling of materials and other construction activities will be removed at the end of construction and no longer affect the viewscape • A screened enclosure for the development site will be provided, with particular attention to the waste disposal and material storage areas.	• 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.	• Develop a plan to reduce the effects of light pollution in accordance with the Project Agreement Comply with all local applicable municipal by-laws for lighting in areas near roadways regarding outdoor lighting for both permanent and temporary construction activities and incorporate industry best practices provided in ANSI/IES RP-8-18 – Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting, as described in the Project Agreement.	• Number and resolution of complaints received.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				• 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. • Permanent lights will be installed for operations of the site.	
Transportation/Traffic					
Traffic	●	-	Construction may result in the need for temporary road or lane closures.	• Traffic Control and Management Plan(s) will be developed prior to construction to maintain reasonable access through work zones, 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 impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.
Utilities					
Utilities Planning and Construction	●	–	Utility serviceability effects due to design requirements and construction	• 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.	• Maintain regular communication and coordination through issuance of regular progress reports and updates to applicable utility agencies.
Hydrogeology					
Groundwater	●	–	Construction activities could expose groundwater and associated contamination	• 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 *Ontario Regulations 406/19* (On-Site and Excess Soil Management – to be enacted into law on July 1,	• 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			
				2020), *64/16* and *387/04*, as amended under the *Ontario Water Resources Act*. • 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.	
Stormwater Management					
Potential Impacts and Proposed Mitigation Measures for Stormwater and Site Drainage	●	–	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).	• 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) *Stormwater Management Planning and Design Manual* (2003), the Greater Golden Horseshoe's *Erosion and Sediment Control Guideline for Urban Construction* (December 2006), as amended from time to time, and the guidelines and regulatory requirements of CVC. • 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 CVC. • A detailed assessment of proposed ditches along the Kitchener Corridor is required to ensure adequate drainage conveyance in accordance with municipal requirements and American Railway	• 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 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 CVC.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				Engineering and Maintenance-of-Way Association (AREMA) *Manual for Railway Engineering* (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 layover 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. • A hydraulic assessment of each crossing and any proposed culverts is required to determine proposed flood levels and associated creek bed and bank treatments to prevent scour and erosion and facilitate fish passage. Where applicable, the regulatory model(s) will be obtained from CVC to assess the hydraulic impacts along regulated watercourses. • Any proposed culvert replacements will be sized to maintain or improve local flood levels and supported by hydrologic/hydraulic calculations and/or models. Creek bed and banks design will include geomorphological input for scour and erosion prevention, and creation of appropriate fish habitat. • Incorporate Low Impact Development (LID) where practical and feasible, in accordance with design guidelines and standards.	• 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 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 *Stormwater Management Planning and Design Manual* (2003).

Consultation Process

Metrolinx consulted with and will continue to engage with Indigenous communities and Nations, and consult with government agencies, municipalities, elected officials, Regulatory Agency Staff and members of the public (including local residents, businesses, and interested groups) through various communication methods throughout both the Pre-Planning and the TPAP activities.

Consultation for this project occurred in two main stages, Pre-Planning, which occurred prior to the issuance of the Notice of Commencement, and regulated TPAP consultation activities, following the Notice of Commencement. Figure ES 1-2 details how consultation is integrated into the TPAP.

Two online Public Meetings were held for the Project. The first, held online from January 12 to January 26, 2022, provided an overview of the Project conceptual design, an outline of the TPAP, and a summary of the technical studies being prepared in support of the environmental assessment. A second round of consultation was held virtually from April 6 to April 20, 2022 to present draft environmental and desktop technical study findings.

In addition to the Public Meetings, Technical Advisory Committee Meetings (TACs) were also held with staff from the City of Brampton, Peel Region, the Town of Halton Hills, and Credit Valley Conservation and separately, discussions were held with municipal and provincial Elected Officials.

"Time Out" Process

On July 18, 2022, the TPAP was paused to engage further with Indigenous communities and Nations to provide additional context to the Project and describe in detail the technical studies undertaken, such that an Indigenous Nation can share with Metrolinx the potential and scope for adverse impacts to Indigenous and Treaty Rights resulting from the Project.

A Notice of Issue was sent to the Director of the Environmental Assessment and Permissions Branch of the Ministry of Environment, Conservation and Parks on July 18, 2022 and posted to the project website. The Notice of Issue was also communicated to Indigenous communities and Nations, government agencies, municipalities, elected officials, and members of the public identified in the project ailing list, and property owners surrounding the Heritage Road Layover area.

To facilitate the discussion of potential impacts to Indigenous and Treaty Rights as it relates to the Project, the following engagement was completed:

- A workshop held with Six Nations of the Grand River on July 22, 2022; and
- Ongoing engagement with Haudenosaunee Confederacy Chiefs Council by way of the Haudenosaunee Development Institute, which included establishing a project-specific agreement with the Nation.

Follow-up meetings were completed with the Ministry of Environment, Conservation and Parks to outline the outcomes of the above-noted engagement activities.

Project-specific feedback provided by Indigenous communities and Nations will be integrated as future commitments within the EPR and continue through detailed design and construction. Metrolinx is committed to working with Indigenous communities and Nations outside of the Heritage Road Layover project regarding broader issues that extend beyond the Heritage Road Layover scope of work.

A Notice of Resumption was provided to the Director of the Environmental Assessment Permissions Branch on August 16, 2022, and the 120-day TPAP consultation period resumed and concluded on August 18, 2022.

Commitments to Future Work

As part of the TPAP, *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. 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 Indigenous and Treaty Rights.

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

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

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List of abbreviations and definitions

AA	Archaeological Assessment. This may refer to Stage 1, Stage 2, Stage 3, or Stage 4 Archaeological Assessments.
AAQC	Ambient Air Quality Criteria
AMO	Atlas of the Mammals of Ontario
AODA	Accessibility for Ontarians with Disabilities Act
AREMA	American Railway Engineering and Maintenance-of-Way Association
BCI	Bat Conservation International Inc
BHR	Built Heritage Resource
BMP	Best Management Practice
Brampton	City of Brampton
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminant
CHER	Cultural Heritage Evaluation Report
CHR	Cultural Heritage Resources
CHVI	Cultural Heritage Value or Interest
cm	Centimetre(s)
CN	Canadian National Railway

CTC	Refers to the Credit Valley-Toronto and Region-Central Lake Ontario Source Protection Region
CVC	Credit Valley Conservation Authority
CWR	continuously welded rail
CWS	Canadian Wildlife Service
DBH	Diameter at breast height
DFO	Department of Fisheries and Oceans Canada
DRM	Design Requirements Manual
EA	Environmental Assessment
EAA	Environmental Assessment Act
EASR	Environmental Activity Sector Registry is a registration requirement in respect of construction-related water taking activities prescribed under Ontario Regulation 63/16, as well as noise and vibration and air quality activities prescribed under Ontario Regulation 1/17 – Activities Requiring Assessment of Air Emissions made under the Environmental Protection Act (Ontario).
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
EMMP	Environmental Mitigation and Monitoring Plan
EMS	Environmental Management System
EPR	Environmental Project Report
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
ETR	Express Toll Road
FLSA	French Language Services Act
Freshet	A large increase of water discharge volume in a river during spring months due to snow melt or storm events.
GGH	Greater Golden Horseshoe
GHG	Greenhouse Gas
GRT	Government Review Team
GTA	Greater Toronto and Hamilton Area
GTHA	Greater Toronto and Hamilton Area
GTTS	GO Transit's Track Standards
Halton Hills	Town of Halton Hills

HHSWS	Draft Heritage Heights Subwatershed Study
HIA	Heritage Impact Assessment
HOV	High occupancy vehicle
HWIN	Hazardous Waste Information Network Registry
IDC	Intensity Duration Curves
IDF	Intensity-duration-frequency
Indigenous or Aboriginal	Includes First Nations, Métis, and Inuit people in North America. While the term “Indigenous” is the more preferred term, the use of “Aboriginal” in this document is in reference to s.35 of the Canadian Constitution Act, 1982.
IPCC	Intergovernmental Panel on Climate Change
IRO	Metrolinx Indigenous Relations Office central point of contact for communications and consultations with the Indigenous communities and Nations.
IVM	Integrated Vegetation Management
Kitchener Corridor	The Kitchener Corridor is a railway line for Metrolinx trains between Union GO Station and Kitchener GO Station. The Halton Subdivision of the Kitchener Corridor is owned by CN.
km	Kilometres
km/hr	Kilometres per hour
kVA	Kilovolt ampere
LID	Low Impact Development
LSA	Local Study Area
LRTP	Long Range Transportation Plan
LRT	Light Rail Transit
m	Metres
MECP	Ministry of Environment, Conservation, and Parks
Metrolinx	Metrolinx is a provincial crown agency under the Metrolinx Act, S.O. 2006, Chapter 16, and its successors and assigns.
MTCS	Ministry of Tourism, Culture and Sport, formerly known as the Ministry of Heritage, Sport, Tourism, and Culture Industries
MMAH	Ministry of Municipal Affairs and Housing
MNRF	Ministry of Natural Resources and Forestry, formerly known as Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF).
mph	Miles per hour

MTO	Ministry of Transportation Ontario
MVA	Megavolt ampere
NAPS	National Air Pollution Surveillance
NHIC	Natural Heritage Information Centre
NZOI	Noise Zone of Influence
OBBA	Ontario Breeding Bird Atlas
Oil-Grit Separator	Oil-grit separators are underground devices designed to protect waterways from hazardous material spills and stormwater pollution.
ORAA	Ontario Reptile and Amphibian Atlas
O.Reg.	Ontario Regulation
OBA	Ontario Butterfly Atlas
OHT	Ontario Heritage Trust
ORMCP	*Oak Ridges Moraine Conservation Plan, 2017*
OWRA	*Ontario Water Resources Act, 1990*
PAH	Polycyclic Aromatic Hydrocarbons
PLAA	Permits, Licenses, Approvals, and Agreements
POR	Point of Reception
PPS	*Provincial Policy Statement, 2020*
PSOS	Project Specific Output Specifications
PTTW	Permit To Take Water is a permit issued by the MECP for the taking of water in accordance with Ontario Regulation 387/04, made under the Ontario Water Resources Act, or an Environmental Activity Sector Registration in accordance with the Ontario Regulation 63/16, made under the Environmental Protection Act (Ontario).
ROW	Right-of-Way
RSA	Regional Study Area
RSR	Representative Sensitive Receptors
RTP	Metrolinx's Regional Transportation Plan
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk Ontario
STEP	Sustainable Technologies Evaluation Program

SWH	Significant Wildlife Habitat
SWM	Stormwater management
TAC	Technical Advisory Committee
the Project	Heritage Road Layover Project
The Regional Plan	The Halton Regional Official Plan
TIA	Traffic Impact Analysis
TIP	Tree Inventory Plan
TMP	City of Brampton Transportation Master Plan
TPAP	Transit Project Assessment Process
TPZ	Tree Protection Zone
TSS	Total Suspended Solids
Undercoverage rate	Accounts for the total population of an area beyond the population within the 2021 Statistics Canada Census results.
VOCs	Volatile organic compounds
VZOI	Vibration Zone of Influence
Wood	Wood Environment & Infrastructure Solutions Canada Limited
ZOI	Zone of Influence

1.0 Introduction and Study Process

Metrolinx is proposing to expand its facilities along the Kitchener Corridor, which runs from Union GO Station to Kitchener GO Station. A new layover, the Heritage Road Layover (the Project), is required to provide additional storage capacity which is required to achieve the proposed level of service (two-way all-day service from Union GO Station to Bramalea GO Station and 15-minute peak service and 30-minuteoff peak and counterpeak service for stations between Bramalea GO Station and Mount Pleasant GO Station, with an opportunity to expand to two-way all-day service at Georgetown GO Station) and consolidate the operational needs associated with frequent inner service to optimize operations planning for start and end of service.

Metrolinx retained Wood Environment & Infrastructure Solutions Canada Limited (Wood) to complete the construction design and Transit Project Assessment Process (TPAP) for the proposed facility.

The layover facility will be designed with four (4) tracks with the capacity to accommodate one (1) train consist of two (2) locomotives and 12 coaches or two (2) trains consists of one (1) locomotive and six (6) coaches on each track.

1.1 Project Overview

Metrolinx is completing a Transit Project Assessment Process (TPAP) 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 purpose of the Heritage Road Layover (the Project) is to install a new layover to accommodate increased service and support the need for additional train storage and maintenance associated with the planned growth and service improvements on the Kitchener Corridor that are being planned and implemented as part of Metrolinx's commitment to GO Expansion. The site of the layover facility is proposed on the Halton Subdivision portion of the Kitchener Corridor between Heritage Road (Mile 20.14) and Winston Churchill Boulevard (Mile 21.15) in the City of Brampton, Regional Municipality of Peel (See Figure 1-1).

This Environmental Project Report (EPR) documents the findings of the TPAP with respect to existing environmental conditions, assessment of potential impacts, mitigation measures and monitoring requirements, stakeholder and public consultation, and commitments to future work.

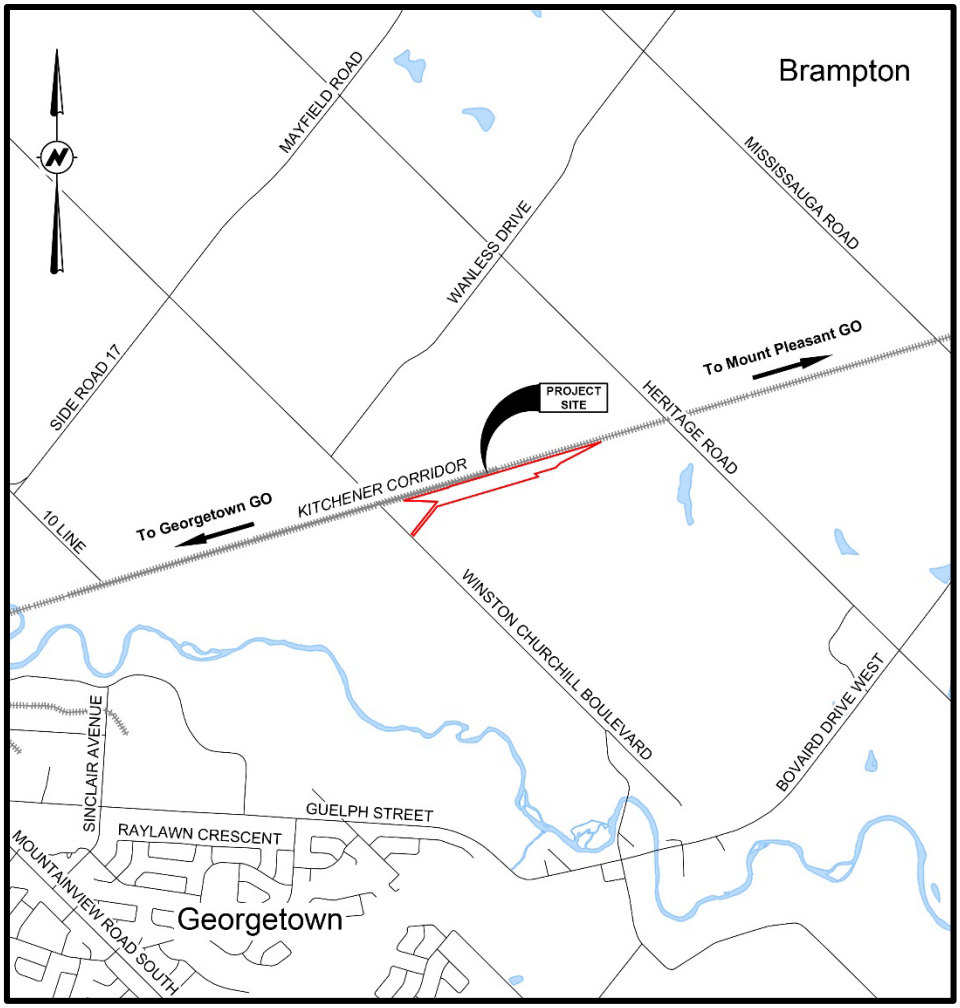


Figure 1-1: Location of Project Site

1.2 Project Context

1.2.1 GO Expansion

To get people moving throughout the Greater Toronto and Hamilton Area (GTHA) Metrolinx is actively building and upgrading existing GO rail stations, adding new track, building, and opening new maintenance and storage facilities, expanding and revitalizing bridges, and improving pedestrian connections. Modifying its usage from a rush hour commuter service, GO will offer more service with faster trains, more stations, and seamless connections to a regional rapid transit network. With GO Expansion, service will increase to 15-minute two-way all-day service with 6000 weekly trips. This will offer twice as many rush-hour options and three times as many off-peak options. With GO Expansion, the intent to add electrification for the entire rail network, reducing greenhouse gas emissions throughout Ontario. In addition, electric trains accelerate and decelerate faster, reducing trip time throughout the region. GO Expansion will create an estimated 8300 annual jobs for the first 12 years of service and double regional community capacity equivalent to nine highways the size of the 401. As part of GO

Expansion, service improvements are being added to the Kitchener Corridor, including this Project (Metrolinx Engage, 2021).

1.2.2 Kitchener Corridor

The Kitchener Corridor, as shown in Figure 1-2, connects the City of Kitchener within the Waterloo Region to Toronto and is primarily used for commuting purposes. Along the Kitchener Corridor are stops in Guelph, Halton Hills, Brampton, Mississauga, and Etobicoke, among others (Metrolinx Engage, 2021). As part of GO Expansion, the Kitchener Corridor will also include 15-minute two-way all-day service from Union GO Station to Bramalea GO Station and 15-minute peak service and 30-minuteoff peak and counterpeak service for stations between Bramalea GO Station and Mount Pleasant GO Station. This will create better connectivity between the Guelph-Wellington region and the rest of the GTHA, support economic development, and promote urban development plans and better transit accessibility (Metrolinx Engage, 2021). The Project is located on the Kitchener Corridor between Mount Pleasant GO and Georgetown GO stations.

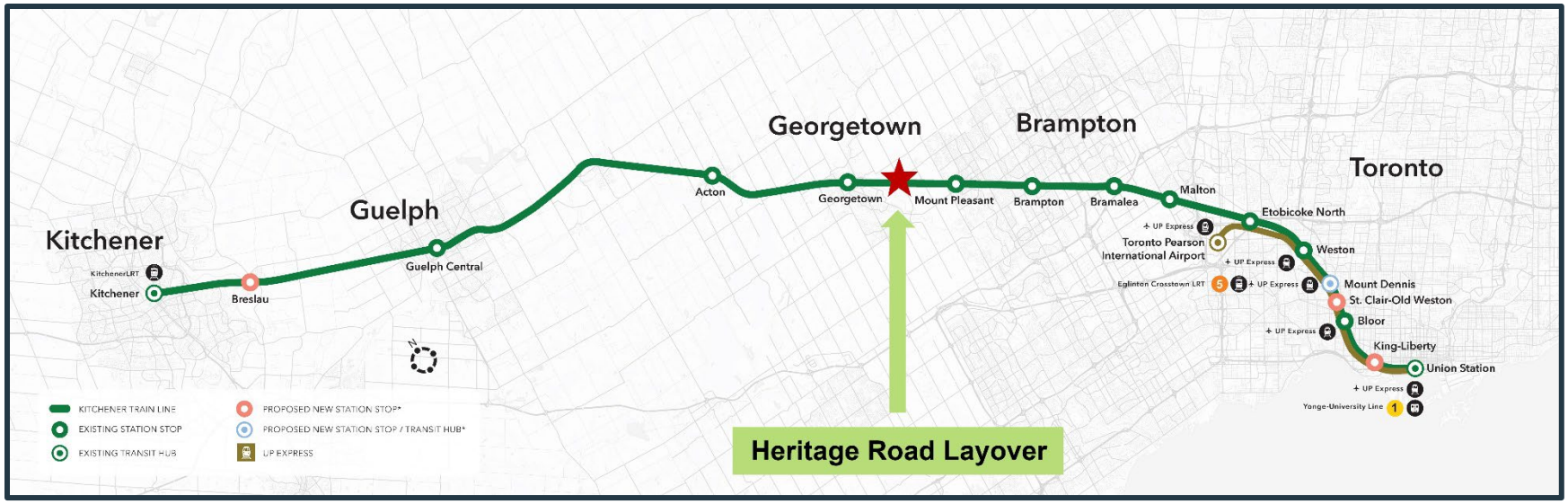


Figure 1-2: Kitchener Corridor

1.3 Planning Context

Several provincial and regional planning policies, as well as documents were reviewed to inform this assessment and the design considerations for the proposed project.

1.3.1 Provincial

Provincial Policy Statement (2020)

The *Provincial Policy Statement (2020a)* (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 use of land, resources, and infrastructure.

The PPS emphasizes the need to increase the use of active transportation and transit before other modes of travel. This Project is consistent with the PPS as it supports transportation choices that increase the use of public transit and promotes a safe transportation system. The proposed layover will eventually lead to two-way, all-day service, which will improve public transit in southern Ontario and thus increase ridership. The proposed layover facility will improve efficiency and reliability of the GO Transit service which in turn, will support the delivery of GO Expansion. GO Expansion will improve public transit across southern Ontario and increase ridership."

The policies from the PPS relevant to the Project are described in Table 1.3-1.

Table 1.3-1: PPS Policies Relevant to Heritage Road Layover

Section	PPS Policies Relevant to the Project
Section 1.1 Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns	
Subsection 1.1.1	"Healthy, liveable and safe communities are sustained by: e. promoting the integration of land use planning, growth management, *transit-supportive* development, *intensification* and *infrastructure* planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs; g. Ensuring that necessary infrastructure public service facilities are or will be available to meet current and projected needs. Preparing for the regional and local impacts of a changing climate."
Section 1.6 - Infrastructure and Public Service Facilities	
Subsection 1.6.1	"Infrastructure and public service facilities shall be provided in an efficient manner that prepares for the impacts of a changing climate while accommodating projected needs."

Section	PPS Policies Relevant to the Project
Subsection 1.6.1	"Planning for infrastructure and public service facilities shall be coordinated and integrated with land use planning and growth management so that they are: a. financially viable over their life cycle, which may be demonstrated through asset management planning; and, b. available to meet current and projected needs."
Section 1.6.7 - Transportation Systems	
Subsection 1.6.7.1	"Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs."
Subsection 1.6.7.2	"Efficient use should be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible."
Subsection 1.6.7.3	"As part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries."
Section 1.6.8 Transportation and Infrastructure Corridors	
Subsection 1.6.8.1	"Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs."
Section 2.1 Natural Heritage	
Subsection 2.1.2	"The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features."

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

The *Growth Plan for Greater Golden Horseshoe (2020)* was prepared and approved under the *Places to Grow Act (2005)* and amended in 2020 to include more details regarding growth targets for transit corridors and station areas, employment forecasts and population projections for municipalities. This plan supplements and builds upon the PPS in providing more specific land use planning policies relating to specific geographic areas in Ontario (MMAH, 2020a).

The following sections focus on studies and policies relevant to the Project:

Section 3.2.2. Transportation General, notably:

> "The transportation system within the GGH [Greater Golden Horseshoe] will be planned and managed to:
>
> a) provide connectivity among transportation modes for moving people and for moving goods; and,
>
> f) provide for the safety of system users" (MMAH, 2020a).

A Made-in-Ontario Environment Plan (2018)

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

The following sections of the Plan are relevant to the Project:

- Government Leadership (Actions): "Improve public transportation to expand commuter choices and support communities".
- Government Leadership (Actions): "Support green infrastructure projects".
- Government Leadership (Actions): "Early actions: GO Train Service Increase" (Ministry of the Environment, Conservation and Parks, 2018).

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).

The Project Site is situated adjacent to lands designated in the Greenbelt Plan as Protected Countryside. The rural lands of the Protected Countryside are intended to continue to accommodate a range of commercial, industrial and institutional uses serving the rural resource and agricultural sectors.

The Big Move (2008)

Metrolinx developed the first regional transportation plan for the GTHA entitled *The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area (The Big Move; 2008)* in response 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, 2008).

The Big Move outlined 13 goals and 37 objectives. The relevant objectives supporting the development of the Project were:

- Objective 1: “Increased transportation options for accessing a range of destinations”;
- Objective 4: “Improved transportation experience and travel time reliability”;
- Objective 5: “Faster, more frequent and less crowded transit”;
- Objective 27: “Improved connections and service within the GTHA and to/from interregional, interprovincial, and international terminals and facilities”; and
- Objective 31: “Increased productivity of the transportation system” (Metrolinx, 2008)

The 2041 Regional Transportation Plan (2018)

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

The *2041 Regional Transportation Plan* outlines five (5) main strategies:

1. Complete the delivery of current regional transit projects.
2. Connect more of the region with frequent rapid transit.
3. Optimize the transportation system.
4. Integrate transportation and land use.
5. Prepare for an uncertain future (Metrolinx, 2018).

Of these five (5) strategies, this Project is supported by Strategy 1 and 2. The focus of Strategy 1 is to develop the GO Expansion Program (formerly known as GO Regional Express Rail), which aims to eventually convert the GO rail system from commuter-based service to a two-way, all-day service (Metrolinx, 2018).

Additionally, Strategy 2 focuses on expanding the GO Regional Express Rail to meet travellers’ future needs to 2041 and defines a frequent rapid transit network as: “A seamless and reliable network of transit services running at least every 10-15 minutes all-day, every day. The Frequent Rapid Transit Network will consist of transit routes and corridors that ensure fast and reliable service through the use of dedicated infrastructure, design elements, and other supporting investments as required (e.g., full grade separation, exclusive right-of-way, HOV lanes, queue jump lanes, wider stop spacing than conventional transit routes, signal priority, or other transportation systems management measures) (Metrolinx, 2018).”

The Big Move resulted in completion of nine (9) major transit projects with 14 currently in engineering design phase or under construction. 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, 2018).

Highway 413 (GTA West)

The Ontario government is moving forward with building Highway 413, a new 400-series highway and transit corridor across Halton, Peel and York regions. The corridor is expected to include a 4 to 6 lane, 59-kilometre 400-series highway with connections to Highways 400, 427, 410, 401, and 407 Express Toll Road (ETR). The highway would have 11 interchanges at municipal roads and features such as electric charging stations, service centres, carpool lots and truck inspection stations will all be explored as part of the design. The technically preferred route for Highway 413 in the City of Brampton travels north-south from Highway 401 in a corridor located between Mississauga Road and Heritage Road. The Project Site is situated west of Heritage Road, slightly to the west of the proposed Highway 413 preferred alignment corridor.

It is of note that the City of Brampton has proposed an urban boulevard in lieu of Highway 413 through the Heritage Heights area. More details are described in Section 1.3.2 Heritage Heights Secondary Plan.

1.3.2 Municipal

The site for the proposed Heritage Road Layover lies just to the east of Winston Churchill Boulevard, which serves as the boundary between Halton Region and the Town of Halton Hills, and Peel Region and the City of Brampton. Given that the study areas for a number of the studies undertaken to prepare this EPR take in lands west of Winston Churchill Boulevard, the land use plans and policies of Halton Region are also taken into account.

Halton Regional Official Plan (2018 Office Consolidation)

The Halton Regional Official Plan (*The Regional Plan*) is in place to solidify past decisions and to give clear direction as to how physical development should take place in Halton to meet the current and future needs of its people and landscape. *The Regional Plan* clarifies and assists in the delivery of Regional services and responsibilities as set out in the Planning Act, the Municipal Act, and other pertinent Provincial legislation (Regional Municipality of Halton, 2018).

The Regional Plan notes the goal for transportation "…is to provide a safe, convenient, accessible, affordable and efficient transportation system in Halton, while minimizing the impact on the environment and promoting energy efficiency" (Regional Municipality of Halton, 2018).

Town of Halton Hills Official Plan (2019 Office Consolidation)

The Local Study Area falls within the Greenbelt and it is designated Protected Countryside in the *Town of Halton Official Plan*. (Town of Halton Hills, 2019).

Region of Peel 2051 Official Plan Review (2018; 2022 Office Consolidation)

The Region of Peel Official Plan outlines a policy framework for guiding growth and development in Peel, while protecting the environment (Region of Peel, 2022).

The following sections identify objectives related to transit:

Section 5.6.19.9: “Work jointly with the Ministry of Transportation, Metrolinx, and local municipalities to identify additional transit stations that may be approved in the future, through initiatives such as the GTA West Transportation Corridor Environmental Assessment and additional transit stations that will support growth and the movement of people in Designated Greenfield Areas, as Major Transit Station Areas on Schedule E-5 of the Region of Peel Official Plan.”

Section 5.10.34.32: “Work with the Province, local municipalities, and other regions and municipalities in the Greater Golden Horseshoe to implement the Metrolinx Regional Transportation Plan and contribute to future updates of the Regional Transportation Plan.”

Let’s Move Peel Long Range Transportation Plan (2019)

The Long Range Transportation Plan (LRTP) is a five-year plan that guides transportation planning and infrastructure needs in the Region of Peel and sets out the blueprint to accommodate anticipated growth to 2041.

The Plan serves as:

The basis for recommended Transportation Infrastructure Programming;

The basis for the Transportation Capital Budget and 10-year Program; and,

Input into the Development Charges Background Study and By-law Update in 2020.

Key Components of the LRTP include:

Sustainable Mobility

Safe Mobility

Vehicular Mobility

Recommended Future Transportation Network

Implementation and Measurement

City of Brampton Official Plan (2006; 2020 Office Consolidation)

The *City of Brampton Official Plan* was adopted in 2006 and modified in 2008 to conform with the *Places to Grow – Growth Plan for the Greater Golden Horseshoe*. In September 2020, *The Official Plan* was consolidated to include a series of amendments. *The Official Plan* outlines land-use decision making processes within the municipality to 2031. *The Official Plan* is used to guide development and infrastructure decisions relating to land use, built form, transportation and the environment. The purpose of *the Official Plan* is to provide clear direction on how physical development and land-use decisions take place in Brampton to meet the needs of current and future residents (City of Brampton, 2020).

Section 2.4.1 of *The Official Plan* highlights the development of modern transportation systems and indicates three (3) main objectives:

a. “Create an integrated and expanded transportation network to provide a high level of service tied to the rate of distribution of growth within the City and to enhance accessibility for all residents including persons with disabilities”;

b. “Expand public transit service for Brampton’s residents including persons with disabilities and employers and to provide seamless connections to popular destinations within the GTA”; and,

c. “Build a pathway system that is accessible to all including persons with disabilities through a series of walking, cycling and multi-use trails that connects Brampton’s major destinations and links with other trails systems outside Brampton” (City of Brampton, 2020).

Section 4.5 of *the Official Plan* notes the intricate relationship between transportation, land use, the environment and physical form. Of the five (5) main objectives and the notable objectives two are relevant to this Project:

d. “To promote a high standard of environmental management and aesthetic quality in the routing, design and construction of transportation and associated structures, including green infrastructure and stormwater management practises in the right-of-way of new and retrofitted existing roads”; and,

e. “To work cooperatively with the Region of Peel, neighbouring municipalities and other regional municipalities, the Province and its agencies (e.g. Metrolinx) to develop an integrated transportation plan” (City of Brampton, 2020).

Section 4.5.4.32 of *the Official Plan* discusses Brampton’s intention to encourage Metrolinx to improve commuter services by:

i. “Introducing all-day, two-way service for commuters travelling to and from Brampton”;

ii. “Providing adequate off-peak service”;

iii. “Ensuring better connections with subway and other transit nodes”;

iv. “Expanding and enhancing access to all existing Commuter Rail stations”;

v. “Providing adequate parking lots/spaces”; and,

vi. “Improving pedestrian access and providing bicycle facilities” (City of Brampton, 2020).

As per *Schedule D: Natural Heritage Features and Areas* from the Official Plan, two watercourses on the Project Site are designated as Valleyland/Watercourse Corridors. Section 4.6.6.20 of the Official Plan emphasizes avoiding removal of natural heritage features, stating that removal must be justified by a watershed plan, subwatershed study, Environmental Implementation Report or natural heritage system study in consultation with CVC and other relevant agencies. Section 4.6.6.21 of the Official Plan also notes that the report should demonstrate no net loss, and if possible, a net gain in natural heritage system values and ecological functions.

City of Brampton Transportation Master Plan (2015)

The Transportation Master Plan (TMP) is the City of Brampton's long-term strategy to achieve a balanced transportation network to accommodate the growth and development needs of the region until 2041. The implementation of the Huronontario-Main Light Rail Transit (LRT) and two-way, all-day GO Rail service to Bramalea GO, Brampton GO, and Mount Pleasant GO stations is an essential component to the vision of the TMP. The TMP emphasizes on shifting travel to transit and other sustainable modes of travel. The Project directly aligns with improving frequency of GO Transit through Brampton and shifting to multi-modal transportation.

The TMP is reviewed every five years to reflect updated plans, policies, and best practices utilizing the following guiding principles:

- Enhance mobility and travel options for people and goods;
- Advance multi-modal transportation equity;
- Integrate transportation and land use planning;
- Protect public health and safety;
- Improve environmental sustainability;
- Leverage technology; and
- Emphasize community engagement and collaboration.

The TMP notes that the modal share of transit trips during the PM peak period is 9%, with a goal of achieving 20% by 2040.

The TMP Update for 2022 will focus on direction from the Brampton 2040 Vision and emergency Complete Street principles. The 2040 Vision for "Transportation and Connectivity" states that the City of Brampton "will be a mosaic of safe, integrated transportation choices and new modes, contributing to civic sustainability, and emphasizing walking, cycling and transit".

Heritage Heights Secondary Plan (2022)

The City of Brampton undertook a Secondary Plan Review of the Secondary Plan Areas 52 (Huttonville North) and 53 (Mount Pleasant West). These areas are collectively referred to as the 'Heritage Heights Community' (City of Brampton, n.d.-b). The City's Planning and Development Committee endorsed a conceptual land use plan for the Heritage Heights Community in July 2020 (City of Brampton, n.d.-b). The Heritage Heights Secondary Plan was adopted by City of Brampton Council on April 6, 2022. The Project Site falls within the Heritage Heights South Precinct portion of the secondary planning area. Immediately north of the Kitchener Corridor is the Heritage Heights North Precinct. The Heritage Heights Secondary Plan consists of low to medium density residential units surrounding the Project Site. It is identified as a high potential mineral aggregate resource area.

The following Principles were created to guide future policies, design, and growth in Heritage Heights:

1. Create walkable communities for people to gather, recreate, work, and live.
2. Development should be compact and diverse to achieve walkable and affordable active neighbourhoods.
3. Implement sustainable and resilient plans, technologies, and design approaches.
4. Include arts and cultural uses that will leverage Brampton's diversity and attract investment.
5. Conserve the natural and cultural heritage of the area, creating a destination for local and regional visitors.
6. Foster a competitive environment for employment and economic development.
7. Plan for wellbeing - physical, mental, social - through the design of people-centric spaces that are safe and age-friendly.
8. Integrate and connect green and open spaces into the design of neighbourhoods while being sensitive to existing ecological systems" (City of Brampton, n.d.-b).

Section 10.7 of the Secondary Plan notes that City Transit services will be provided in accordance with *the Official Plan.* Notably, the Plan identifies Major Transit Stations Areas and states that development and improvements in the vicinity of these stations will be designed to "…promote opportunities for the design of these transit stations and infrastructure to be integrated with development and the public realm" (City of Brampton). Additionally, the Council-adopted Secondary Plan for Heritage Heights states that the area is to be planned to accommodate approximately 124,000 people and 43,000 jobs.

The Heritage Heights Secondary Plan also includes an urban boulevard where Highway 413 (described in Section 1.3.1) is proposed for the section through the Heritage Heights Secondary Plan Area (City of Brampton Motion C363-2020).

Credit Valley Conservation

Credit Valley Conservation (CVC) in cooperation with the City of Brampton is preparing the draft Heritage Heights Subwatershed Study. A portion of the Project Site includes watercourses that flow to the Credit River and as such fall under the CVC regulatory by-law, O.Reg.160/06 Regulation Of Development, Interference With Wetlands And Alterations To Shorelines and Watercourses.

1.4 Transit Project Assessment Process

To complete the specific environmental and technical studies required for this TPAP, tailored assessment areas are defined that extend beyond the Project Site. These Assessment Areas are described in greater detail in Section 3.0 of this EPR and summarized in Table 1.4-1.

Table 1.4-1: Assessment Areas by Discipline Study

Discipline	Assessment Area[1]
Air Quality	500 m buffer from the Project Site Refined based on Zone of Influence (ZOI) for sensitive receptors
Noise and Vibration	500 m buffer from the Project Site Refined based on Noise Zone of Influence (NZOI) for sensitive receptors
Natural Environment	120 m buffer from the Project Site
Tree Inventory	5 m buffer from the Project Site Refined based on Tree Protection Zone (TPZ) for impacted trees as detailed in the Arborist Report
Socio-Economic and Land Use	Local Study Area (LSA) 300 m buffer from Project Site Regional Study Area (RSA) encompasses Ward 6 in the City of Brampton that includes the Heritage Heights Secondary Plan Area, and the portion of Ward 2 in the Town of Halton Hills east of the Credit River
Cultural Heritage	A 75 m buffer from the Project Site that includes a 25 m direct impact zone, and a further 50 m indirect impact zone
Stage 1 Archaeological Assessment	20 m buffer from the Project Site A broader study area based on previous archaeological assessment work is also considered
Traffic Impact Assessment	Study Area, the Halton Subdivision track section, and adjacent road intersections

This EPR was prepared in accordance with *O. Reg. 231/08, Transit Projects and Metrolinx Undertakings* (Transit Projects Regulation). Under O. Reg. 231/08 certain types of transit projects that have predictable, and easily manageable environmental effects can follow the TPAP streamlined approach to Environmental Assessments (EA).

Figure 1-3 describes the key steps in the TPAP.

[1] Note: All project sites are inclusive of a potential laydown area, that may be utilized in possible future projects. However the additional laydown area is not part of current design.

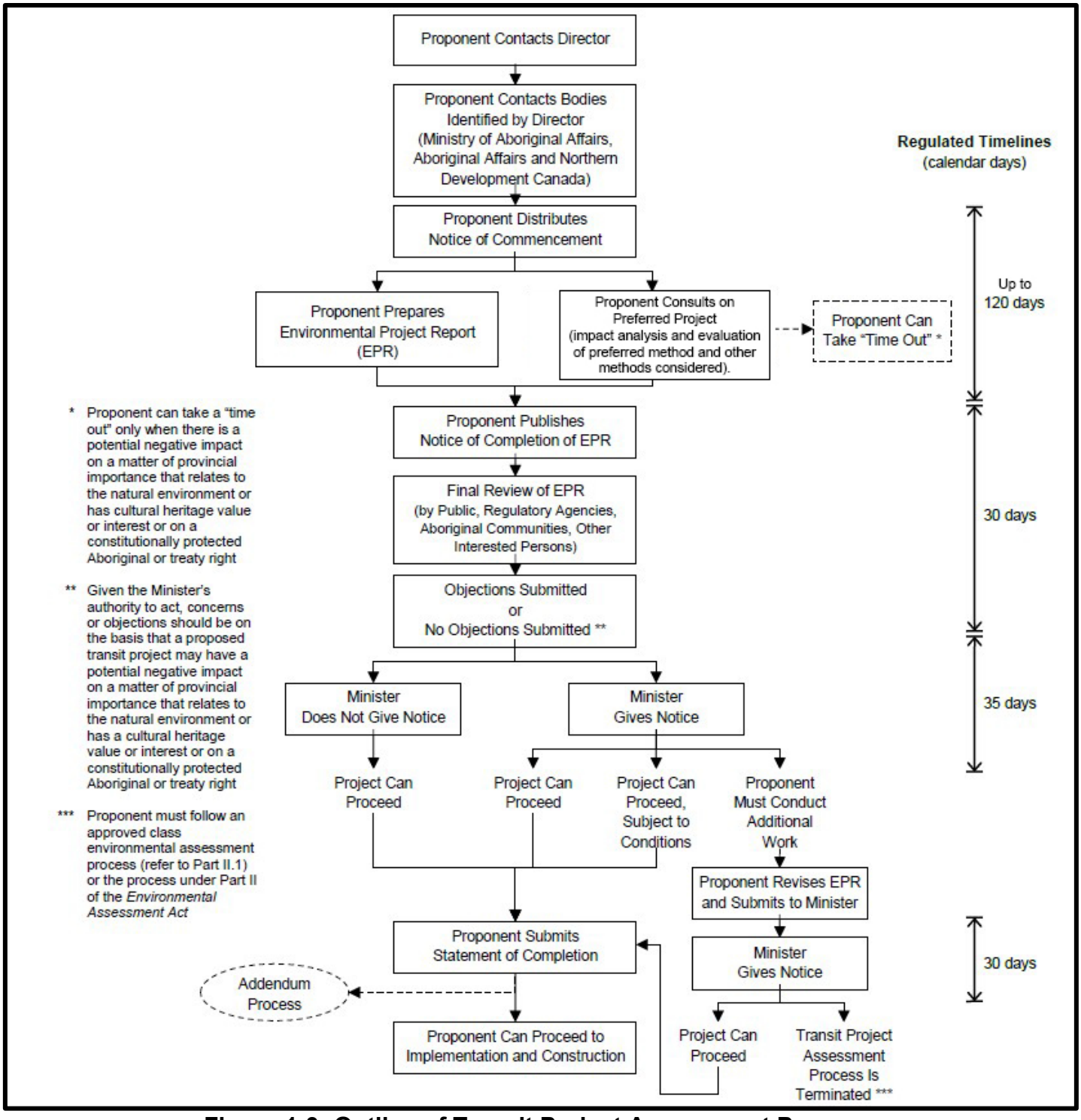


Figure 1-3: Outline of Transit Project Assessment Process

1.5 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, Metrolinx is the proponent of the Project.

1.6 EPR Report Structure

This Environmental Project Report has been organized into seven sections (Introduction and Study Process, Project Description, Existing Conditions, Impact Assessment, Climate Change Considerations, 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 1.6-1: Report Structure

Section within this EPR	Relevant Information
Section 1	A statement of the purpose of the transit project.
Section 2	A description of The Project, 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	Describes how the TPAP incorporates the MECP guidance for considering climate change in environmental assessments/TPAPs, highlights the Metrolinx broader sustainability initiatives, and provides a summary of the design considerations, measures to mitigate effects of climate change on the Project, and of the Project on climate change.
Section 6	A complete record of stakeholder consultation efforts made by Metrolinx to solicit input from the public, regulatory agencies, Indigenous communities and Nations, affected municipalities and adjacent property owners.
Section 7	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.

The following lists the studies completed to support the Project TPAP that are appended to this EPR:

- Air Quality Baseline Conditions and Impact Assessment Report.
- Noise and Vibration Baseline Conditions and Impact Assessment Report.
- Natural Environment Existing Conditions and Impact Assessment Report.
- Natural Environment Report Field Studies Addendum (Currently Under Review).
- Socio-Economic and Land Use Baseline Conditions and Impact Assessment Report.
- Cultural Heritage Report: Existing Conditions and Impact Assessment.
- Stage 1 Archaeological Assessment Report.
- Traffic and Transportation Existing Conditions and Impact Assessment Report.

2.0 Project Description

2.1 Development of the Heritage Road Layover Preferred Design

To optimize the layout and function of the site three options were developed and assessed for the Heritage Road Layover facility during conceptual design. These conceptual design options addressed: the GO Design Requirements Manual (DRM) (Metrolinx, 2020) design criteria and operational requirements, space constraints to minimize the Project Site, site conditions, and integration with the planned Kitchener Corridor trackside improvements.

2.2 Site Conditions

The Project Site is predominantly within an agricultural landscape dominated by row cropped fields. As shown in Figure 2-1, the Project Site for the Heritage Road Layover is proposed south of the Kitchener Corridor and will be located east of Winston Churchill Boulevard and west of Heritage Road.

The Study Area contains several watercourses within the CVC Regulation Area which flow intermittently throughout the year, as well as function as agricultural swales. Three of these watercourses (unnamed tributaries to the Credit River) cross the proposed Heritage Road Layover facility and a tie-in to two existing culverts crossing the CN Right of Way (ROW) is required. Further details will be explored in detailed design.

Two private properties (commercial and residential) are located south of the at-grade crossing at Winston Churchill Boulevard. The proposed access road to the layover facility will be located south of the properties to avoid any impacts.

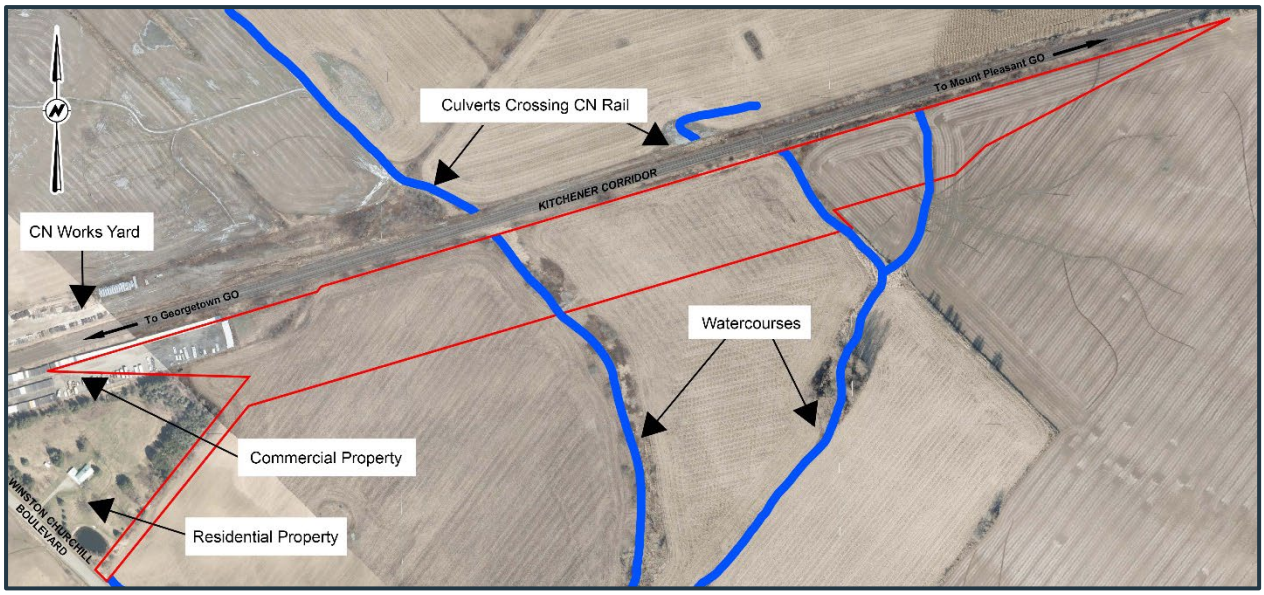


Figure 2-1: Existing Site Features

2.2.1 Heritage Road Layover Preferred Design Concept

The preferred design concept presents the following benefits:

- An optimized track layout that meets the current needs with less impact to the environment.
- The substation building is located centrally for optimized cable runs from substation to the wayside power.
- The locations of propane tank(s), water well, and other services are located close to the connection points.
- The pavement catchment area and storm water system is optimized.
- Has the lowest cost of construction.
- Protects for future work, such as west end connection, future tracks on the mainline, and electrification through the Kitchener Corridor.

2.3 Preferred Design Development

The basic Heritage Road Layover design elements include:

- Four layover tracks for maximum storage of four GO Trains (one train with two locomotives, 12 coaches or two trains with one locomotive, six coaches) on each track.
- Access road entrance from Winston Churchill Boulevard.
- Connection to Kitchener Corridor.

Figure 2-2 to Figure 2-4 show the Project renderings and site layout.

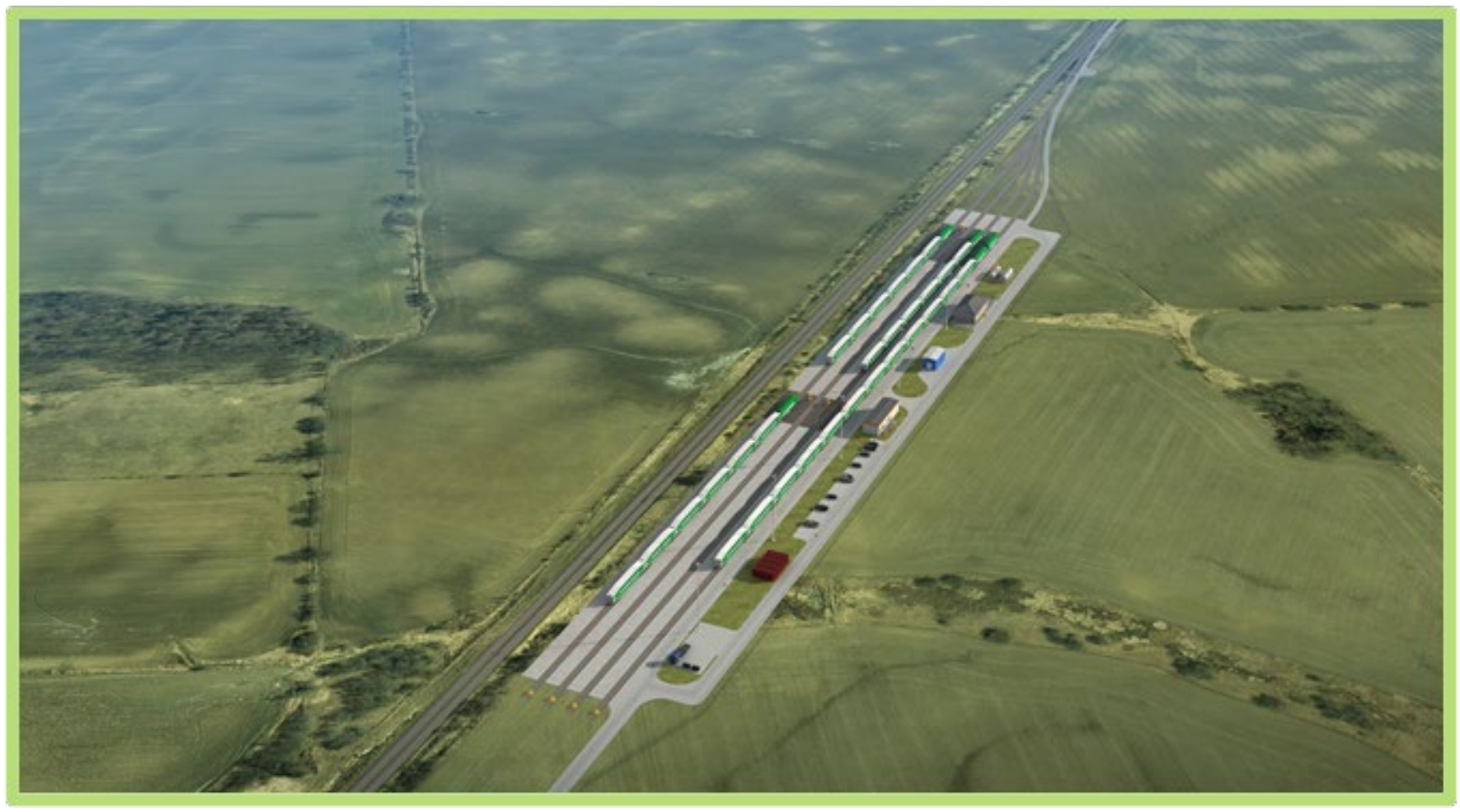
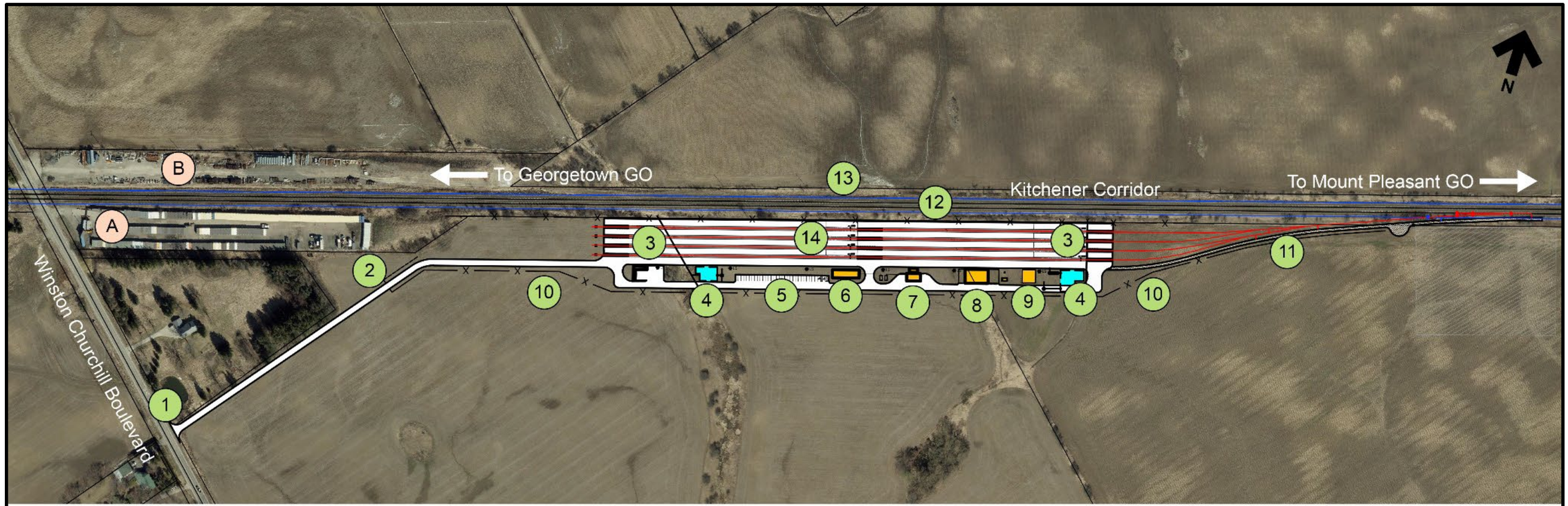


Figure 2-2: Rendering of aerial view of the proposed Project

Figure 2-3: Rendering of ground level view of the proposed Project



Legend

1 Facility Entrance
2 Gate
3 Culvert
4 Infiltration Facility
5 Parking Area
6 Crew Buildings
7 Waste Building
8 Substation
9 Concrete Pad
10 Fence
11 Maintenance Road
12 Current Mainline Tracks
13 Future Mainline Tracks
14 Layover Tracks
A U-Need Storage
B CN Works Yard

Figure 2-4: Proposed Facility Layout of the Project

The following is a summary of the design components that comprise the Heritage Road Layover facility:

Track Work

The alignments of the Tracks are designed according to GO Transit's Track Standards (GTTS), GO Transit DRM, CN Track Standards, American Railway Engineering and Maintenance-of-Way Association (AREMA), and industry best practices.

The design will be based on the following requirements:

- Four (4) tracks that each have the capacity to accommodate one (1) train consist with two (2) locomotives and twelve (12) cars or two (2) train consists with one (1) locomotive and six (6) cars
- Operating speed of 15 mph (24 km/hr) for passenger and 10 mph (16 km/hr) for freight
- Track design life of 50 years
- Rail, ties, ballast, track crossings, turnouts, and any other materials will be in accordance with GTTS

The track connection from the layover facility to the mainline track is to facilitate train movements eastbound towards Mount Pleasant GO Station. While it is possible to have trains pull out eastbound and then proceed westbound towards Georgetown GO Station, current plans do not call for crossover tracks at this location.

It is to be noted, that Metrolinx has protected for the layover facility to add a future connection to the mainline track to facilitate train movements westbound towards Georgetown GO Station. However, this westerly connection is outside the scope of the current project.

Roads

All service roads and pavement requirements are designed for heavy duty traffic grade (e.g. emergency response vehicles, fuelling trucks, material/equipment delivery trucks) to receive heavy duty grade pavement and rated for 30T vehicles.

A service roadway is designed to have a driveway entrance at Winston Churchill Boulevard and lead into the site running adjacent to the residential property at 10827 Winston Churchill Boulevard.

A two-lane access road about 230 metres (m) in length, with a ROW width of 15.0 m, and a travelled portion 7 m wide will be created from Winston Churchill Boulevard to allow personnel to enter the layover facility.

Service roads between tracks are designed for one-way traffic with widths as per the Metrolinx Design Requirements Manual for Rail Layover Facilities.

Buildings

There are 5 buildings proposed in the yard:

- Crew centre;
- Waste Disposal Building;
- Electrical Substation Building;
- Storage building (pre-fabricated building); and,
- Compressor Building.

Electrical Servicing

The incoming electrical supply from Alectra Utilities shall be 27.6kV supplied underground to the proposed electrical substation.

Preliminary estimated loads for the new train layover facility is 4,500kW / 5000kVA. This load includes for the following:

- Four (4) 12 car consist plus locomotive or eight (8) 6 car consists plus locomotives;
- Site Lighting;
- Compressed Air System;
- Crew centre;
- Waste Disposal Building; and,
- Electrical Substation Building.

It is proposed to provide a new high voltage substation consisting of two (2) 2500kVA outdoor power transformers, 27.6kV primary high voltage switchgear and dual feed 5MVA secondary switchgear with tie breaker. The new electrical substation will supply power to all wayside cabinets, exterior lighting, crew centre, waste disposal building and compressed air system. The high voltage substation will be provided with primary hydro metering to Alectra Utilities requirements.

Alectra Utilities will service the site by providing a 27.6kV primary underground feed from Winston Churchill Boulevard to the outdoor pad mounted high voltage load break switch. Two (2) customer-owned 2500kVA outdoor power transformers will be provided. The high voltage switchgear and transformers will be located beside the substation electrical room minimizing the length of the secondary feeds.

Back Up Power Generator

One (1) outdoor diesel-powered back-up emergency generator shall be provided to carry all the facility essential loads. The generator shall be located outdoors adjacent to the substation building. The generator shall be housed in an aluminium design, 14-gauge minimum, weather resistant sound attenuated enclosure. The building generator preliminary size is estimated at 500kW, 625kVA at 0.8 PF, standby rated to carry the entire building load as per DRM so the facility can operate during sustained power outages without any adverse effect on operations. The size will be finalized during the detailed design of the layover. Upon loss of normal power, the emergency power systems shall initiate the starting of the generator and the transfer of the loads. The

diesel-powered back-up emergency generator shall be independent, complete with its own fuel supply.

Lighting

Outdoor lighting shall be provided throughout the site to appropriately light roadways, walkways, building entrances, building perimeters, and parking lots. Light standards shall be high mast (30 m) for walkways between trains, 12 m at roadways and parking lots as required and 6.0 m high lighting standards used to illuminate areas beside wayside cabinets.

Lighting systems are to be designed to maximize visual comfort, efficiency, economy of installation, safety and ease of operation and maintenance. Luminaires shall be selected to be energy efficient including the use of energy efficient LED's. Light levels shall be defined for the general area and the task area. Light levels will also conform to the DRM.

2.4 Site Servicing

The following is a summary of site servicing requirements for the Project.

Water

A new water well is proposed to be installed on site. This may require a treatment system to be installed in accordance with provincial requirements to process both potable and non-potable water. It should be noted that a treatment plant may not be required considering the size and use of the buildings. The water well will only cater to the demand of the crew building, waste disposal building, and vehicle servicing when required.

Firefighting Water Reservoir

A firefighting water reservoir is to be installed, with a capacity sized in accordance with the requirement of Ontario Regulation 213/07: Fire Code and Chapter 9 of NFPA 1142, "Standard on Water Supplies for Suburban and Rural Fire Fighting".

Sanitary

Sewage from the crew centre and the waste disposal building will be collected in separate holding tanks. It is preferred that the holding tanks will be located close to each other, so if required they can be piped to a common location for removal by a sewage disposal truck.

Storm

The layover yard is underlain with a subdrain system that is connected to underground infiltration systems. The overflow is connected to existing culvert and storm ditches. For draining the drip trays, oil-water separators are installed before it is connected to infiltration system.

New culverts are proposed at two locations in the yard to maintain the existing storm water flows. Refer to Figure 2-4 for location.

Hydro

Refer to Section 2.3, electrical servicing.

Gas

There is no natural gas supply available nearby. Also, due to distance of the yard and connection points from the street, natural gas connection may not be feasible considering capital cost, demand, and life cycle costing.

As a result, propane will be used for building heating systems and the track switch heaters.

2.5 Construction Staging

The current schedule anticipates the Project receiving approval to proceed in late 2022, with construction procurement in summer 2023, and construction completion in winter 2025.

A tentative outline identifies five (5) construction stages as follows:

1. Site preparation, excavation, and grading (utilities relocation).
2. Construction of access routes and laydown areas.
3. Initial earth removal and construction of retaining wall, permanent concrete caissons with concrete lagging.
4. Final earth removal and grading.
5. Final site preparation to accommodate rail tracks.

2.6 Property Requirements

The property for the Project is shown in Figure 2-5 and totals approximately 5 hectares (50 000 m^2). The property is split into two parcels based on previously existing property boundaries and borders the Kitchener Corridor in the north. The western parcel includes an access road approximately 275 m in length and 15 m in width connecting to Winston Churchill Boulevard. At the time of this report, the design is yet to be finalized, therefore the measurements and dimensions shown in Figure 2-5 may be modified.

Only the property included in the red outlined in Figure 1-1 will be acquired by Metrolinx as part of the proposed Project. No additional property outside of the boundaries of Figure 1-1 will be acquired or controlled (permanently or temporarily to support construction) by Metrolinx. The boundaries shown in Figure 2-5 portray the Project Site as part of the conceptual design for the Heritage Road Layover.

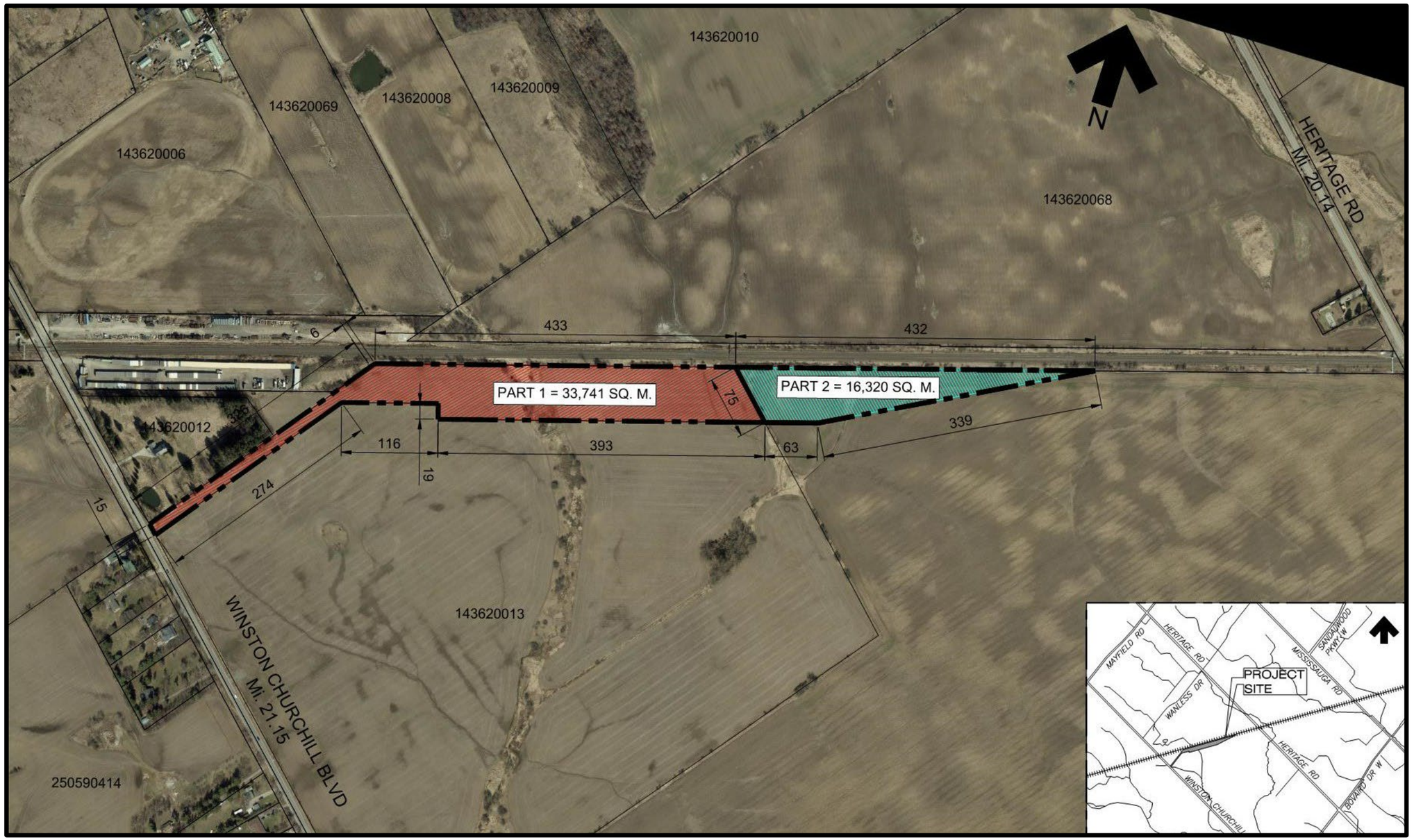


Figure 2-5: Project Property Plan

3.0 Existing Conditions

3.1 Air Quality

The Air Quality Baseline Conditions and Impact Assessment Report (Appendix A) determines the air quality impacts generated as part of construction and operation of the Heritage Road Layover and develops mitigation strategies for identified issues. The Study Area for Air Quality extends 500 m from the Project Site.

3.1.1 Methodology

The contaminants considered in the assessment include particulate matter (in PM_{10}, and $PM_{2.5}$,fractions); criteria air contaminants (nitrogen dioxide, carbon monoxide, sulphur dioxide); Volatile Organic Compounds (VOCs) in diesel combustion exhausts gases, specifically benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein and benzo(a)pyrene as a surrogate of Polycyclic Aromatic Hydrocarbons (PAHs) as required; respirable silica that may be present in concrete dust; and odorous contaminants.

Secondary particulate matter formed in the atmosphere, and ground level ozone that may be generated because of the tailpipe emissions, were not considered as part of the impact assessment. Regardless, measures to reduce air contaminant emissions will serve to control formation of these secondary pollutants.

There are a number of air quality monitoring stations operated by the Ontario MECP and as part of the Environment and Climate Change Canada's (ECCC) National Air Pollution Surveillance (NAPS) program that are located within reasonable distances of the Study Area. For this assessment, the Toronto Pearson International Airport was identified as the most appropriate weather station as it is within 18 km southeast of the Project Site.

Further details regarding the methodology of the study can be found in Appendix A.

3.1.2 Description of Baseline Conditions

The air quality local to the Study Area is influenced by various sources that include traffic related air pollution from the major local arterial roads, railroads, residential, institutional, and commercial heating, and transboundary sources. The key contaminants identified with the potential for air quality effects were PM_{10} associated with fugitive dusts, $PM_{2.5}$ as fugitive dust and equipment tailpipe emissions, and NO_2 from equipment tailpipe.

The only stations available to establish baseline air concentrations in the Study Area were located in commercial and industrialized centres such as Hamilton, Sarnia, and Burlington. Most of the baseline concentration levels for particulate matter, criteria air contaminants, and VOCs measured within the 90^{th} percentile of 24-hr averaging data measured at the specific station. Further details regarding the results of each contaminant can be found in Appendix A Table 5-2.

3.2 Noise and Vibration

The Noise and Vibration Baseline Conditions and Impact Assessment Report (Appendix B) reviews the construction and stationary sources of sound that will be produced from the Project. The Study Area encompasses the Project Site and 500 m.

3.2.1 Methodology

An assessment was conducted of the noise and vibration effects during project construction and operation by applying the Metrolinx Environmental Guide for Noise and Vibration Impact Assessment, the MECP/GO Transit Draft Protocol, January 1995, and MECP's NPC-300, throughout planning, design, and construction.

The construction phase was modelled based on the construction activities and assumed equipment that are likely to be utilized to construct the project. The operations phase was modelled based on the stationary noise and vibration sources for the layover-built scenario. Modelling for both scenarios was used to determine the effects of the project on the receptors located within the study area, which spans 500 m in all directions from the Project Site (see Table 3.2-1).

Table 3.2-1 Representative Sensitive Receptors (RSRs)

Receiver	Description	Distance (m) [1]	Pin
RSR1	10827 Winston Churchill Blvd	50	143620012
RSR2	10886 Winston Churchill Blvd	216	250590128
RSR3	2849 Wanless Drive	476	143620069
RSR4	10618 Heritage Road	260	143620018

Construction Criteria

The Metrolinx Environmental Guide (Noise and Vibration) provides construction noise limits extracted from the Construction Noise Handbook (FHWA, 2006) and Transit Noise and Vibration Impact Assessment Manual (FTA, 2018). The vibration impacts from construction are assessed against the criteria identified in MOEE/GO Protocol and City of Toronto By-Law 514-2009.

Operational Criteria

The noise impact from the operational phase is assessed by utilizing the impact rating method, which evaluates the predicted levels in terms of the Adjusted Noise Impact. The Adjusted Noise Impact is calculated based on the difference between post-project noise and pre-project noise in terms of one-hour Leq at a point of reception (POR) with a limit of 55 dBA or the ambient/background sound level.

Further details regarding the methodology of the study can be found in Appendix B.

3.2.2 Description of Existing Conditions

The Project Site and surrounding land uses remain primarily agricultural at this time. Rural residences and farmsteads are found along Winston Churchill Boulevard,

Wanless Drive and Heritage Road. The existing residential building at 10827 Winston Churchill Boulevard is immediately adjacent to the proposed layover facility. A self-storage business and a CN works yard are situated north and south of the Kitchener Corridor at Winston Churchill Boulevard.

Major sources of noise in the Study Area include rail traffic from CN freight, VIA Rail, and GO trains, and road traffic. Results of the Noise and Vibration Assessment can be found in Section 4.3.

3.3 Natural Environment

3.3.1 Methodology

A Natural Environment Report (Appendix C) was completed for the Study Area, which consists of the Project Site and 120 m radius of the surrounding area, to describe aquatic species occurrences and habitat conditions and existing wildlife and terrestrial natural habitat features and functions. The natural environment assessment was completed through a desktop review of secondary sources, including previous studies, provincial policies, and species databases. Field surveys of Ecological Land Classification and Vascular Plants, Species at Risk (SAR), and aquatic environment were completed in June and July 2022. Appendix D (Currently Under Review) of the EPR summarizes the findings from the summer 2022 field surveys. As the watercourses on the Project Site are seasonal intermittent watercourses, a spring freshet survey will be completed in spring 2023 to further assess conditions prior to construction.

In addition to the desktop review of information sources and field investigations, engagement with Indigenous communities and Nations may provide additional natural heritage knowledge and an assessment of the effects of the Project on the natural environment.

3.3.2 Description of Existing Conditions

The following sections describe the existing natural environment conditions within the Study Area (Figure 3-1).

Aquatic Environment

Three tributaries of the Credit River West Branch have been identified in the Study Area as shown in Figure 3-1. These watercourses flow intermittently throughout the year and function as agricultural swales. At the time of the preparation of the draft Heritage Heights Subwatershed Study, which includes studies carried out by Savanta in 2012,, these tributaries were assessed and identified as contributing habitat providing sources of food downstream A barrier is identified at Winston Churchill Boulevard which would prevent upstream migration of fish. Through consultation as part of the TPAP, CVC indicated that the Region of Peel is undergoing detailed design for a replacement crossing along Winston Churchill Blvd which includes considerations for fish passage and is aiming to remove any fish barrier at that crossing. Given the intermittent and ephemeral condition of the watercourses, and seasonality of fish utilization, the sensitivity should be considered low.

There is also a dug pond along the eastern watercourse, approximately 200 m south of the Kitchener Corridor, that contains permanent water. This pond lies just at the edge of the study limits and supports permanent fish habitat. A locally significant riparian wetland south of the rail line surrounds the middle watercourse. A review of background documents also identified two locally significant wetlands within the Study Area, which are shown in *Figure 3-1*.

No SAR fish or other aquatic species, or critical habitat were identified through the background review.

Terrestrial Environment

The current terrestrial environment of the Study Area is entirely rural, dominated by agricultural land with row crop fields (Figure 3-1). The area around the Project Site is slated for low-density urban development under the Heritage Heights Secondary Plan. In the Town of Halton Hills, west of Winston Churchill Boulevard the 23 lot Churchill Valley Estates subdivision is under development. Vegetation communities are generally limited within the Study Area and are associated with watercourse crossings, the Kitchener Corridor, and a residential property at the western limit of the Study Area. An isolated bluff of woodland is also present on the southwest edge of the Study Area, along the watercourse drainage in the field.

According to the Physiography of Southern Ontario by Chapman and Putnam (1984), the Study Area falls in the southern slope of the Oak Ridges Moraine. The area is morainic with mostly red and grey shale. Currently, the Study Area is near urbanized areas within the GTHA but remains rural and agricultural. Areas of the site that present the greatest opportunities for wildlife habitat based on in-season observations of breeding activity include the pond and the densest thicket areas along the Kitchener Corridor.

Wildlife

Background review was conducted only for species which had the potential to occur within the Study Area, such as those which have adapted to human-made structures and agricultural environments. Background reports suggest that a total of 33 wildlife species were documented, of which, 31 were birds, one amphibian, and one mammal. The majority of the species observed are considered common and typical to the community types found within the Study Area and a full list of fauna and flora SAR, Species of Conservation Concern, provincially rare species, and locally rare species which have habitat in the Study Area is provided in Appendix C.

Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) is defined as areas where plants, animals, and other organisms live and can find adequate amounts of food, water, shelter, and space needed to sustain their populations. Wildlife habitat is considered “significant” if it is deemed ecologically important in terms of feature, function, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System.

SWH is defined when appropriate ecosites exist, and indicator wildlife species occur, or where conditions are otherwise acceptable and can be classified. An SWH screening and field investigation did not identify any sites within the Study Area.

Species at Risk

Based on background review the following is a summary of potential SAR plant and wildlife occurrences in the Study Area. Previous records have identified the potential for Butternut, Bobolink and Eastern Meadowlark SAR to occur in the study area. Butternut is regulated by Species at Risk Act (SARA) and was identified by the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNRF) as potentially occurring in the study area. Several species of vegetation and two species of wildlife were identified in a search of the NHIC database. With the exception of Butternut (last observed in 2004), all of the species are considered historical with no records after 1982.

The Ontario Breeding Birds Atlas (OBBA) also lists three additional SAR: Grasshopper Sparrow, Eastern Wood-pewee, and Barn Swallow. Other SAR listed in background sources are the Monarch Butterfly and Snapping Turtle. Based on background review, only the Barn Swallow has a ‘High’ occurrence potential in the Study Area as they are found foraging in a range of open habitats, including agricultural fields and meadows, and primarily utilize man-made structures (buildings, bridges, culverts, etc.) for nesting. The Snapping Turtle has a ‘Moderate’ occurrence due to the presence of a dug pond on the southern end of the Study Area and a locally significant wetland situated north of the railway tracks beyond the Study Area. Several bat species: the Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat have been categorized as ‘Low’ in their probability of occurrence within the Study Area. The Grasshopper Sparrow, Eastern Wood Pewee, and Monarch Butterfly are unlikely to be found in the Study Area.

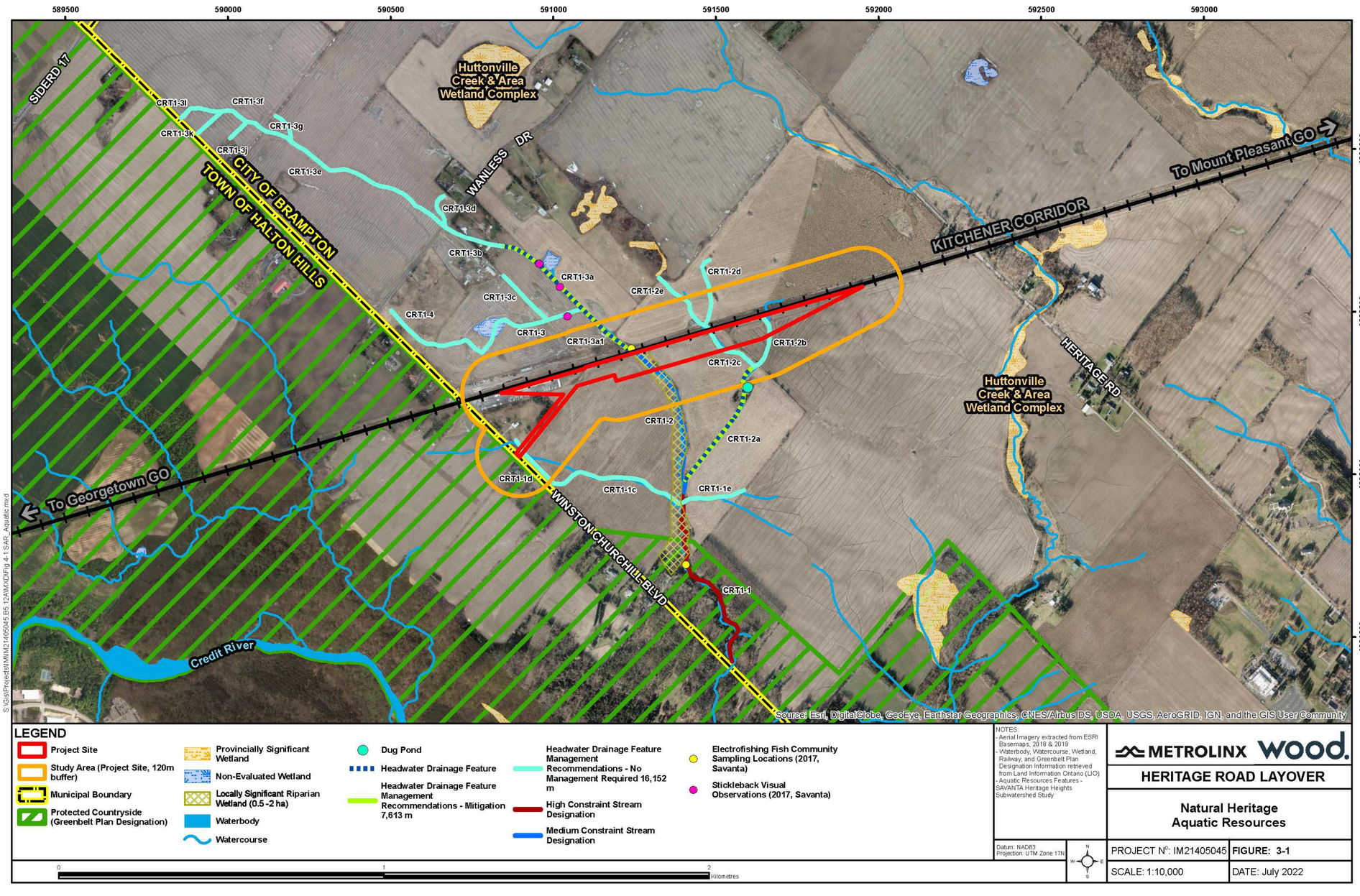


Figure 3-1: Natural Environment Characteristics Within Study Area and Surrounding Areas

Significant Natural Heritage Features

As per the *Provincial Policy Statement*, a Significant Natural Heritage Feature is an environmental area that is important for its ecological, environmental, and societal values to the natural landscapes of a specific area (PPS, 2020). Examples include significant wetlands, significant woodlands, and SAR habitat, among others.

It is to be noted that the portion of the Study Area directly west of Winston Churchill Boulevard falls under the Green Belt Plan Protected Countryside designation (Greenbelt Plan, 2007). Part of these lands are currently under construction for a 23 lot single detached residential subdivision. To the south of the Project Site, the Natural Heritage System of the Growth Plan for the Greater Golden Horseshoe occurs.

Figure 3-1 showcases the proximity of Greenbelt lands and Natural Heritage System to the Heritage Road Layover.

3.4 Tree Inventory

3.4.1 Methodology

An inventory of trees and vegetative cover was carried out within the Project Site and the Kitchener Corridor embankments. The results are available in Appendix D (Currently Under Review).

3.4.2 Description of Existing Conditions

While most of the Study Area is agricultural, there are vegetated margins at the western limits and to the north along the border with the Kitchener Corridor. A total of 136 trees were inventoried during the field assessment in June 2022. The range of species include: native American Elm, Black Walnut, Dotted Hawthorn, and White Ash, and invasive and anthropogenic species including Norway Maple, Manitoba Maple, and Apple Trees.

3.5 Socio Economic and Land Use

A *Socio-Economic and Land Use Characteristics Baseline Conditions and Impact Assessment Report* (Appendix E) was prepared to document the socio-economic conditions within the Study Area and provide an impact assessment based on construction, operation, and maintenance phases. The description of existing conditions provides a review of municipal / regional and provincial statistical data, municipal and provincial land use policy and planning documents, existing and future land uses, community services, amenities and resources and documents the current visual aesthetic characteristics.

3.5.1 Methodology

The Local Study Area (LSA) for the Project includes the Project Site and a 300 m buffer. The Regional Study Area (RSA) is larger and encompasses Ward 6 in the City of Brampton (Brampton), including the Heritage Heights Secondary Plan Area, made up of Secondary Plan Areas 52 (Huttonville North) on the area of the Project Site and 53 (Mount Pleasant West) north of the Kitchener Corridor. The RSA also encompasses a portion of Ward 2 in the Town of Halton Hills east of the Credit River. Ward 6 is located

at the western edge of Brampton and is bordered by Caledon to the north, Mississauga to the south and Georgetown to the west (City of Brampton, n.d.-a). Winston Churchill Boulevard, directly to the west of the Study Area, is the western boundary between the Town of Halton Hills and City of Brampton.

3.5.2 Description of Existing Conditions

Demographics

Brampton, located in the Region of Peel, was officially designated as a city in 1974. Brampton is made up of ten (10) wards. Located immediately north of Lester B. Pearson Airport, Brampton is home to more than 8,000 businesses, with the manufacturing industry being the largest employer. Brampton has experienced population growth since it was established as a settlement in the 1800s. In 1853, the population was 500 and as of 2011, the population has reached 656,480 residents as per Census Canada, and 680,820 residents with the undercoverage rate. Brampton is recognized as the second fastest growing city in Canada, and the 9th largest city across the country. The population for the City of Brampton has been derived from the most recent undercoverage rate utilized by Peel Region. The undercoverage rate accounts for the total population of an area beyond the population within the 2021 Statistics Canada Census results. The undercoverage population was unavailable for the Town of Halton Hills and Province of Ontario.

Recent preliminary forecasts prepared for the Region of Peel by Hemson Consulting Ltd. (September 2021) show a population for Ward 6 of 163,957 persons by 2031 (a 114.8% increase compared to 2016). This is projected to grow to 227,747 persons by 2051 (a 198.3% increase compared to 2016). Employment in Ward 6 (14,499 jobs in 2016) is projected to grow to 30,077 by 2031 and to 63,630 by 2051. Employment rates are expected to increase by approximately 13% between 2021 and 2041 in Brampton (Hemson Consulting Ltd., 2021)

The Town of Halton Hills (Halton Hills), within the Region of Halton, is made up by two (2) urban areas, Georgetown and Acton, and historic hamlets, Glen Williams, Norval, Limehouse and Hornby (Town of Halton Hills, n.d.). Halton Hills has four (4) wards and had a total population of 62,951 in 2021 (Statistics Canada, 2022). In 2016, the population of Halton Hills at 12,700 was less than Brampton Ward 6 (Region of Peel, 2021a) (Region of Peel, 2021c). Data were not available for the 2006 population of Halton Hills Ward 2 (Ashby, 2018).

The *Halton Region Official Plan* (2018) provides the projected population increase from 2006 to 2031 for Halton Region and the lower tier municipalities. An increase of 62.1% is projected for Halton Hills from 2006 to 2031 (Regional Municipality of Halton, 2018). Employment rates are expected to increase by approximately 90% in Halton Hills between 2021 and 2041 (Watson & Associates Economists LTD, 2020). This indicates the need for investment in infrastructure to support the growing economy.

The population of Brampton, reported at 656,480 in 2021 as per Census Canada, had a greater percentage increase than Halton Hills and the Province of Ontario between 2016 and 2021 (Statistics Canada, 2022).All the demographics results are derived from a 25% sample of the population, which differs from the 100% sample available with

standard Census releases. The 2016 Census was utilized for data within this report as this was the latest demographics information available at the time of writing.

Land Uses and Development Applications

Residential Uses

The LSA includes a small portion of area designated as Country Residential zoning within Halton Hills. Church Valley Estates, a 23 lot residential subdivision lying west of Winston Churchill Boulevard within Halton Hills adjacent to the Project Site is under construction.

Commercial Uses

No commercial use areas are located within the LSA with the exception of the self-storage business located at 10861 Winston Churchill Boulevard.

Mixed Uses

No mixed uses are located within the LSA.

Institutional Uses

No institutional uses are located within the LSA.

Employment Uses

No employment uses are located within the LSA.

Recreational Uses

No recreational uses are located within the LSA.

Agricultural Use

The LSA primarily consists of lands in agricultural use and open spaces. It is designated as agricultural area within the City of Brampton and Protected Countryside in Halton Hills. The City of Brampton Zoning Bylaw has the properties that make up the Project Site are zoned Agricultural.

Development Applications for Future Land Uses

An Application for Site Plan Control has been approved for 10884 Winston Churchill Boulevard, which is located immediately north of the CN Rail Tracks, for a 40 m monopole telecommunications tower for Signum Wireless Corporation.

An Official Plan Amendment was also approved for the entire northwest Brampton Urban Development Area to remove the shale resources protection policies in the official plan. The applicant was the Heritage Heights Landowners Group.

The Churchill Valley Estates submitted a Subdivision Application to the Town of Halton Hills for 10672 Winston Churchill Boulevard to create a subdivision with 23 single detached lots. This development is scheduled for completion by the summer of 2022 (Buzz Buzz Homes, 2021). This is located west of the Project across Winston Churchill Boulevard.

Heritage Heights Secondary Plan (2022)

The City of Brampton undertook a Secondary Plan Review of the Secondary Plan Areas 52 (Huttonville North) and 53 (Mount Pleasant West), collectively referred to as the 'Heritage Heights Community' (City of Brampton, n.d.-b). The Heritage Heights Secondary Plan was adopted by Brampton City Council on April 6, 2022.This secondary plan guides future policies, design, and growth within Heritage Heights to ensure walkable and accessible communities, compact development, improved employment and economic opportunities, integration of green and open spaces, and conservation of natural and cultural heritage, among other goals (City of Brampton, n.d.-b). The plan identifies importance of both local and intercity transit infrastructure creation and integration into the public realm (City of Brampton, n.d.-b).

As shown in Figure 3-2 the land use structure for the area that includes the Project Site is designated for low to medium density residential units. A portion of the Natural Heritage System links natural features north of the Kitchener Corridor to the tributary that flows under Winston Churchill Boulevard to join the Credit River just north of Norval in the Town of Halton Hills. Also shown on the figure in the vicinity of the Project Site are; stormwater management facilities, neighbourhood parks, an elementary school, and sections of the street network, including a north-south crossing of the Kitchener Corridor, immediately east of the Project Site, and west of Heritage Road.

Brampton and Halton Hills are expanding, both in terms of demographics and land development. While the region is currently rural, policies and plans showcase a move towards a more urbanized environment.

Aesthetics / Visual Character

Renderings have been prepared that show the aesthetics/visual character of the site and surrounding landscape as it exists and with the layover facility in place, see Figure 2-2 and Figure 2-3 in Section 2.3 above. The following photos (Figure 3-2 to Figure 3-5) depict the site and surrounding landscapes from publicly accessible roads. The photos showcase the rural, low-density, and agricultural characteristics of the area for the proposed Project. Very few uses are present around the Project Site, as shown through these photos and *Land Use and Development Applications* in Section 3.5.2. The aesthetics and visual characters of the layover will not impact the surrounding community due to the rural nature of the area. Figure 3.5-1 shows the self-storage facility located on Winston Churchill Boulevard, facing northeast from the road and Figure 3-3 shows fields facing east from Winston Churchill Boulevard. The CN Works Yard is located north of Study Area, and Figure 3-4 shows the yard from Winston Churchill Boulevard facing northeast. The tracks in Figure 3-5 were photographed facing west from Winston Churchill Boulevard.

Figure 3-2: Self-storage facility and track crossing at Winston Churchill Blvd.

Figure 3-3: Agricultural fields surrounding the Project Site.

Figure 3-4: CN Works Yard just north of the Project Site.

Figure 3-5: CN Rail Tracks through the Study Area.

Transportation

The Province of Ontario is currently undertaking the environmental assessment and preliminary design for the proposed Highway 413 for the GTA West Corridor. Highway 413's proposed route is through York, Peel and Halton Regions and is expected to include four (4) to six (6) lanes, on a 59 km, 400 series highway. Highway 413 is proposed to connect to Highway 400, 427, 410, 401 and 407 toll road and will include 11 interchanges at municipal roads. The proposed route is for Highway 413 is just to the east of the Project Site between Heritage Road and Mississauga Road. It is of note that the City of Brampton has proposed an urban boulevard in lieu of Highway 413 through the Heritage Heights area.

Within the LSA, there are no existing local public transit bus stops. The proposed layover will improve efficiencies and reliability of the GO Transit service, which in turn, will support the delivery of GO Expansion. GO Expansion will improve public transit across southern Ontario and increase ridership

No existing active transportation facilities are within the LSA. A boulevard multi-use trail is planned on Winston Churchill Boulevard, as per the Halton Region Active Transportation Master Plan (Halton Region, 2015). Nearby the Project between Bovaird Drive and Mayfield Road, the Region of Peel's Long Range Transportation Plan has plans for a new cycling facility.

Pedestrian counts are very low for all TIA Study Area intersections and traffic counts. The closest intersection to the Project Site (Wanless Drive and Winston Churchill Boulevard) shows zero pedestrians during the peak hours.

The LSA is currently predominantly rural, without sidewalks or pathways for pedestrians. Sidewalks are anticipated to be added within the Heritage Heights Secondary Plan Area in conjunction with future development in the area.

3.6 Cultural Heritage

The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (Appendix F) established the historical context in the area for the proposed Heritage Road Layover.

A Cultural Heritage Report will recommend further studies, as appropriate. For TPAP projects, this includes:

- Where a known or potential built heritage resource or cultural heritage landscape may be directly and adversely impacted, and where it has not yet been evaluated for Cultural Heritage Value or Interest (CHVI), completion of a Cultural Heritage Evaluation Report (CHER) is required to fully understand its CHVI and level of significance. The CHER must be completed within the TPAP.
- If a built heritage resource or cultural heritage landscape is found to be of CHVI, then a Heritage Impact Assessment (HIA) will be undertaken by a qualified person. The HIA will be completed in consultation with MTSC and the proponent as early as possible during detail design, following the TPAP.

3.6.1 Methodology

Through information gathering and fieldwork, an inventory of built heritage resources and cultural heritage landscapes was created. A preliminary impact assessment with proposed mitigation measures for the Project Site and Study Area, a 75 m buffer from the Project Site that includes a 25 m direct impact zone, and a further 50 m indirect impact zone is also included in Appendix F.

Possible direct impacts to known or potential heritage properties within the 25 m zone may include: property acquisition, land disturbance, demolition of a heritage attribute, unsympathetic alterations, alterations for access requirements, introduction of new elements, the removal or planting of trees or other natural features, a change in land use, and/or continued intensification. Within the 50 m zone, possible indirect impacts

may include: introduction of shadows, isolation, vibration damage, and/or obstruction of a significant view. Where present, these direct and indirect impacts have the potential to diminish the integrity of a heritage property.

The locations of identified built heritage resources and cultural heritage landscapes in relation to the Project Site and Study Area are depicted in Figure 3-10.

3.6.2 Description of Existing Conditions

The Study Area is located within Treaty Number 19 (Ajetance Purchase) 1818, signed by the British Government and Mississauga Nation. Presently it is acknowledged that the Study Area is situated on the Treaty Lands and Traditional Territory of the Mississaugas of the Credit First Nation and the traditional territory of the Huron-Wendat, Haudenosaunee as well as the Métis.

The Study Area is located approximately 1 km north of the Credit River. A small intermittent watercourse runs through the Study Area and connects to the Credit River just north of Norval in the Town of Halton Hills. Historically, the Credit River was of critical importance to Indigenous peoples and was the focus for traditional land use activities, such as fishing and hunting, and was also used as a travel and trade route. Natural heritage elements, such as native flora and fauna, are known to have cultural heritage significance to Indigenous peoples . The presence of the nearby Credit River indicates that the Study Area has historical land use connections to Indigenous peoples.

The Study Area is set along the Halton Subdivision portion of the Kitchener Corridor, from Winston Churchill Boulevard to Heritage Road in a generally rural setting. The east end of the Study Area terminates approximately 300 m from Heritage Road in an agricultural field. The general area is rural agricultural with low density residential structures and light industrial landscapes along the railway track and Winston Churchill Boulevard. The industrial landscapes include a storage facility situated along the south side of the railway tracks and CN owned lands along the north side of the railway tracks

To identify existing heritage protections, information gathering requests were sent to the Ministry of Tourism, Sport, and Culture (MTSC), Ontario Heritage Trust (OHT), the City of Brampton, and Region of Peel. The results indicated the presence of McNichol Cemetery on the east side of the Study Area and identification of 10827 Winston Churchill Boulevard as a potential heritage property based on a previous heritage study. On Heritage Road, outside the Study Area, the Samuel Currie Farmhouse at 10294 Heritage Road is a listed heritage property (Figure 3-6) (Brampton Maps, 2019). In total, there are three known or potential Cultural Heritage Value or Interest (CHVI) sites within the Study Area. A detailed list is provided in Appendix F.

Figure 3-6: 10294 Heritage Road.

Figure 3-6 shows a view of fields facing west from Heritage Road. The figure has the Samuel Currie Farmhouse in the distance, which is a listed heritage property located at 10294 Heritage Road.

Figure 3-7: Field in Study Area.

Figure 3-7 shows conditions of a field along the southwest limit of the Study Area where there is a proposed location of the service road connecting the Project and Winston Churchill Boulevard. The treed area also defines the southern property boundary of 10827 Winston Churchill Boulevard.

McNichol Cemetery (CHL1)

McNichol Cemetery is a small familial burial plot located on the east side of the Study Area outside the ROW and west of Heritage Road. The land on which the cemetery is situated was first owned and farmed by a Scottish pioneer named Archibald McNichol and the McNichol family used the cemetery during the mid-19th century (Wood, 2021b) (City of Brampton, 2021c). In the 1970s, the grave memorials were relocated to Alloa Cemetery and their bases were moved off the land in the mid-2000s. While there are virtually no visible traces of the cemetery left today, the remains of the buried individuals have not been removed from the property. A Stage 3 Archaeological Assessment (AA) was completed in 2017, detailed in Section 3.7.1 of this report. The cemetery is listed on the City of Brampton Heritage Register and its Heritage Designation is in process.

10827 Winston Churchill Boulevard (CHR2)

The property at 10827 Winston Churchill Boulevard is a Possible Built Heritage Resource identified in a review conducted by the City of Brampton (Project Correspondence; Brampton Heritage Planner; 2021). Several previous reports concluded that the structure is more than 40 years old and an example of a mid-19th century, two-storey, timber-frame, vernacular Georgian Style house (Unterman McPhail, 2011; ASI, 2018).

A preliminary review of historical mapping indicates that the existing residence on this property was constructed between 1954 and 1973. It is set back from the east side of Winston Churchill Boulevard with a long driveway and contains mature trees lining the portions of the road frontage and north and east property boundaries. The property is bound to the north by a light industrial storage facility obscured by trees and to the east and south by agricultural lands.

Figure 3-8: 10827 Winston Churchill Boulevard.

Figure 3-8 shows the viewpoint of 10827 Winston Churchill Boulevard, a potential heritage property, facing east.

10746 Winston Churchill Boulevard (CHR3)

The property at 10746 Winston Churchill Boulevard was identified during field review conducted in December 2021. Review of background information indicates this Victory style structure was constructed during the mid-20th century based on the historical map review and architectural style. The one-storey side gable structure is three bays across and features a front portico. It is set back considerably from the street and is lined on both sides by mature trees. The house is located on the west side of Winston Churchill Boulevard and is surrounded by houses of varying age.

Figure 3-9: 10746 Winston Churchill Boulevard.

Figure 3-9 shows 10746 Winston Churchill Boulevard west from the road. This property is a potential heritage property identified during field review.

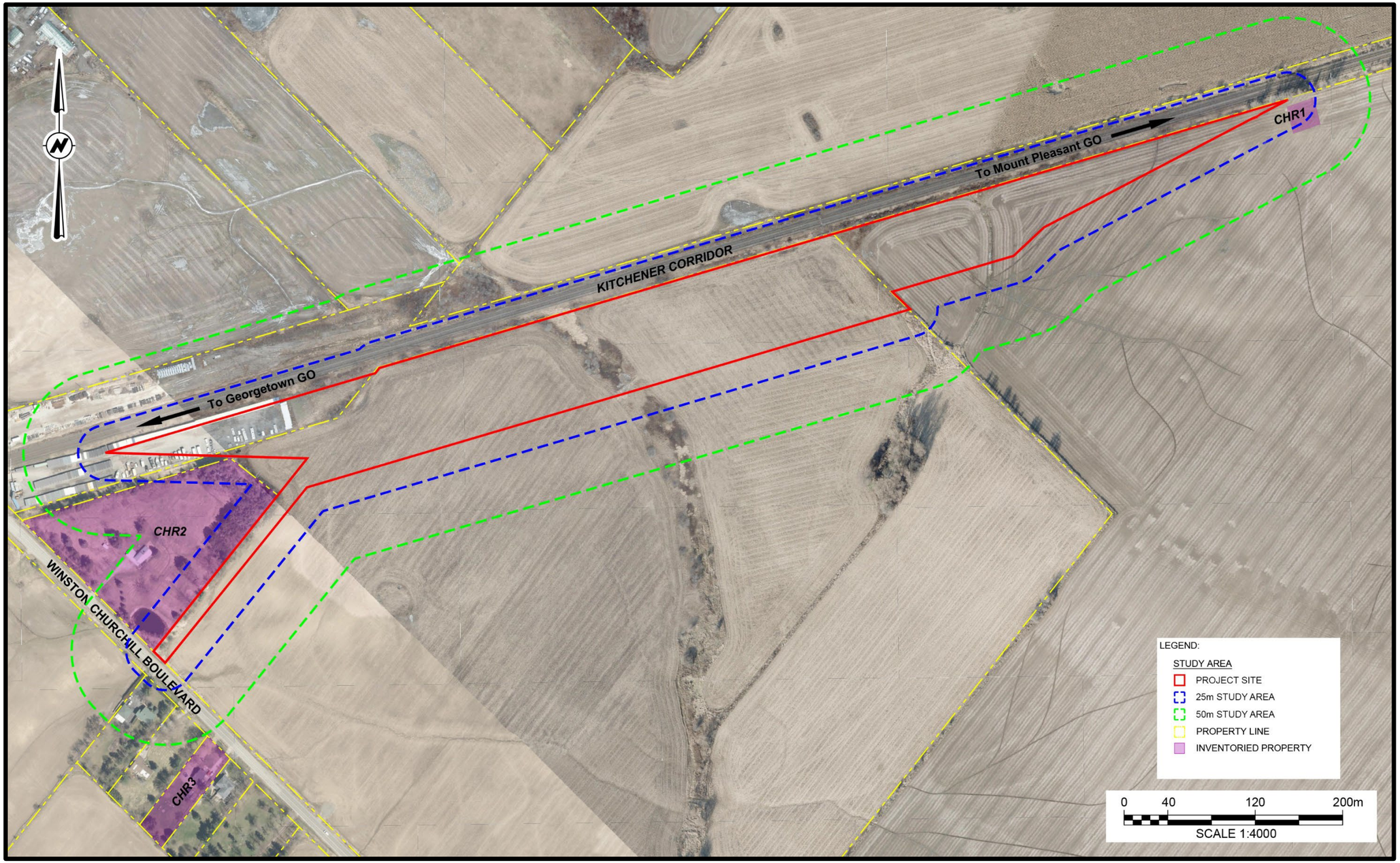


Figure 3-10: Identified Built Heritage Resources and Cultural Heritage Landscapes

3.7 Archaeology

The Stage 1 AA Report (Appendix G) established the archaeological context in the area for the proposed Heritage Road Layover.

3.7.1 Methodology

MTCS requires archaeological assessments to be completed for every land development project. There are four stages of assessments which determine the archaeological resources on the proposed development site and create plans for mitigation, however, not every stage may be applicable for a development.

For the Project, a Stage 1 AA has been completed and is available in Appendix G. The Stage 1 AA is a background review and qualitative study that systematically assesses the archaeological potential of a study area based on its land use and evidence of possible pre-contact Indigenous and historical Indigenous and early Euro-Canadian (settler) occupation. If any areas of archaeological potential are identified in Stage 1 AA, a land survey is completed with a Stage 2 AA to identify any archaeological resources within the property. Two Stage 2 AA has been previously completed within the entire Study Area for a comprehensive archaeological analysis of the area (see Section 3.7.2).

One of the most important factors influencing human land use is proximity to water. In the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), lands within 300 m of an extant or historical primary (lake, river, stream or creek) or secondary (intermittent streams and creeks, springs, marshes, and swamps) water source have potential for the presence of early Indigenous and Euro-Canadian archaeological sites. In the central and east portions of the study area are three primary water sources (permanent creeks) that flows south to empty into the Credit River (Appendix G).

The Study Area is a 20 m buffer from the Project Site, however a broader Study Area based on previous archaeological assessment work is also considered within the Stage 1 AA.

3.7.2 Description of Existing Conditions

Previous Archaeological Investigations

Previously, there were six archaeological assessments conducted within lands overlapping the Study Area and two archaeological assessments conducted within a 50 m surrounding radius. Figure 3-11 shows the location of the previous studies within the Study Area. MTCS provided information that showed 17 sites within a 1 km radius of the Study Area. Of these, one registered site is located within the Study Area and two registered sites are located within a 300 m radius of the Study Area. All three are categorized as Post-Contact, Euro-Canadian, with two being Homesteads and one being an Industrial/Homestead Site Type. Through the background review and previous archaeological assessments, all three identified sites are considered to have further CHVI. Should the Project Site construction and operations impact any of these areas, further study may be required. At this time, it is not anticipated that these sites surrounding the Study Area will be impacted by the Project.

Stage 1 AA were completed in 2005 by Archaeological Services Inc., and in 2014 and 2017 by Archeoworks. All identified the need for further assessments on lands close to

the Project Site. Figure 3-11 shows the layout of the previous AAs completed at the Project Site.

In 2014, a Stage 2 AA conducted by Archeoworks for an adjacent property (10510 Heritage Road) identified four Euro-Canadian and seven Indigenous artifact scatters. Only one was found within the Study Area but it determined to have no further CHVI and therefore not recommended for further archaeological assessment. Archeoworks also conducted a Stage 2 AA on the western portion of the Study Area in 2017, identifying 31 post-contact artifacts and 649 post-contact artifacts in two separate locations. These were both recommended for Stage 3 site-specific AA (Archeoworks, 2017b: i). There was also one Indigenous spot find in the Study Area, but this was determined to have no further CHVI.

Several studies identified the presence and CHVI of the McNichol Cemetery on the eastern side of the Study Area. Following recommendations of the Stage 2 AA for 10510 Heritage Road, Archeoworks conducted a Stage 3 AA cemetery investigation for the McNichol Cemetery and exposed five grave shafts. All of the grave shafts were covered in geotextile and backfilled, with a buffer zone of 5 m staked around the perimeter. The report recommended the cemetery be enclosed by a permanent fence at the staked boundary and that the cemetery be registered and protected from further disturbance.

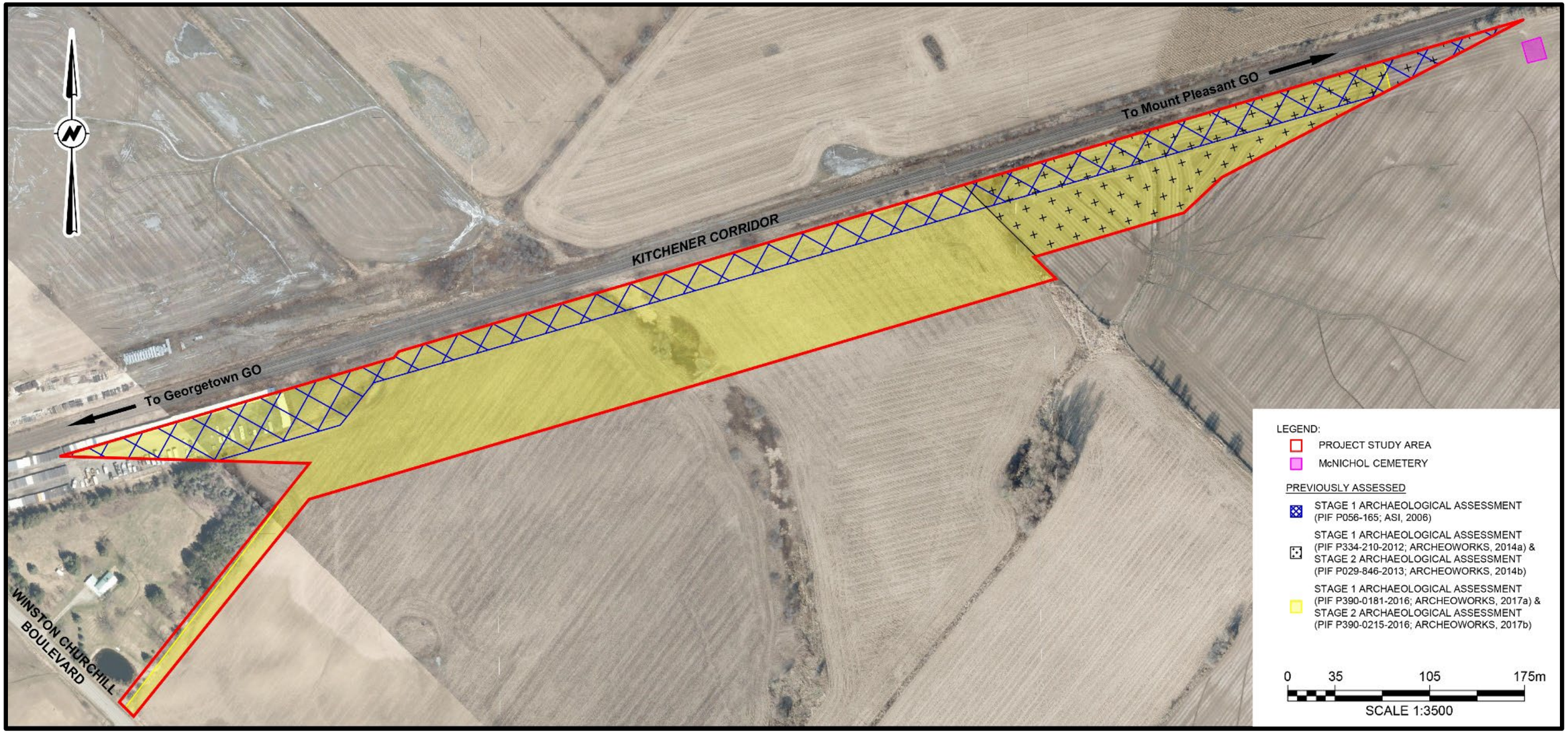


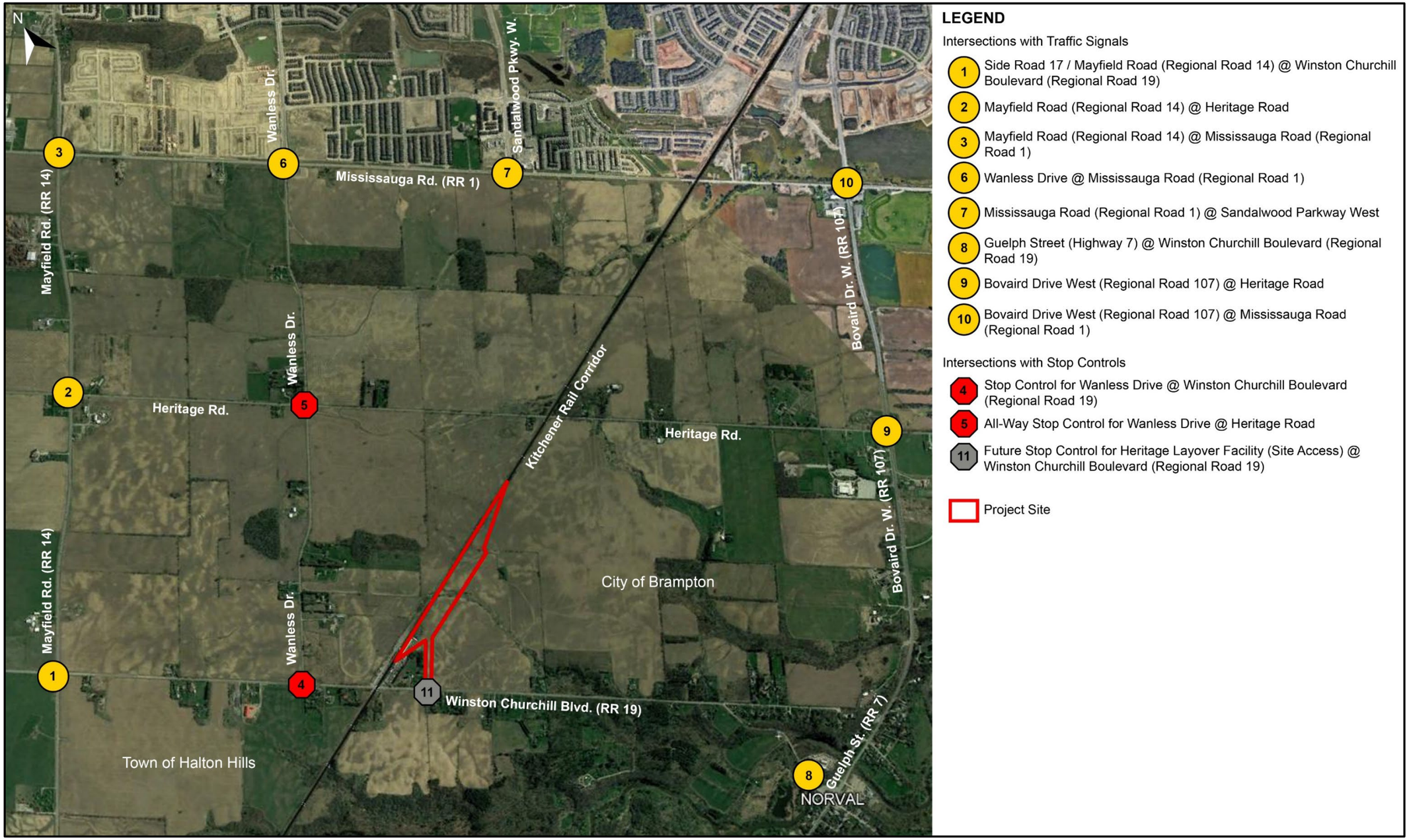
Figure 3-11: Previous Archaeological Assessments

3.8 Traffic and Transportation Infrastructure

A Traffic and Transportation Existing Conditions and Impact Assessment Report was prepared and can be found in Appendix H.

3.8.1 Methodology

Study intersections for both temporary (construction staging) and permanent traffic conditions were selected based upon identified major roads around the perimeter of the Project Site and surrounding 500 m. **Error! Reference source not found.** and Table 3.8-1 show and list the intersections within the 500 m Study Area. The Project Site is outlined in red in Figure 3-12.



LEGEND

Intersections with Traffic Signals

1. Side Road 17 / Mayfield Road (Regional Road 14) @ Winston Churchill Boulevard (Regional Road 19)
2. Mayfield Road (Regional Road 14) @ Heritage Road
3. Mayfield Road (Regional Road 14) @ Mississauga Road (Regional Road 1)
6. Wanless Drive @ Mississauga Road (Regional Road 1)
7. Mississauga Road (Regional Road 1) @ Sandalwood Parkway West
8. Guelph Street (Highway 7) @ Winston Churchill Boulevard (Regional Road 19)
9. Bovaird Drive West (Regional Road 107) @ Heritage Road
10. Bovaird Drive West (Regional Road 107) @ Mississauga Road (Regional Road 1)

Intersections with Stop Controls

4. Stop Control for Wanless Drive @ Winston Churchill Boulevard (Regional Road 19)
5. All-Way Stop Control for Wanless Drive @ Heritage Road
11. Future Stop Control for Heritage Layover Facility (Site Access) @ Winston Churchill Boulevard (Regional Road 19)

Project Site

Figure 3-12: Traffic Intersection within the Traffic and Transportation Study Area

Table 3.8-1: Road Intersections Within the Study Area

#	Intersection	Control Type
1	Side Road 17 / Mayfield Road (Regional Road 14) @ Winston Churchill Boulevard (Regional Road 19)	Traffic Signal
2	Mayfield Road (Regional Road 14) @ Heritage Road	Traffic Signal
3	Mayfield Road (Regional Road 14) @ Mississauga Road (Regional Road 1)	Traffic Signal
4	Winston Churchill Boulevard (Regional Road 19) @ Wanless Drive	Stop Control for Wanless Drive
5	Wanless Drive @ Heritage Road	All-Way stop control
6	Wanless Drive @ Mississauga Road (Regional Road 1)	Traffic Signal
7	Mississauga Road (Regional Road 1) @ Sandalwood Parkway West	Traffic Signal
8	Guelph Street (Highway 7) @ Winston Churchill Boulevard (Regional Road 19)	Traffic Signal
9	Bovaird Drive West (Regional Road 107) @ Heritage Road	Traffic Signal
10	Bovaird Drive West (Regional Road 107) @ Mississauga Road (Regional Road 1)	Traffic Signal
11	Winston Churchill Boulevard (Regional Road 19) @ Heritage Layover Facility (Site Access)	Stop Control for Site Access

There are two peak capacities during the day: AM and PM, with the time varying slightly at every intersection. Further detail is available in Table X within Appendix H. Operational traffic conditions were assessed for the following traffic and transportation horizons:

- Existing year prior to Project construction;
- During construction of the Project;
- Opening year of the Project; and
- Five (5) years after start of Project operations.

3.8.2 Description of Existing Conditions

Heritage Road is considered a City of Brampton municipal road while Winston Churchill Boulevard is a Peel regional road.

Winston Churchill Boulevard is a two-lane arterial road with a posted maximum speed limit of 60 kilometres per hour (km/hr). The road runs north-south beside the proposed Project Site access road and forms an unsignalized T-intersection to the north with Wanless Drive, with stop control on the westbound approach on Wanless Drive (see Figure 3-12). The first intersection to the south of the Project Site is the signalized intersection with Guelph Street (Highway 7). Heavy trucks are restricted from using Winston Churchill Boulevard from Steeles Avenue (about 10 km south of the Project Site) to Mayfield Road (about 1.5 km north of the Project Site) at all hours of the day.

There is a two-track level railway crossing on Winston Churchill Boulevard, with gates and flashers situated approximately 250 m north of the access road to the proposed Project. The Project Site is inaccessible by road or driveway at present.

Figure 3-13 Level Train Crossing at Winston Churchill Boulevard

Local transit does not currently provide service within the Study Area and there are no sidewalks or cycling infrastructure adjacent to the Project Site. Twelve residential driveways are found south of the Kitchener Corridor on the west side of Winston Churchill Boulevard. The entrance to 10827 Winston Churchill Boulevard is located north of the proposed access road to the Project Site, on the east side of Winston Churchill Boulevard. Some 200 m south of the proposed Project entrance is a farm field access.

The Project Site and Study Area lie within the Heritage Heights Secondary Plan area. At present, the land use is primarily agricultural and rural residential. The pending build-out of low-rise residential, subject to the Heritage Heights Secondary Plan, is considered in the assessment of future traffic conditions within the Transportation Impact Assessment report.

The Region of Peel and City of Brampton have widening plans within the timeline for the Project for Mississauga Road, Mayfield Road, Bovaird Drive, Wanless Drive, and Heritage Road in the Study Area. These widenings will relieve or reduce some of the existing operating problems and accommodate future trips to be generated by the Heritage Heights development.

The Region of Halton has completed the Norval West Bypass Transportation Corridor Improvements – Municipal Class EA Study, which addresses travel patterns and capacity constraints for the intersection of Winston Churchill Boulevard and Guelph Street. A preferred road alignment concept for a route around this intersection has been developed and is expected to be constructed in 2026. The new route will provide a Highway 7 bypass of the community of Norval for motorists not destined for the community. Details of the connection are not known at this time.

Further, Peel Region and Halton Region will be reconstructing Winston Churchill Boulevard from south of Mayfield Road to north of Guelph Street at the Credit River Bridge. This project will include pavement reconstruction, some grade corrections and construction of wider lanes (3.75 m) and paved shoulders (2.5 m).

3.9 Stormwater Management

The Study Area is situated within the South Slope physiographic region of Ontario (Chapman and Putnam, 1984:113). This region encompasses the southern slope of the Oak Ridges Moraine and includes the strip south of the Peel Plain from the Niagara Escarpment to the Trent River (Chapman and Putnam, 1984:172). The surficial geology is dominated by the Halton Till. Limestone of the Verulam and Lindsay Formations and shales of the Georgian Bay and Queenston Formations are located within this region (Chapman and Putnam, 1984:172).

Soil in the west portion of the Study Area is Chinguacousy clay loam, a Grey-Brown Podzolic with few stones, a smooth and gently sloping topography, and imperfect drainage. Over the east portion the soil is Oneida clay loam that is also a Grey-Brown Podzolic with few stones but is has a smooth, moderately sloping topography and good drainage (Hoffman & Richards, 1953).

The Project Site lies within Subcatchment Area CRT-1, as identified in the draft HHSWS, which is divided further into three drainage areas representing the westerly, central, and easterly watercourses that drain through the Project Site southwest to the Credit River. There are two culverts crossing the railway tracks into the Project Site (see Figure 2-1).

3.10 Groundwater

Based on information from previous studies, it has been noted that there is a shallow aquifer in the till overburden, and a deep aquifer in the underlying bedrock. With no municipal water supply, wells are drilled into both the shallow and deep aquifers to serve properties in the Study Area. Based on regional monitoring well results, the shallow aquifer can range between 1 – 2 m below ground surface. The depth of the groundwater will be confirmed in subsequent field studies during detailed design.

The Project Site is situated within Credit Valley Protection Area and therefore, the CTC Source Protection Plan may be applicable. The Project Manager at the CTC Source Protection Authority will be contacted to identify policies in source protection that may apply to the Heritage Road Layover Project. This will be done as part of the development of Detailed Design.

3.11 Utilities

No existing utilities are within the Project Site. However, the Northwest GTA Transmission Corridor, which is currently planned adjacent to Highway 413 will fall just outside of the 300 m Study Area. The purpose of the Northwest GTA Transmission Corridor Study is to identify an appropriate corridor of land accommodate the electricity needs of the growing population of the nearby regions.

4.0 Impact Assessment of the Preferred Design

4.1 Impact Assessment Methodology

The methodology applied to conduct the impact assessment of the project were derived from the analysis and results of technical discipline specific TPAP studies documented in the reports listed in Section 1.6, and are appended to the EPR. Issues and concerns raised by the public, stakeholders, and Indigenous communities and Nations during consultation and engagement activities were also considered and incorporated as appropriate (refer to Section 6.0 for further information on consultation).

The temporal boundaries for the effects assessment are defined based on the timing and duration of Project activities. The purpose of a temporal boundary is to identify when an environmental effect may occur in relation to specific Project phases and activities. The temporal boundaries for the EPR include the Project phases of:

- Construction: forecast to commence in the summer of 2023 and finish in winter 2025 (subject to change); and,
- Operations and Maintenance: following construction, ongoing operations at the Project Site to support future GO service on the Kitchener Corridor.

The determination of potential impacts to existing environmental conditions is based on an examination of the preferred design, construction staging and activities, and the planned operation of the layover facility with respect to train movements, and the related maintenance activities. Potential environmental effects resulting from the construction and operation of the Project were identified, analyzed, and described based on potential changes to the natural, cultural, and socio-economic, and cultural environments.

The impact assessment is based on conservative (worst case) assumptions regarding potential effects that could occur as a result of the Project. They are also based on existing environmental conditions, as outlined in Section 3.0, and information available at the time of the TPAP. The recommendations contained in this EPR will be reviewed by Metrolinx and updated as necessary during subsequent phases of the Project.

Where potential adverse impacts have been identified, mitigation measures have been recommended to limit or avoid the potential for those effects. The Project has been designed to prioritize the avoidance of adverse impacts, and mitigation measures are provided where avoidance is not feasible. Monitoring activities were also identified where warranted to evaluate effectiveness of proposed mitigation measures and provide feedback for adaptive management.

Table 4.13-1, found at the end of section 4.0, provides a summary presentation of the impact assessment findings; including potential effects from construction activities, operations, or both, mitigation measures, and monitoring activities.

4.2 Air Quality

Based on the qualitative assessment and quantitative modelling results, the key findings of the Heritage Road Layover are set out below and the full report is available in Appendix A.

4.2.1 Construction

As a conservative estimate, the potential for air quality impacts exists if the Project construction is carried out without adequate control of fugitive dust emissions (PM_{10}), however the modelled exceedances were infrequent. The more typical controlled construction scenario will not exceed over the applicable PM_{10} limits. Modelled air quality effects from Project construction activities with mitigation measures (including project impact and existing baseline air concentrations) are limited to within a 130 m Zone of Influence (ZOI). For the purposes of modelling, the construction stages are set out as follows, shown in Table 4.2-1.

Table 4.2-1 Stage of Construction for the Project

Stages of Construction	
1	Site preparation, excavation, and grading (utilities relocation)
2	Construction of access routes and laydown areas
3	Initial earth removal and construction of retaining wall, permanent concrete caissons with concrete lagging, construction of buildings and ancillary infrastructure
4	Final earth removal and grading
5	Final site preparation to accommodate rail tracks

Stage 1, the site preparation stage, was identified with the maximum emission scenario as numerous pieces of construction equipment may operate simultaneously and create the highest number of fugitive dust sources.

There are several sensitive receptors (existing residential dwellings) around the Project Site (see Figure 4-1) and efforts must be made to prevent PM_{10} exceedances at these locations during the construction phase. Sensitive receptors, as defined by the MECP include day cares, seniors' homes, schools, and residential buildings.

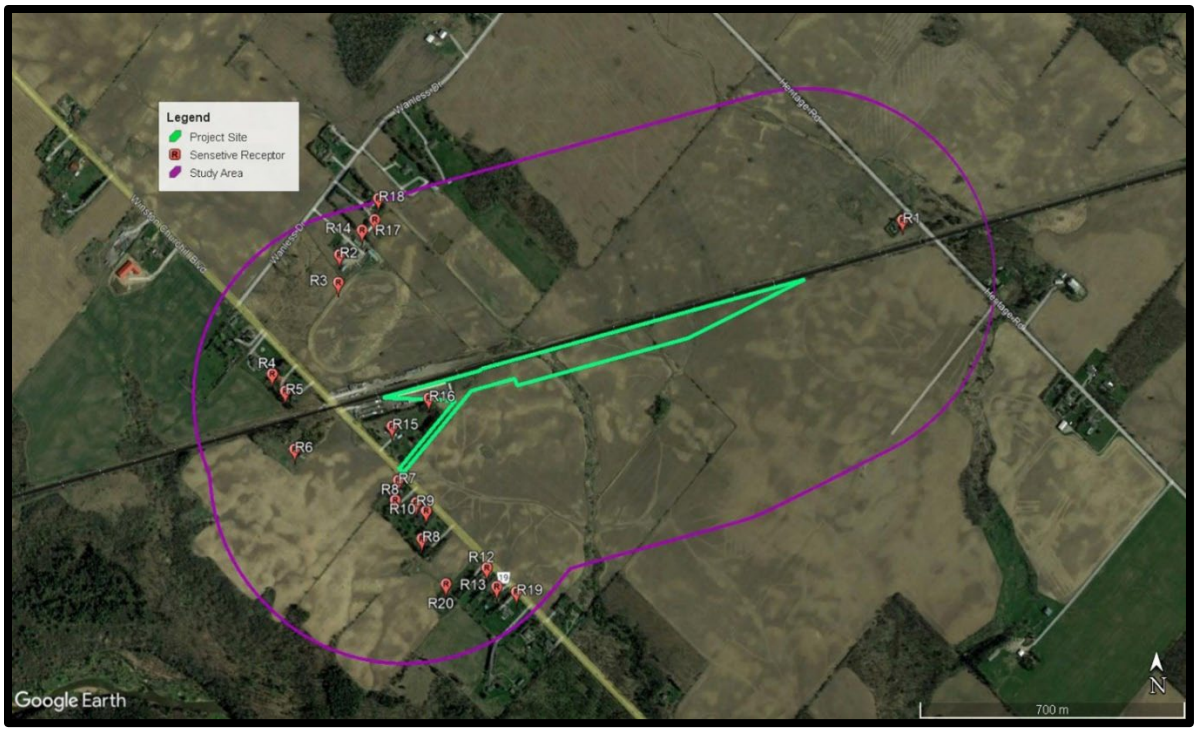


Figure 4-1 Sensitive Receptors Surrounding the Project Site

4.2.2 Operations and Maintenance

The modelling results indicate that the incremental Project effects for the target contaminants are predicted to be below the respective air quality criteria of the Ontario Ambient Air Quality Criteria (AAQC) or federal Canadian Ambient Air Quality Criteria Standards (CAAQS).

The cumulative effects of the Project and background concentration of $PM_{2.5}$ (24 hr), CO, 1-3 Butadiene, Formaldehyde, Acetaldehyde and Acrolein within the Study Area are below the AAQC or CAAQS for their respective averaging times throughout the day. Total maximum $PM_{2.5}$ concentration is exceeding the CAAQS for Annual averaging criteria (109% of the limit). These exceedances in the study area are driven by elevated background $PM_{2.5}$ concentrations mainly from traffic on Winston Churchill Boulevard and only marginally associated with Heritage Road Layover Site.

The cumulative effect of the Project and background concentration of the PM_{10}, benzene, and benzo(a)pyrene emissions within the Study Area were found to be higher than the AAQC or CAAQS as a result of high background concentration levels already present on the Project Site.

The cumulative effects (project + background concentration) of $PM_{2.5}$ is exceeded the CAAQS for Annual averaging criteria at two (2) receptors (residential, R15 – more than for 9% of criteria and R7 – more than for 2% of criteria). Both receptors are located inside the study area close to the road of Winston Churchill Boulevard.

The background total $PM_{2.5}$ concentrations are coming from traffic on Winston Churchill Boulevard, and only marginally associated with the operational emissions from the Heritage Road Layover Site.

As per Metrolinx guideline, the following set of quantitative criteria is recommended for cases when mitigation is potentially required:

- Ten or more sensitive receptors may potentially experience air quality that does not meet AAQC or CAAQS;
- The exceedance(s) amount to more than 10% of the applicable AAQC and CAAQS, and
- The total period of any potential exceedance over a typical year exceeds one month.

Based on the above criteria, mitigation of $PM_{2.5}$ emissions during the operational phase of the project is not required.

4.3 Noise and Vibration

The Project has the potential to result in temporary and permanent noise and vibration effects, including nuisance effects from the use of construction equipment, and effects related to the generation of noise and vibration from stationary equipment and the train sets during operations. See Appendix B for the full report.

4.3.1 Construction

Increases in ambient noise levels at nearby Representative Sensitive Receivers (RSRs) are expected in association with construction activities. These increases are anticipated to be temporary in nature and are considered to be a short-term nuisance to area residents. The predicted sound indicate that it is feasible to operate most construction equipment within the limits stipulated by NPC-115. The RSRs (see Table 3.2-1) were allocated at the locations predicted to have the worst-case impact from the construction and operation of the Project from each cardinal direction. Metrolinx will endeavour to abide by existing municipal noise by-laws for the duration of construction activities whenever feasible.

4.3.2 Operations and Maintenance

The noise impacts from the operations of the Project were calculated using predictive acoustic modelling and assessed against the applicable MECP NPC-300 limit. The operational assessment of the Project included all noise sources associated with layover operation such as idling of trains, train heating and ventilation equipment, electrical equipment, and hot air track blowers. Under the predictable worst-case hour scenario (LAeq-1hr), the modelled operational noise levels are predicted to meet the applicable MECP NPC-300 at the identified RSRs, during daytime and night-time periods (see Appendix B). The operational vibration impacts, related to the layover, are expected to be insignificant due to slow moving trains and the proximity of the closest sensitive receptor (a residential building) was at least 100 m away from the tracks.

4.4 Natural Environment

The Project has the potential to result in permanent and temporary effects during construction (e.g., impacts to the aquatic environment, removal of vegetation, effects on wildlife). The potential for effects due to operation will be limited with the potential for

further reduction through mitigation measures. Additional details can be found in the full report in Appendix C.

4.4.1 Construction

Aquatic Environment

Two of the three watercourses through the Study Area will be encapsulated within concrete box culverts. The addition of the new culverts will have direct and indirect impacts to the aquatic environment, specifically, the portions of watercourses CRT1-2, and CRT1-2b and CRT2-1c within the Project Site (see Figure 3-1). Through the use of appropriate mitigation, it is assumed that the works will not cause serious harm to the value of the fishery; however, further Project details (e.g. temporary and/or permanent site structures in or near water, the Project approach to construction, etc.) are required to determine the full extent of work with relation to the aquatic features within the Study Area and support any further permitting requirements, including the Fisheries Act.

BMPs and mitigation measures may be recommended as Project details become available during further detailed design phases. The construction of the Project is expected to have moderate impact on the aquatic environment. An Erosion and Sediment Control (ESC) Plan and A Spill Prevention and Response Plan will be required to limit sedimentation and pollution of storm sewer infrastructure.

Terrestrial Environment

Construction in the Project Site is likely to re-disturb areas previously disturbed by humans. The effects are considered a temporary impact as aggressive non-native invasive species are likely to repopulate once active construction is over.

Trees in the Project Site have been confirmed by a field survey. It is anticipated that any trees and vegetation occurring within the Project Site work zones will be removed. Disturbance to trees and vegetation at the edge of the site will be minimized if possible.

Wildlife

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 landscape within the Project Site precludes an abundance of wildlife and/or wildlife habitat. Wildlife potentially using the site is anticipate to be limited to those which may cross the site and general disturbance from construction (such as noise and human presence) will cause such species to avoid the area.

Where feasible, the Project Site construction zone will be surrounded by a silt (exclusion) fence within 48 hours of the commencement of construction activities to prevent wildlife from entering the site. The exclusion fencing will be examined daily and repaired as needed to ensure it functions as intended

Other temporary impacts to wildlife during construction may include increased noise and lighting in areas adjacent to the Project Site. Wildlife that has the potential to be present adjacent to active construction are species that are already acclimatized to human

activity due to existing commercial/light industry land use in the vicinity of the proposed Project. Therefore, impacts to these species from increased noise and lighting are expected to be low.

Migratory Breeding Birds and Nests

To prevent harm to nesting birds, the removal of woody vegetation (e.g. trees and shrubs) should be conducted outside of the typical bird nesting period between April 1 and August 31. These timing constraints should not be perceived as absolutes as this period represents the core breeding period and some species may nest in March and September. Ultimately, the objective from a compliance perspective is to not circumvent the MBCA and its regulations. Due diligence measures should be implemented and documented for any nest searching efforts, including record control, to ensure compliance with the MBCA.

For activities (including vegetation removal) that must occur during bird nesting season, surveys to identify nesting activity should be completed by an experienced avian biologist no more than 48 hours of scheduled work activities. The avian biologist conducting nest sweeps must be able to identify birds by species and be knowledgeable of nesting seasons and activities for appropriate species. Due to the uncertainty that lies with nest sweeps during construction, especially during leaf-on conditions, it is recommended that all vegetation clearing activities occur outside the bird nesting window.

Should habit removal occur outside the nesting period there are no impacts anticipated. Should habitat removal occur during bird nesting season the impacts of construction on breeding and nesting birds are considered to be low.

In the event that bird nests protected under the MBCA, FWCA, or ESA are encountered during construction, work must stop in the vicinity of the sighting until further direction is provided. These species and their nests must not be disturbed, tormented, injured, destroyed, and/or separated from eggs, hatchlings, or chicks in any way. A protective buffer area should be established around the nest in consultation with a qualified avian biologist, as well as the MNRF, MECP, and/or Canadian Wildlife Service (CWS). Nest surveys should only be completed in simple habitats such as singular trees or a small and well-defined area. Complex habitats such as vegetation communities with layers and dense foliage reduce the certainty of capturing all potential breeding.

Species at Risk

The Project Site is narrow and restricted to the corridor or exceptionally disturbed areas. In the SAR screening for the Study Area, it was found the potential for Butternut, Barn Swallow, Snapping Turtle was moderate to high whereas all other species were identified as low to none and as such, impacts are not anticipated. SAR Habitat is limited but if occurrences of SAR are noted, impacts will have to be registered and mitigated accordingly.

Snapping Turtle is listed as Special Concern and therefore would receive habitat protection under SWH if individual use is documented. The construction impacts on SAR are considered to be low.

Significant Wildlife Habitat

From a review of previous studies, no Significant Wildlife Habitat has been delineated within the Project Site. Most of the confirmed and candidate SWH is located outside the Project Site *(see Figure 3-1)*. Impacts on SWH as a result of construction are assumed to be low.

4.4.2 Operations and Maintenance

Aquatic Environment

It is unlikely once the watercourses are altered that negative effects will occur due to operation, therefore, the impact of operations is expected to be low.

Winter snow removal and salt use at the Project Site have the potential to impact the watercourses in the Study Area. At a minimum, a Salt Management Plan should be prepared, and snow clearing operations should be carried out in a manner so that snow is stored as far away as possible from any watercourses. BMPs should be used as guidelines to protect these features, including the following examples:

- Government of Canada - Code of practice: Road salts environmental management (https://www.canada.ca/en/environment-climate-change/services/pollutants/road-salts/code-practice-environmental-management.html)
- Transportation Association of Canada – Salt Management Plans (https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-1.pdf)
- MOE Guidelines on Snow Disposal and De-icing Operations in Ontario

As potential spills from maintenance activities could impact the watercourses, the following mitigation measures should be implemented:

Operate, store, and maintain equipment, vehicles, and associated materials in a manner that prevents the entry of any deleterious substance from entering the natural environment.

Implement drip pans under equipment (e.g. generators, pumps, etc.) in operation within the work areas.

Any refueling should be undertaken at least 30 m from any watercourse and any other surface drainage feature.

Terrestrial Environment

It is not anticipated that herbaceous vegetation established post-construction will be negatively affected by the Project during operations.

Wildlife

Structures such as new culverts and perimeter fencing may create a barrier to wildlife movement. Wildlife that has the potential to be present adjacent to the Project Site are species that are already acclimatized to human activity and impacts to these species from increased noise and lighting are expected to be low.

Migratory Breeding Birds and Nests

It is not expected that the MBCA will be contravened during operations. However, if any migratory breeding birds and/or nests are identified during operations and if removal is required, this will be completed in accordance with applicable permits, BMPs and timing window restrictions.

Species at Risk

It is not anticipated that SAR will be affected by post-construction. Barn Swallow may find areas to nest on new structures. If occurrences of Barn Swallow are noted, impacts will have to be registered and mitigated accordingly.

Significant Wildlife Habitat

From a review of previous studies, no Significant Wildlife Habitat has been delineated within the Project Site. If following field investigations these findings change, an addendum will be appended to the EPR to address impacts, mitigation and monitoring.

4.5 Vegetation Management

4.5.1 Construction

The Project Site is narrow and restricted to the areas immediately south of the Kitchener Corridor and is exceptionally disturbed areas due to agriculture. Disturbed areas appear to be entirely a result of anthropogenic disturbances and aggressive non-native invasive species. Construction in the Project Site is likely to re-disturb these areas. The effects are considered a temporary impact as aggressive non-native invasive species are likely to repopulate once active construction is over.

Any trees that occur within the Project Site will likely be removed or otherwise impacted. The impacts of construction are expected to be low based on the present conditions of the Project Site.

During site preparation the Project Site will be cleared and grubbed to allow for site grading so that the storage tracks, internal roads, and maintenance buildings can be constructed. In addition to the on-site vegetation removal, there is potential for edge effects to trees and vegetation along the property boundaries with 10827 Winston Churchill Boulevard, the self-storage facility, and the Kitchener Corridor.

At this time, given the largely open agricultural nature of the Project Site, and the distance of the limits of the construction work zone from adjacent treed property, it is predicted that impacts will be mostly limited to the direct removal of trees and vegetation in the watercourse areas tied to culvert installation under the Project Site.

4.5.2 Operations and Management

Any herbaceous vegetation established post-construction is not anticipated to be negatively impacted by the Project during operations, therefore there are no impacts from operations.

4.6 Socio Economic and Land Use

The Project will impact the properties that Metrolinx will be acquiring to construct the Project Site and has potential to result in temporary and permanent socio-economic

effects to surrounding properties, including construction related nuisance effects and permanent visual and aesthetic effects. See Appendix E for the full Socio-Economic and Land Use Baseline Conditions and Impact Assessment Report.

4.6.1 Construction

Planning Policy Context

The Project will be constructed within the Heritage Heights Secondary Plan, Heritage heights South Precinct area in the City of Brampton. The central portion within the Project Site is designated in the Land Use Structure schedule as Natural Heritage System intended to link natural features north of the Kitchener Corridor to the tributary that flows under Winston Churchill Boulevard to join the Credit River. Construction of the layover will result in a partial loss of this area designated as Natural Heritage System within the Project Site. Metrolinx will work with the Treaty/Rights Holders, CVC, and the City during detailed design to identify appropriate measures for any partial loss of areas designated as part of the Natural Heritage System.

Land Use

The Project will result in permanent changes in land use for properties within the Project Site through permanent property acquisition. The Project may result in temporary changes in land use, property ownership and nuisance effects from construction of the Project. Emissions from fuel combustion and fugitive dust during construction activities could temporarily decrease air quality. The vibration levels are predicted to meet the applicable limits during all construction stages.

10827 Winston Churchill Boulevard (PIN 143620012), a residential rural property, is adjacent to the layover and will potentially be affected by temporary nuisance effects from increased noise, dust and vibration during construction.

Aesthetic / Visual

It is expected that during construction, there will be temporary nuisance effects from increased dust that may have aesthetic effects on nearby residences. Temporary visual effects may also be caused by construction activities and components including temporary storage sites for equipment, staging / laydown areas and stockpiling of materials. Removal of vegetation may change the views from residential properties in the area. Construction activities may be visible from residential properties and roadways, which will temporarily alter the nature of viewscapes.

It is expected that during construction, there will be temporary nuisance effects from increased lighting, required for construction activities that may have an effect on nearby residences.

Nuisance Effects

Short term nuisance effects such as construction noise, vibration and dust may impact the directly adjacent properties. See sections 4.2 Air Quality, 4.3 Noise and Vibration, and 4.9 Traffic and Transportation Infrastructure for further discussion.

Transportation

There is the potential for temporary road or lane closures during construction. See section 4.9 Traffic and Transportation Infrastructure for further details.

4.6.2 Operations and Maintenance

Planning Policy Context

The Project is consistent with relevant provincial and municipal land use policies, which prioritize development in transit corridors to support future use of transit. The Project, when completed, will allow for enhanced connectivity between growth centres through improvements to the frequency and reliability of the GO network as part of the overall Kitchener Corridor.

Land Use

Current land use will be impacted due to the loss of agricultural land and possible future development, which in the vicinity of the proposed Project, consists of low-medium density residential housing, as per the Heritage Heights Secondary Plan (2022).

10827 Winston Churchill Boulevard (PIN 143620012), a residential rural property, is adjacent to the layover will potentially be affected by operation. The operational vibration impacts, related to the layover, are expected to be insignificant due to slow moving trains and the proximity of 10827 Winston Churchill Boulevard (PIN 143620012) being at least 100 m away from the tracks. Increase in volumes of train and vehicular traffic may decrease air quality but are anticipated to remain within the MECP allowable air quality limits.

Aesthetic / Visual

During the operation phase, the storage and maintenance of trains at the layover facility will impact viewscapes.

Outdoor lighting shall be provided throughout the site to appropriately light: roadways, walkways, building entrances, building perimeters, and parking lots. Lighting systems are to be designed to maximize visual comfort, efficiency, economy of installation, safety and ease of operation and maintenance. Luminaires shall be selected to be energy efficient including the use of energy efficient LEDs. Light levels shall be defined for the general area and the task area. Light levels to conform to the DRM. All lighting will be connected to the emergency power system.

Nuisance Effects

There is potential for nuisance effects related to operations and maintenance, as addressed in sections 4.2 Air Quality, 4.3 Noise and Vibration, and 4.9 Traffic and Transportation Infrastructure.

10827 Winston Churchill Boulevard (PIN 143620012), a residential rural property, is adjacent to the layover will potentially be affected by operations due to vehicular movement on the proposed layover access road adjacent to the property.

Transportation

There may be minor increased traffic levels on Winston Churchill Boulevard due to maintenance and operations crews entering through the access road. See section 4.9 Traffic and Transportation Infrastructure for further details.

4.7 Cultural Heritage

A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was completed to provide an inventory of existing heritage conditions. See Appendix F for the full report.

4.7.1 Construction

A preliminary impact assessment was completed to evaluate potential impacts to three (3) identified cultural heritage resources (CHR), one (1) known cultural heritage landscape and two (2) potential built heritage resources, within the 50 m Cultural Heritage Study Area. No direct impacts to CHR-1, CHR-2, or CHR-3 are anticipated as a result of construction. Indirect impacts are anticipated to CHR-2 due to the construction of the access road to the Project as the road is adjacent to the property limit of CHR-2.

4.7.2 Operations and Maintenance

There is a potential for indirect effects to CHR-2 to continue during ongoing operations due to vehicular access on the adjacent layover access road and proximity of the layover to the property limits. No direct adverse impacts are expected.

4.8 Archaeology

4.8.1 Construction

The findings of the Stage 1 AA indicate that there are 3 areas within 300m of the Project Site with archaeological potential. Stage 2 AA were previously completed (Archeoworks, 2017a and b) outside of these Project activities, which were reviewed as part of the Stage 1 AA for this EPR, identified the need for a Stage 3 site-specific AA.

The Stage 1 AA report can be found in Appendix G.

A Stage 3 AA for the Project Site will be undertaken prior to construction to confirm the presence of archaeological resources and to recommend appropriate mitigation if resources are identified. The Stage 3 AA will be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy (if required). No construction activities shall take place within the Study Area prior to the MTCS Archaeology Program Unit confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

4.8.2 Operations and Maintenance

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

4.9 Traffic and Transportation Infrastructure

4.9.1 Construction

Construction activities are anticipated to commence in 2023 and finish in winter 2025, but this timeline may be subject to change. Road traffic effects during construction are expected to be minimal given the predominately rural location of the Project Site and the forecast background traffic levels. Northbound queues at the railway level crossing on Winston Churchill Boulevard may occasionally stretch back to the access road entrance. There may be infrequent temporary lane closures during construction of the access road and site preparation, and to offload construction equipment and materials.

Due to physical constraints at the intersection of Highway 7 and Winston Churchill Boulevard in the Norval Hamlet, along with year-round load restrictions, heavy trucks requiring access to Winston Churchill Boulevard will travel south from Mayfield Road. Furthermore, verification of current goods movement routes in Peel Region is required at the time of construction.

Construction traffic is expected to access the site during off-peak periods, resulting in negligible impact during peak hours. Ontario Traffic Manual - Book 7 - Temporary Conditions will be adhered to during the construction process to allow safe accommodation for drivers, pedestrians and cyclists, and for rail traffic. The Region of Peel, emergency services and school boards for the City of Brampton and Region of Peel, as well as residents in the surrounding areas will be notified of any short term closures to Winston Churchill Boulevard.

There is no current or planned local transit services operating on Winston Churchill Boulevard or Heritage Road. As such, construction activities are not anticipated to affect local transit routes.

There are five (5) construction stages expected as described in 4.2.1. Construction traffic volume estimates are expected to be refined in later planning stages but are estimated at this point to be less than 20 trucks per day. Construction shifts would start and end outside of the peak hours for road traffic, resulting in minimal impact on traffic movements along Winston Churchill Boulevard during peak hours. At this time, except for short term lane closures of less than a day that may be required to facilitate large trucks entering and exiting the site, construction related road closures are not expected.

The Region of Peel is planning a reconstruction of Winston Churchill Boulevard from south of Mayfield Road to north of the Credit River Bridge, scheduled in Spring 2024 with a completion in December 2025. Coordination of the construction schedule for the Heritage Road Layover and for the reconstruction of Winston Churchill is recommended to reduce any impacts to the surrounding communities during construction.

Along Winston Churchill Boulevard, pedestrian use is largely limited to local residents, and the road is not a signed cycling route with no sidewalks or cycling infrastructure in place. Therefore, construction activities are not anticipated to affect local pedestrian or cyclist access in the vicinity of the Project Site.

4.9.2 Operations and Maintenance

When in operation the Project is anticipated to have minimal effects on road traffic.

The Region of Peel and City of Brampton have widening plans within the timeline for the Project for Mississauga Road, Mayfield Road, Bovaird Drive, Wanless Drive, and Heritage Road surrounding the Project Site. These widenings will relieve or reduce some of the existing operating problems and accommodate future trips to be generated by the Heritage Heights development.

Vehicle trips to and from the Heritage Road Layover will be relatively low, with 20 or fewer total (including inbound and outbound) trips during each of the weekday morning and weekday afternoon peak hours. The facility's operation will have a negligible impact on the road network. The access will operate acceptably with single lane approaches.

There is no current or planned local transit services operating on Winston Churchill Boulevard or Heritage Road. Should local transit service be implemented, operation of the Heritage Road Layover will have no effect.

Halton Region has a planned multi-use trail on Winston Churchill Boulevard, and the Region of Peel's Long Range Transportation Plan calls for a new cycling facility on Winston Churchill Boulevard between Bovaird Drive and Mayfield Road. With these active transportation facilities installed on Winston Churchill Boulevard, the layover facility effects on pedestrian and cycling use will be as a point of potential user conflict. However, traffic levels in and out of the Project are expected to be minimal.

4.10 Stormwater Management

The Project has the potential to affect changes to stormwater runoff quantity; to increase peak flows, effect storm drainage systems and cause erosion in receiving watercourses. There is also the potential to affect changes to stormwater runoff quality; to increase sediment and pollutant loading, and effects to water quality.

4.10.1 Construction

To construct the layover facility, the Project Site needs to be graded to accommodate the storage tracks and buildings. Existing stormwater flows coming from the two culverts under the CN tracks located at the north end of the Project Site, and the agricultural lands on the Project Site will be redirected to new culverts through a series of subdrains, oil grit separators, and infiltration facilities. The new culverts will outlet to the existing watercourse immediately downstream of the Project Site.

4.10.2 Operations and Maintenance

Future operation of the Heritage Road Layover is not likely to affect the flow of stormwater within or beyond the Study Area, as the detailed design criteria will address the regulatory flow and quality requirements.

4.11 Groundwater

The Project has potential to affect both the quantity and quality of groundwater conditions. These effects relate potentially to both natural systems, and to domestic supply and water taking for irrigation and livestock.

Development at the Site must consider these sensitive areas and their associated policies, particularly with regards to maintaining pre-development groundwater recharge

function under the post-development condition. A water balance will be completed as part of a separate report, which will assist in assessing this groundwater recharge issue.

4.11.1 Construction

Construction dewatering has the potential to negatively affect water well quality and quantity depending on the location and condition of the private wells identified for this Project. The requirement for and extent of construction dewatering for the Project will be confirmed through detailed design and the completion of geotechnical investigations. However, groundwater drawdown is not anticipated to move beyond the Project Site and anticipated to be of relatively short duration.

The need for, and extent of, private well monitoring during construction should be confirmed as part of final design, once dewatering requirements, proposed construction activity and potential ZOI are finalized.

During construction there is potential for surface water runoff to infiltrate the ground and introduce pollutants that may migrate downward to contaminate groundwater. There is also the potential for spills to occur, particularly with refueling operations for construction equipment.

4.11.2 Operations and Maintenance

The addition of impermeable surfaces (e.g., pavement) on the site will reduce water infiltration into the ground and has the potential to affect the site water balance and groundwater recharge.

During operations, there is potential for surface water runoff to infiltrate the ground and introduce pollutants that may migrate downward to contaminate groundwater. There is also the potential for spills to occur, particularly with refueling operations for the on-site back-up power diesel generator, and the trains.

4.12 Utilities

4.12.1 Construction

No existing utilities (storm sewers, sanitary sewers, watermain, hydro and communication) are within the Project Site. Thus, there are no projected impacts during construction.

4.12.2 Operations and Maintenance

No existing utilities (storm sewers, sanitary sewers, watermain, hydro and communication) are within the Project Site and as such, there are no projected impacts during operation.

To provide hydro for the Project during operations, Alectra Utilities shall supply incoming electrical supply through an underground feed from Winston Churchill Boulevard to the proposed electrical substation. The utilities are to be constructed with enough capacity to ensure no issue of supplying power to the Heritage Road Layover, thus no impacts are anticipated.

4.13 Impact Assessment, Mitigation Measures and Monitoring Summary

Table 4.13-1 summarizes the effects, mitigation measures and proposed monitoring for the various components of the environment described in the previous sections of the EPR. A potential effect is denoted by a "●" and if no potential effects are anticipated, it is denoted with a "-".The intent of this table is to provide a summary of those commitments and responsibility of third parties where Metrolinx determines applicability. These are recommendations that will be confirmed as Project planning advances.

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

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Air Quality					
Air Quality	•	–	Emissions from fuel combustion and fugitive dust during construction activities could temporarily decrease air quality.	Dust prevention and control methodologies may include, but are not limited to: • Regulate mobile equipment travelling speeds inside the construction area to prevent excessive dust generation. • Ensure proper maintenance of equipment and vehicles operating in work areas. • Proper planning of construction phases and effective use of construction equipment to reduce dust. • Minimize the size of active areas on storage piles. • Operators should use due diligence during material loading, unloading and transferring activities to avoid excessive dust generation. • Drop heights should be minimized as much as practicable. • Development and implementation of an Air Quality Management Plan for the construction phase. • Wetting or covering of open areas, unpaved roads, or material storage piles that may emit dust. • Usage of non-chemical dust suppressant to reduce fugitive dust emissions from temporary unpaved roads or parking lots. • Stabilization of construction access and roadways to reduce the tracking of construction sediment (mud and soil) onto public roads by construction equipment. • Regular sweeping of vehicle trackout on public roads. • Use of temporary barriers to prevent soil erosion and control windspeed for locations where dust could potentially be generated.	• Air monitoring for PM_{10} along the Project Site perimeter, with particular emphasis on the ZOI, will provide assurance that fugitive dust sources are being adequately controlled and the potential for off-site effects are minimized. • Construction activities will be monitored by a qualified Environmental Inspector.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				• Introduction of a no-idling policy to control mobile equipment and other vehicle emissions where applicable.	
Air Quality	–	•	Increase in volumes of train and vehicular traffic may decrease air quality but are anticipated to remain within MECP allowable air quality limits.	• No mitigation measures required.	• No monitoring activities are required.
Noise and Vibration					
	•	–	The predicted sound modelling indicate that it is feasible to operate most construction equipment within MECP limits. The vibration levels are predicted to meet the applicable limits during all construction stages.	The following standard noise mitigation measures are recommended noise management practices to reduce construction noise effects: • Major construction activities scheduled during daytime hours. • Noise mitigation measures (e.g., muffler systems) will be installed on construction equipment and properly maintained. • Where possible, construction equipment will be turned off when not in use (e.g., a no idling policy). • Vehicles and equipment should be routinely maintained and serviced for proper operation. • In case of a complaint received during construction, Metrolinx will investigate and take appropriate action to manage the issue responsibly. • Due to the proximity of the construction footprint to surrounding sensitive receptors, further recommendations for mitigation of construction vibration include: • Operate vibration-generating equipment as far from sensitive receptors as possible. • Schedule vibration-generating activities so that they do not occur at the same time. • Avoid use of impact pile-drivers and vibratory rollers near sensitive areas.	• Monitor noise where it is predicted 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 regular 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			

				• Schedule major construction activities to take place during daytime hours, where possible.
				
				Prior to commencement of construction, a detailed Construction Noise Management Plan shall be developed.
				
				• The Construction Noise Management Plan shall:
				  ○ 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:
				  ▪ 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.	

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Natural Environment					
Wildlife	●	-	Disturbance, displacement, or mortality of wildlife	• Prior to construction, field investigation of the Project Site for wildlife and wildlife habitat will be undertaken, as appropriate. • Where feasible, the Project Site construction zone will be surrounded by a silt (exclusion) fence within 48 hours of the commencement of construction activities to prevent wildlife from entering the site. The exclusion fencing will be examined daily and repaired as needed to ensure it functions as intended • If wildlife is encountered within the construction site, 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.	• 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.
Migratory Breeding Birds and Nests	●	-	Disturbance or destruction of migratory bird nests.	• All works must comply with the 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. • In the event that bird nests protected under the MBCA, FWCA, or ESA are encountered during construction, work must stop in the vicinity of the sighting until further direction is provided. These species and their nests must not be disturbed, tormented, injured, destroyed, and/or separated from eggs, hatchlings, or chicks in	• Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				any way. A protective buffer area should be established around the nest in consultation with a qualified avian biologist, as well as the MNRF, MECP, and/or Canadian Wildlife Service (CWS).	
Species at Risk – General	●	-	Habitat loss, disturbance and/or mortality to SAR.	• All requirements of the Ontario *Endangered Species Act* (ESA) and the federal *Species at Risk Act* (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 recovery 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.	• 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.
Species at Risk - Bats	●	-	Habitat loss, disturbance and/or mortality to bats.	• Per MECP guidance as part of the TPAP consultation: • If there are any structures or buildings on the subject lands that may be suitable for use by bats, surveys should be undertaken in accordance with the Ministry's protocols. ○ If SAR bats are determined to be present, potential direct impacts may be avoided if tree removal is completed outside of the roosting period or active season (December 1 to March 14)	• 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.
Species at Risk – Barn Swallow	●	-	Habitat loss, disturbance and/or mortality to Barn Swallow.	• Field surveys were undertaken prior to construction to confirm barn swallow presence in the area. • 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,	• 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			
				replacement structures and/or permitting requirements. • If construction activities are scheduled during the nesting season for Barn Swallow (April 1st to August 31st), a nest search will be undertaken to confirm that no Barn Swallows 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.	
Species at Risk – Eastern Meadowlark	●	-	Habitat loss, disturbance and/or mortality to eastern meadowlark.	• Field surveys were undertaken prior to construction to check for eastern meadowlark presence in the area. • If construction activities are scheduled during the nesting season for eastern meadowlark (April 1st to August 31st), a nest search will be undertaken to confirm that no eastern meadowlark are nesting in or near areas that may be affected by construction activities.	• 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 Environment - Watercourses	●	-	Impacts to three watercourses in the Natural Environment Study Area, aquatic and riparian vegetation; erosion and sedimentation to watercourses from construction; risk of contamination to watercourses, as a result of spills.	• Shorelines or banks disturbed by construction activities will be immediately stabilized by any activity associated with the project to prevent erosion and/or sedimentation, through re-vegetation with native species suitable for the site in adherence with the Metrolinx Vegetation Guideline (2020). • An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guide for Urban Construction (TRCA 2019), as amended from time to time, will be prepared prior to and implemented during construction to minimize the risk of sedimentation to the wetland or waterbody. • A Spill Prevention and Response Plan will be developed before work commences and implemented during construction to ensure procedures and policies are in place during construction to minimize impacts to wetlands or waterbodies.	• 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			
				• 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. • A Salt Management Plan will be developed before work commences to ensure procedures and policies are in place during construction and operations to minimize impacts to watercourses. • 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. • Operate, store, and maintain equipment, vehicles, and associated materials in a manner that prevents the entry of any deleterious substance from entering the natural environment. • Implement drip pans under equipment (e.g., generators, pumps, etc.) in operation within the work areas. • Any refuelling should be undertaken at least 30 m from any watercourse and any other surface drainage feature. • 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) *Stormwater Management Planning and Design Manual* (2003), the Greater Golden Horseshoe's *Erosion and Sediment Control Guideline for Urban Construction* (December, 2006), as amended from time to time, and the guidelines and regulatory requirements of CVC. • The overall stormwater quality and quantity control strategy will be developed in accordance with all relevant municipal,	

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				provincial and federal requirements, as amended, as well as the requirements of CVC.	
Aquatic Environment – Fish and Fish Habitat	●	-	Potential for direct, in-water impacts to fish and fish habitat.	• All requirements of the Fisheries Act and the ESA will be met. • As the watercourses on the Project Site are seasonal intermittent watercourses, a spring freshet survey will be completed in spring 2023 to further assess conditions prior to construction. • 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.	• 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.
Vegetation Removal and Compensation Plans	●	-	Tree / Vegetation removal, injury and protection.	• As part of the Arborist Report, all trees within or adjacent to the Project Study Area that will be removed or injured as part of the Project will be inventoried, including Butternut and any other SAR vegetation. SAR vegetation will be subject to permitting and approval requirements under Applicable Law, prior to the commencement of construction. The Arborist Report will include, but not be limited to the individual identification of all trees within the 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 Study Area will include those on Metrolinx property, trees on public and private lands, and boundary trees. Municipal by-laws will dictate the	• 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 Metrolinx's Vegetation Guideline (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
	Construction	Operation			
				minimum 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 tree end use (including identification of high value trees) as per the Metrolinx Vegetation Guideline (2020). • Vegetation compensation will be implemented through Metrolinx's Vegetation Compensation Guideline (2020), at minimum. Metrolinx's Vegetation Guideline considers baseline, municipal and ecological compensation strategies, and Metrolinx will work with the Treaty/Rights Holders, CVC, and the City during detailed design to identify appropriate measures for tree compensation. • 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 Vegetation Guideline (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 Vegetation Guideline (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.	• Monitoring requirements will be undertaken in accordance with conditions of permits and approvals. • Monitoring and management of trees/vegetation within the Kitchener Corridor right-of-way will be undertaken in accordance with the Integrated Vegetation Management (IVM) Program within the Metrolinx Vegetation Guideline (2020).

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Vegetation Removal and Compensation Plans – SAR Habitat	●	-	Disturbance, injury and/or removal of SAR vegetation, including Butternut.	• As part of the Arborist Report, all trees within or adjacent to the Project Site 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 the Butternut Assessment Guidelines (MNRF, 2014). The Assessor will prepare a Health Assessment Report for submission to MECP to determine the next course of action.	• On-site inspection will be undertaken to confirm the implementation of the mitigation measures.
Integrated Vegetation Management (IVM)	●	-	Footprint Impacts and potential for the establishment of invasive species and other incompatible species.	• An IVM Plan will be developed and implemented that is in adherence with the Metrolinx Vegetation Guideline (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.	• 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 Vegetation Guideline (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, Agrilus planipennis (Fairmaire) associated with removal, handing and transport of ash trees.	• Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, Agrilus planipennis (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. • Ensure precautions are being taken to minimize the spread of invasive species by cleaning equipment prior to moving sites.	• 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 Environment					

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
Archaeological Resources	●	-	Potential for site AjGx-267 (Heritage Layover H1) to be impacted by construction and operational activities. No impacts are anticipated to Site AjGx-268 (Heritage Layover H2), which lies outside of the construction footprint.	• 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 incorporate any additional actions required resulting from subsequent Archaeological Assessment Reports. • All work shall be performed in accordance with Applicable Law, including but not limited to the *Ontario Heritage Act*, the Ministry of Tourism, Culture and Sport (MTCS), formerly the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) *Standards and Guidelines for Consultant Archaeologists* (2011), and the MTCS document, *Engaging Aboriginal Communities in Archaeology: A Draft Bulletin for Consultant Archaeologists in Ontario* (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 MTCS. 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 MTCS, 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	• 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
	Construction	Operation			
				Assessments resulting from the Stage 1 AA (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 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 MTCS 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 communities, as per Metrolinx's *Guide to Engaging with Indigenous Communities* (2020).	
CHR1 - McNichol Cemetery	-	-	No direct adverse impacts are anticipated to the McNichol Cemetery. However, the close proximity of the proposed work to the cemetery poses a potential risk for land disturbance.	• The proposed work should be planned in a manner that avoids the McNichol Cemetery. • In accordance with the MTCS's *Standards and Guidelines for Consultant Archaeologists* (2011) and the *Funeral, Burial, and Cremation Services Act* and regulations under that Act, work in proximity to known cemeteries requires completion of an Archaeological Assessment	• Long term protection of the cemetery must be ensured, and no development, including any soil disturbing activities, can take place within the cemetery limits. • Further Archaeological Assessment may identify the need for monitoring during construction.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				prior to any proposed ground disturbance. Previous Archaeological Assessments have been carried out in McNichol Cemetery (see Appendix G) and temporary fencing will be erected during construction to protect the cemetery.	
CHR2 - Built Heritage Resource – 10827 Winston Churchill Boulevard	●	-	Indirect Adverse Impact. Isolation of a heritage attribute from its surrounding environment, context, or a significant relationship.	• The proposed work does not encroach on the property and should be planned in a manner that maximizes the buffer between the proposed access road/layover facility and the residential property. This property should be noted on project drawings as a “potential heritage property” to identify the heritage status of the property to project personnel. Selection of construction staging and laydown areas will follow Metrolinx ‘s selection procedures, which includes avoiding the property wherever possible or effectively mitigating impacts where not possible. • Post-construction landscaping should be planned in a manner that screens the layover facility and access road from the residential property. Options for vegetation screening will be explored during detailed design.	• None.
CHR3 - Built Heritage Resource – 10746 Winston Churchill Boulevard	-	-	None. The residence is located approximately 110 metres from the proposed work.	• None.	• None.
Socio-Economic and Land Use					
Property	●	●	Property acquisition – permanent and temporary.	• Specific property requirements will be confirmed during detailed 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.	• Number and resolution of complaints received.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
All land uses and adjacent lands	●	-	Nuisance effects from construction activities.	• The Project will comply with regulated noise and vibration limits for construction activities. • Mitigation measures related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration section of the commitment tables. • 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 to respond to construction nuisance complaints.	• When applicable, monitoring related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration commitment tables. • Number and resolution of complaints received.
All land uses and adjacent lands	●	●	Land use and access disruption.	• Provide temporary lighting and wayfinding signs and cues for navigation around the construction site.	• Number and resolution of complaints received.
Aesthetics / Visual Characteristics	●	●	Visual effects from construction / operations areas / activities.	• The Project has been designed to minimize effects on existing land use and development due to the setback from the adjacent road. • Temporary storage sites for equipment, staging / laydown areas, stockpiling of materials and other construction activities will be removed at the end of construction and no longer affect the viewscape • A screened enclosure for the development site will be provided, with particular attention to the waste disposal and material storage areas.	• 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.	• Develop a plan to reduce the effects of light pollution in accordance with the Project Agreement Comply with all local applicable municipal by-laws for lighting in areas near roadways regarding outdoor lighting for both permanent and temporary construction activities and incorporate industry best practices provided in ANSI/IES RP-8-18 – Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting, as described in the Project Agreement.	• Number and resolution of complaints received.

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				• 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. • Permanent lights will be installed for operations of the site.	
Transportation/Traffic					
Traffic	●	-	Construction may result in the need for temporary road or lane closures.	• Traffic Control and Management Plan(s) will be developed prior to construction to maintain reasonable access through work zones, 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 impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.
Utilities					
Utilities Planning and Construction	●	–	Utility serviceability effects due to design requirements and construction	• 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.	• Maintain regular communication and coordination through issuance of regular progress reports and updates to applicable utility agencies.
Hydrogeology					
Groundwater	●	–	Construction activities could expose groundwater and associated contamination	• 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 *Ontario Regulations 406/19* (On-Site and Excess Soil Management – to be enacted into law on July 1, 2020), *64/16* and *387/04*, as amended under the *Ontario Water Resources Act*.	• 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			
				• 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.	
Stormwater Management					
Potential Impacts and Proposed Mitigation Measures for Stormwater and Site Drainage	●	–	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).	• 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) *Stormwater Management Planning and Design Manual* (2003), the Greater Golden Horseshoe's *Erosion and Sediment Control Guideline for Urban Construction* (December 2006), as amended from time to time, and the guidelines and regulatory requirements of CVC. • 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 CVC. • A detailed assessment of proposed ditches along the Kitchener Corridor is required to ensure adequate drainage conveyance in accordance with municipal requirements and American Railway Engineering and Maintenance-of-Way Association (AREMA) *Manual for Railway Engineering* (2019).	• 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 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 CVC. • 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

Environmental Component	Project Phase		Potential Effect	Mitigation Measure(s)	Monitoring
	Construction	Operation			
				• 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 layover 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. • A hydraulic assessment of each crossing and any proposed culverts is required to determine proposed flood levels and associated creek bed and bank treatments to prevent scour and erosion and facilitate fish passage. Where applicable, the regulatory model(s) will be obtained from CVC to assess the hydraulic impacts along regulated watercourses. • Any proposed culvert replacements will be sized to maintain or improve local flood levels and supported by hydrologic/hydraulic calculations and/or models. Creek bed and banks design will include geomorphological input for scour and erosion prevention, and creation of appropriate fish habitat. • Incorporate Low Impact Development (LID) where practical and feasible, in accordance with design guidelines and standards.	events within the design range. Monitoring would require local rainfall data. • Infiltration targets measured by flow monitoring on infiltrative 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 *Stormwater Management Planning and Design Manual* (2003).

5.0 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) 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 5.1-1 and Table 5.1-2.

The Intergovernmental Panel on Climate Change (IPCC) 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* (e.g., minimizing effects of a project on climate change) and *adaptation* (e.g., resilience of a project to future climatic changes).

The Heritage Road Layover project serves to support increased service capacity on the Kitchener Corridor as a component of the overall GO Expansion Program. In turn, this will reduce criteria air contaminants that impact human health and reduce greenhouse gases that contribute to climate change as outlined in Section 5.1. The Project 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.

Section 5.1 outlines the policy context which guides how climate change has been considered in the planning of this Project. Given the construction and operational scope of the Project, and Metrolinx's extensive existing guidance on how to build and operate the transit infrastructure and facilities 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 5.2 (mitigation) and 5.3 (adaptation) describe how these considerations are being implemented in project planning and design for the Heritage Road Layover Project.

5.1 Policy Context

5.1.1 Government of Ontario

The Government of Ontario has committed to reducing GHG emissions to 30% below the 2005 levels by 2030 (e.g., 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 for the Project will 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 5.1.2 and 5.1.3.

5.1.2 Ministry of the Environment, Conservation, and Parks

MECP 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 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 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 EPR 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 (e.g., 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 A). The Air Quality Impact Assessments involved a high-level quantitative analysis of local GHG emissions during operations, comparing layover facility 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, there is a need to consider the design, construction and operation of the Heritage Road Layover with these future events in mind. The Project will continue to take climate change considerations into account as the design progresses. The TPAP is based on the Preferred Design.

Table 5.1-2 outlines how climate change was considered in this TPAP. Each of the areas considered is described in greater detail in sections 5.2 and 5.3.

Table 5.1-1: 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, Table 5.1-2 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 5.1-2: Recommendations for Climate Change in the Pre-TPAP and TPAP Phases

MECP Guideline Recommendation	Section(s)
The ministry expects proponents to take into account: • 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).	• Section 5.2.2 (greenhouse gas emissions). • Section 5.2.3 (impacts on carbon sinks). • Section 5.3 (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.	• Table 5.2-1
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 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.	• Section 5.0
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.

MECP Guideline Recommendation	Section(s)
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.	• Section 5.3, Table 5.3-1
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 *Planning for Resiliency* report (Metrolinx, 2017) to inform decisions regarding planning, construction and operations of infrastructure. This considers adaptation to climate change across all infrastructure assets.
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 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.	• Section 5.3
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.	• Section 5.2 • Section 5.3
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.	• Section 5.0

5.1.3 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 footprint[2] and contribute to a clean and healthy environment for future generations (Metrolinx, 2016).

As set out in the *Metrolinx Sustainability Strategy 2015 – 2020*, (Metrolinx 2016) the focus in implementing the GO Expansion Program is; *on how Metrolinx can plan, build, and operate, to achieve meaningful progress towards sustainability within its own operations*. The Metrolinx sustainability strategy focuses on five priority sustainability goals, outlined in Table 5.1-3.

Table 5.1-3: Metrolinx Sustainability Strategy

	SUSTAINABILITY GOALS
GOAL 1	**BECOME CLIMATE RESILIENT**
	Become Climate Resilient - Accelerate and intensify our efforts to implement a climate adaptation and resilience program to manage and mitigate climate change risks
GOAL 2	**REDUCE ENERGY USE AND EMISSIONS**
	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 (e.g., the carbon dioxide emitted during the manufacture, transport, and construction of materials, together with end-of-life emissions).

[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 (CO_2e). CO_2e 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 CO_2 that would create the same amount of warming.

	SUSTAINABILITY GOALS
GOAL 4	**MINIMIZE IMPACT ON ECOSYSTEMS**
	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.

Consideration of these goals has been integral to the decision-making for the design, construction, and operation of the Heritage Road Layover. Metrolinx generally requires that contractors adhere to the *GO Design Requirements Manual* (DRM) (Metrolinx 2020) and other applicable Metrolinx design standards, including the Metrolinx Sustainable Design Standard. The DRM outlines the Guiding Principles and technical details for designing and building GO infrastructure (Off Corridor [OffCorr] infrastructure). The DRM covers a number of areas directly and indirectly related to climate change adaptation and mitigation, including stormwater management, energy consumption and emissions, and vegetation. Effort will be made to apply DRM requirements to the infrastructure components to the maximum extent possible. The Metrolinx Sustainable Design Standard outlines specific design requirements and reporting direction for designing and building projects with capital costs over $100 million or otherwise required by Metrolinx. The Sustainable Design Standard covers a number of areas related to climate vulnerability and risk assessments and stormwater management. Effort will be made to apply Sustainable Design Standard requirements to infrastructure components to the maximum extent possible.

Similarly, the policy guidance provided in *Metrolinx Planning for Resiliency - Toward a Corporate Climate Adaptation Plan* (Metrolinx, 2017) has been integrated into the planning and design of the Heritage Road Layover Facility, to:

- identify the risks and implications of climate change – **Vulnerabilities**;
- respond to the threats posed by climate change impacts, e.g. severe weather events, temperature extremes - **Adaptation**
- increase the resiliency of the infrastructure and the operations and maintenance procedures – **Mitigation**

Applicability to the Project

Of the goals identified above, Goals 1, 2, and 4 line up most directly with climate change adaptation and mitigation as described in Section 5.1.2. Goal 1 is focused on adaptation and has been considered in various aspects of layover design. Goals 2 and 3 relate to minimizing emissions during layover 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.

Goals 3 and 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.

5.2 Project Effects on Climate Change Mitigation

As indicated in Table 5.1-1, 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, energy consumption/emissions and Environmental Management Systems [EMS] for layover operations).

5.2.1 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 1.2.1.

5.2.2 Greenhouse Gas Emissions

GHG/Climate Change analyses were undertaken as part of the Air Quality Effects Assessment for the Project, to evaluate the local impacts to air quality (see Sections 3.0, 4.2 and Appendix A).

5.2.3 Vegetation Compensation and Revegetation

The construction of the Project may 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.

For GO Expansion Program projects, Metrolinx has established a vegetation compensation framework as part of the Metrolinx Vegetation Guide (2020) and this framework will be applied to the Project. The compensation guideline applies to

construction and does not apply to routine operational maintenance work to ensure safe railway operations and sightlines within the Kitchener Corridor (Metrolinx, 2020).

Vegetation compensation will be implemented through Metrolinx's Vegetation Compensation Guideline, at minimum. Metrolinx's Vegetation Guideline considers baseline, municipal and ecological compensation strategies, and Metrolinx will work with the Treaty/Rights Holders, CVC, and the City during detailed design to identify appropriate measures for tree compensation. Table D-1 (Replication Tree (Planting) Ratio by Diameter at Breast Height (DBH) from CVC Ecosystem Offsetting Guidelines (2022) depicts the tree compensation ratios for CVC regulated lands, as shown in Table 5.2-1.

Table 5.2-1: Tree Compensation Ratios for CVC Regulated Lands

DBH Range (cm)	Replication Ratio
0 – 10	1:1
10.1 – 20	1:3
20.1 – 30	1:10
30.1 – 40	1:15
40.1 – 50	1:20
50.1 – 60	1:30
60.1 – 70	1:40
70.1 +	1:50

For Municipal (public) and Private Trees:

Any trees located on public or private lands will be compensated based on the guidelines specified within Brampton by-laws. Depending on the DBH of the tree, the following compensation ratios will be met for the Project (City of Brampton, 2018):

Table 5.2-2: City of Brampton Tree Compensation Ratios

DBH in cm	Ratio
15-20	1:1
21-35	2:1
36-50	3:1
51-65	4:1
>65	5:1

For Trees within Metrolinx Property:

Any trees within the Metrolinx ROW are not subject to municipal permits and approvals, including compensation requirements. Trees located within the Metrolinx ROW within a designated natural area will reflect the principles within the Guideline for Determining Ecosystem Compensation by the Toronto and Region Conservation Authority (TRCA). Trees not within a designated natural area will have baseline compensation of a 1:1 ratio. Metrolinx will work with CVC and Brampton to develop the final compensation plan for the Project.

Tree End Use:

Framework for the end use of trees removed from Metrolinx property should provide end use options, define higher value trees, outline transportation and storage plans, and building the distribution and re-use plan (Metrolinx, 2020). Higher value trees can be utilized as lumber for construction wood and other purposes. Most of the wood generated from tree removals will be converted into wood chips to be utilized within the railway corridor. If there is an excess of wood chips for the Project, distribution to community partners and re-use for gardening, pulp wood, biofuel and other uses may occur. The main objective is to reduce the amount of wood debris disposed into the landfill. Any diseased trees will not be transported outside of quarantine areas and all distribution and transportation will comply with the Canadian Food Inspection Agency.

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.

5.2.4 Energy Consumption and Emissions

To lower the energy consumption and carbon footprint of the proposed infrastructure, the successful Project proponent will be required to explore (sequentially) the following groups of methods for applicability and feasibility: energy efficiency, energy conservation and recovery, and energy harvesting. Examples include:

Energy efficiency – consider enhanced building automation controls; utilize light-emitting diode (LED) lighting; apply passive means of reducing energy where it does not conflict with other operational design requirements; include the use of building materials with high-insulation/energy efficiency value where possible.

Energy harvesting – consider incorporating solar thermal systems, passive solar systems and/or ground source heat pump systems to replace or augment fuel-based systems.

These and other considerations will be developed into an Energy and Emissions Management Plan that will include targets and programs to promote continuous reduction of energy and emissions (both GHG and criteria air contaminant).

5.2.5 Environmental Management System

Metrolinx has developed an Environmental Management System (EMS), which outlines an organization-wide framework for pursuing environmental compliance and continuous environmental improvements. The EMS, which follows the ISO 14001 standard[3] is currently expanding from its operational focus to encompass additional environmental responsibility and stewardship considerations.

The overall objectives of the Metrolinx Sustainability Strategy are reflected in the EMS with respect to energy use reduction and air emissions (such as GHG) management. The operation of the Project will be subject to Metrolinx's EMS. The construction of the Project will be managed through the development of an Environmental Management Plan.

The EMS includes:

- Environmental standards for managing chemicals, solid waste, regulated waste, bulk storage and fuel handling, water use and disposal, energy use, air emissions, ozone-depleting substances, designated substances and hazardous materials, snow and ice, and wildlife and vegetation;
- Compliance audits and corrective action planning;
- Environmental reporting metrics;
- Monitoring of environmental impacts; and
- Monitoring of energy use and air emissions.

Through the use of standards, audits, and reporting, the EMS will promote ongoing compliance with regulatory and corporate environmental requirements throughout the operations of the Heritage Road Layover. Additionally, monitoring of impacts will support ecosystem resilience, consistent with overall Metrolinx sustainability objectives.

5.3 Project Effects on 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

[3] ISO 14001 is an international standard that outlines specific requirements for an effective environmental management system. The standard provides a framework suitable for use by an organization and covers topics such as: Context of the organization, Leadership, Planning, Support, Operation, Performance evaluation, and Improvement.

(Metrolinx, 2017). Table 5.3-1 shows the current consensus predictions for climate change in the Great Lakes Basin.

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.

5.3.1 Air Temperature

Increases in air temperature will not greatly impact the construction of the Project.

5.3.2 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 5.3-1).

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 City of Brampton and CVC.

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-year[4] 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.

[4] 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 separators[5] and stormwater management features must be sized appropriately to manage predicted future scenario flows and sediment loading (e.g., winter and spring).

Erosion and Sediment Control Measures

An increase in storm intensity, which is projected as a result of climate change (see Table 5.3-1), 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), MECP Stowmwater Management and Design Manual (2003), TRCA (in collaboration with CVC) Erosion and Sediment Control Guide (2019), 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.

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

Table 5.3-1: 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

5.3.3 Low-Impact Development

The SWM designs for the Project will consider implementation of Low Impact Development (LID) measures. LID is a SWM strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution by managing runoff as close to its source as possible (e.g., in the vicinity of the proposed infrastructure). Compared to conventional design, LID measures allow for increased infiltration of stormwater through built infrastructure, which would be beneficial for managing stormwater should storms increase in intensity. LID design strategies include measures that can effectively remove nutrients, pathogens and metals from runoff, and reduce the volume and intensity of stormwater flows (Sustainable Technologies Evaluation Program (STEP), 2019).

5.3.4 Drought

Increase in the frequency and extent of drought will not greatly impact the construction of the Project.

5.3.5 Sustainability Considerations and Climate Change Mitigation Measures

As part of the Metrolinx Sustainability Strategy (2015-2020), five priority sustainability goals have been established to reduce impact on the environment and enhance opportunities for communities with the expansion of public transit within the GTHA. The efforts within the Sustainability Strategy have continued beyond 2020 to maintain a commitment to sustainability (Metrolinx, 2013). These five goals have been incorporated into the design of the Project and are outlined below in Table 5.3-2.

Table 5.3-2: Sustainability Considerations and Climate Change Mitigation Measures

Metrolinx Sustainability Strategy Goal	Project Component / Environmental Feature	Measures to Mitigate Effects of the Transit Project on Climate Change	Measures to Mitigate Effects of Climate Change on the Transit Project	Additional Measures to Promote Sustainability	Outcomes
GOAL 1: BECOME CLIMATE RESILIENT	Air Temperature	• Consider designs that include mitigation measures to reduce the urban heat island effect if the Project • Landscape plantings.	• Consideration of direct and indirect impacts from extreme weather during detailed design. • Consideration of design standards that account for temperature extremes and impacts. • Reduce solar absorption through building materials and automation Project Specific Output Specifications (PSOS).	• None.	• Reduced ambient air temperature within the local environment. • Enhanced minimized impact on surrounding community. • Reduced heat stress for on-site vegetation. • Reduced cooling costs.
	Precipitation	• None.	• Consideration of direct and indirect impacts from extreme weather during detailed design • Consideration of design standards that account for precipitation (rain and snow) extremes and impacts. • Use the most current Intensity Duration Curves (IDC) in SWM design. • Incorporate Low Impact Development (LID) techniques into design where feasible, under guidance from Sustainable Technologies Evaluation Program (STEP, 2019). • Develop a SWM Report during detailed design in consultation with CVC and MECP and following appropriate guides. • Design SWM system to reduce direct overland flow and sheet run-off to storm receptors, holding tanks, and other infrastructure requiring pump-outs.	• None.	• Minimized impacts on surrounding ecosystems and landscapes since stormwater systems are designed based on predicted storm events to mostly control on-site rainfall runoff. • Minimize impacts to SWM infrastructure, reducing operation and maintenance requirements. • Prepared for worst case forecast SWM flows and sediment loading. • Increased infiltration allows for better stormwater management to potentially address more intense storms.

Metrolinx Sustainability Strategy Goal	Project Component / Environmental Feature	Measures to Mitigate Effects of the Transit Project on Climate Change	Measures to Mitigate Effects of Climate Change on the Transit Project	Additional Measures to Promote Sustainability	Outcomes
			• Design SWM system to encourage surface water flow velocity reduction and ground infiltration. • Design SWM system to handle peak winter and spring loading • Monitor SWM facilities including any installed LID elements and maintain and repair as needed.		
	Drought	• None.	• Consideration of direct and indirect impacts from extreme weather during detailed design. • Consideration of design standards that account for precipitation (rain and snow) extremes and impacts. • Employ water conserving measures and metering to monitor consumption. • Landscape plantings using native and non-native species that are hardy, drought and salt-tolerant, and resistant to exposure and soil compaction. • Include commitments to implement water conservation practices and targets in the Sustainability Plan	• None.	• Reduced drought impacts to on-site vegetation as a result of stormwater capture systems (e.g., infiltration / cisterns). • Minimized impacts on surrounding ecosystems. • Reduced indoor and outdoor water use, minimizing the impact of extended droughts on operations and landscape plantings.
GOAL 2: **REDUCE ENERGY USE AND EMISSIONS**	Planning for Transit	• The Project has been identified for implementation through a comprehensive, iterative planning process for new facilities in the GTHA. • The layover facility location was selected based on a GO Expansion business case	• None.	• None.	• Reduce traffic congestion and air emissions and improve per capita GHG emissions.

Metrolinx Sustainability Strategy Goal	Project Component / Environmental Feature	Measures to Mitigate Effects of the Transit Project on Climate Change	Measures to Mitigate Effects of Climate Change on the Transit Project	Additional Measures to Promote Sustainability	Outcomes
		analysis, with benefits outweighing impacts. • The Project is anticipated to contribute to a broader reduction in traffic congestion and air emissions and improve per capita GHG emissions.			
	Energy Consumption and Emissions, including GHG Emission	• The Project is expected to contribute to an overall decrease in GHG emissions due to a reduction in vehicles, replaced by more trains carrying more passengers. • Consider energy efficient design. • Develop and Energy and Emissions Management Plan that targets and programs to promote continuous reduction of energy and emissions (both GHG and Criteria Air Contaminant [CAC]). • Include commitments in the Sustainability Plan to reduce energy consumption.	• None.	• Annual reporting of energy use and emissions.	• Reduced GHG and CAC emissions. • Reduced energy waste and cost throughout the life-cycle.
GOAL 3: INTEGRATE SUSTAINABILITY IN OUR SUPPLY CHAIN	Sustainable Building Materials and Procurement	• None.	• None.	• Identify opportunities to use green construction materials such as those with recycled content or certified sustainable. • Sustainability Plan to include plans and commitments to integrate sustainability criteria into the procurement of goods and services.	• Reduced life-cycle impacts.
GOAL 4: MINIMIZE IMPACT ON ECOSYSTEMS	Environmental; Management Systems	• Operate the Project in accordance with the Metrolinx EMS, which is aligned with ISO 19001, and includes the Sustainability Plan.	• Sustainability Plan to include identification of climate change risks and vulnerabilities.	• Operate the Project in accordance with the Metrolinx EMS, which is aligned with ISO 14001.	• Environmental compliance through continuous monitoring. • Monitoring of impacts will support ecosystem resilience.

Metrolinx Sustainability Strategy Goal	Project Component / Environmental Feature	Measures to Mitigate Effects of the Transit Project on Climate Change	Measures to Mitigate Effects of Climate Change on the Transit Project	Additional Measures to Promote Sustainability	Outcomes
		• To ensure compliance and continuous improvement, develop a Sustainability Plan aligned with the Metrolinx Sustainability Strategy and the EMS, that sets targets, measurements, and monitoring methods, and reporting format.			
	Vegetation Compensation and Revegetation	• Vegetation compensation will be implemented through Metrolinx's Vegetation Compensation Guideline, at minimum (Metrolinx, 2020). Metrolinx's Vegetation Guideline considers baseline, municipal and ecological compensation strategies, and Metrolinx will work with the Treaty/Rights Holders, CVC, and the City during detailed design to identify appropriate measures for tree compensation. • The success of compensation vegetation will be monitored in accordance with the Metrolinx Vegetation Guideline (Metrolinx, 2020).	• Select plant material suitable for the Project Site conditions. • Landscape plantings using native and non-native species that are hardy, drought and salt-tolerant, and resistant to exposure and soil compaction.	• Post-construction monitoring of restoration plantings, and re-planting as required. • Where there are opportunities for revegetation landscaping, consider opportunities to: ○ Enhance biodiversity and ecosystem value. ○ Develop a Pollinator Habitat Plan in support and Alignment with the Ontario Pollinator Health Action Plan. ○ Avoid planting invasive species near ravines and other natural areas.	• Compensation for vegetation removals to mitigate potential impacts on carbon sinks. • To mitigate potential impacts on carbon sinks, revegetation completed as soon as possible with plant material suitable for the Project site conditions.
	Waste Management and Reduction	• None.	• None.	• Develop and implement a Construction and Demolition Waste Management Plan prior to establish waste diversion goals and identify opportunities for recycling and reuse of construction materials. • As part of Sustainability Plan, identify ways to maximize waste diversion, and recycling and reuse.	• Increased waste diversion from landfill during construction and operation.
	Salt Reduction Initiatives	• None.	• None.	• Develop and update a Salt Management Strategy.	• Minimized impacts to local water bodies and reduced corrosion

Metrolinx Sustainability Strategy Goal	Project Component / Environmental Feature	Measures to Mitigate Effects of the Transit Project on Climate Change	Measures to Mitigate Effects of Climate Change on the Transit Project	Additional Measures to Promote Sustainability	Outcomes
				• Implement and maintain the Winter Maintenance Plan for facilities maintenance, to include consideration of: ○ Salt use and other chemicals reduction methods; ○ Smart-about-Salt certification for Winter Maintenance Service providers; ○ Best management practices including brine and pre-wetting; ○ Tracking and monitoring of salt and other de-icing compound use; ○ Using low-chloride alternatives in environmentally sensitive areas; and ○ Ensuring automated equipment is properly calibrated.	and wear on assets and infrastructure without compromising safety. • Reduced chemical exposure for employees and environment. • Reduced operational and maintenance costs.
GOAL 5: ENHANCE COMMUNITY RESPONSIBILITY	Community Benefits	• None.	• None.	• Develop a Community Benefits Framework, and a follow-on Community Benefits Agreement, which might include: ○ Opportunities for local workforce development in Project construction; ○ Procurement from local businesses and social enterprises; ○ Opportunities to build partnerships with local community organizations; and ○ Engagement with educational programs to further innovation and sustainability objectives.	• Enhanced social and economic benefits for local communities.

Metrolinx Sustainability Strategy Goal	Project Component / Environmental Feature	Measures to Mitigate Effects of the Transit Project on Climate Change	Measures to Mitigate Effects of Climate Change on the Transit Project	Additional Measures to Promote Sustainability	Outcomes
				• Sustainability Plan will include plans and commitments to provide programs that support employment and training, mental health and local economic development.	
	Light, Noise and Vibration Impacts.	• None.	• None.	• Minimize light pollution in accordance with the DRM, without compromising safety and security. • Prior to construction, develop and maintain a Noise and Vibration Control Plan, to mitigate construction noise and vibration impacts. • Design the layover facility and select equipment to minimize noise from rail operations. • Utilize isolators and vibration control devices as required so equipment noise and vibration does not interfere with GO Transit operations.	• Improved relations with surrounding communities.

6.0 Consultation

Consultation for this project has been conducted in accordance with *O.Reg. 231/08 Transit Projects and Metrolinx Undertakings*, Section 8. This section summarizes how Metrolinx engaged with Indigenous communities and Nations and a variety of key stakeholders to solicit comments and feedback on the proposed Heritage Road Layover. Metrolinx consulted with Indigenous communities and Nations, the public, property owners, elected officials, Technical Advisory Committee members, and review agencies during this process to ensure their feedback could be fully considered and incorporated. A detailed summary of stakeholder engagement, feedback, comments received and how they were considered throughout the TPAP is provided in Appendix I.

Appendix I is divided into five (5) separate appendices:

- I-1: Public Engagement Summary Reports
- I-2: Pre-Planning Correspondence Record
    - I-2a: Pre-Planning Correspondence Record: Meetings - TAC and Stakeholder
    - I-2b: Pre-Planning Correspondence Record: Meetings - Elected Officials
    - I-2c: Pre-Planning Correspondence Record: Technical and Community Stakeholders
- I-3: Transit Project Assessment Process Correspondence Record
    - I-3a: Transit Project Assessment Process Correspondence Record: Meetings - TAC and Stakeholder
    - I-3b:Transit Project Assessment Process Correspondence Record: Meetings - Elected Officials
    - I-3c. Transit Project Assessment Process Correspondence Record: Technical and Community Stakeholder
- I-4: Time Out Correspondence Record
    - I-4a. Time Out Correspondence Record: Technical and Community Stakeholders
    - I-4b. Time Out Correspondence Record: Elected Officials
- I-5: Correspondence with Indigenous Communities and Nations

Appendix I-1 contains the records from the two project Public Information Centres and related questions from the public.

Appendix I-2 contains the records of meetings and correspondence with agencies, municipal and community stakeholders, and elected officials during the pre-planning process.

Appendix I-3 contains the records of meetings and correspondence with agencies, municipal and community stakeholders, and elected officials during the TPAP process.

Appendix I-4 contains the records of correspondence with agencies, municipal and community stakeholders, and elected officials during the “TPAP pause” process.

Appendix I-5 contains the record of correspondence with Indigenous communities and Nations throughout the pre-planning, TPAP, and “TPAP pause” process.

All comments received from the public have been redacted to protect personal information.

Engagement with Indigenous communities and Nations is outlined separately in Section 1416.8.

6.1 Consultation Approach

Pre-TPAP consultation began in November 2021, introducing the project to government agencies, relevant to the project. Formal consultation in advance of the Notice of Commencement was initiated with the publication of the Notice of Public Information Centre (PIC) #1 first published on December 23, 2021. Various methods of informal and formal communication have been employed throughout the pre-TPAP and TPAP.

Consultation for this project was planned to ensure a fulsome engagement process. The objectives of this approach were to:

- Inform relevant local, regional, and identified stakeholders of the Heritage Road Layover project;
- Meet the requirements of O.Reg. 231/08, s. 8 and mitigate impacts (as required) to receive regulatory approval;
- Engage, the public, property owners, elected officials, government review agencies and other relevant stakeholders throughout the TPAP process to ensure that the proposed project and mitigation measures are identified, understood, transparent, and fair;
- Educate various stakeholders about the local and regional benefits, location justification, and requirements for the layover in relation to the Kitchener GO Expansion;
- Build a level of understanding and trust; and Provide opportunities for feedback and to comment on the proposed project design, technical studies and identified mitigation measures.

6.1.1 Communication and Engagement Activities

To ensure stakeholders had the opportunity to influence the Project design, opportunities for engagement and comment were provided in advance of the prescribed review period following distribution of a Notice of Commencement. In order to attract as many stakeholders as possible, a diverse set of engagement methods were employed, including:

- Online engagement at the Metrolinx Engage Heritage Road Layover Project Website (https://www.metrolinxengage.com/en/content/kitchener-corridor-heritage-road-layover), where participants could learn more about the Project and share their comments by e-mail;
- Notifications and email updates;

- Meetings with Review Agencies (Provincial, Municipal and Conservation Authorities);
- Notifications and presentations to elected officials;
- Meetings with other stakeholders as required;
- Notifications to, and discussions with, Property Owners;
- Virtual PICs and public review opportunities;
- Newspaper, and Social Media Advertisements; and
- Targeted letters to directly affected property owners and residents within a minimum of 100 m of the study area.

6.1.2 Accessibility

All consultation materials meet Metrolinx Accessibility requirements, in accordance with the *Accessibility for Ontarians with Disabilities Act*, 2016 (AODA), including printed Notices and Mailers, the EPR and Technical Reports.

6.1.3 Key Project Contacts and Stakeholders

A project contact list was developed at the outset of the Project and maintained throughout the duration. The list consisted of the following groups: members of the public, property owners, review agencies (federal, provincial, municipal and conservation authorities), elected representatives, utility companies, transit authorities, 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. The project contact list can be found in Appendix I.

Agencies

Federal Agencies

- Environment and Climate Change Canada
- Fisheries and Oceans Canada

Provincial Agencies

- Ministry of Environment, Conservation and Parks
- Ministry of Natural Resources and Forestry
- Ministry of Tourism, Culture and Sport
- Ministry of Transportation
- Ministry of Municipal Affairs and Housing

Municipal Government, Conservation Authorities and Related Municipal Bodies

- Region of Peel
- City of Brampton

- Halton Region
- Town of Halton Hills
- Credit Valley Conservation

Elected Officials

Members of Parliament (MPs)

- Wellington-Halton Hills MP – Michael D. Chong
- Brampton West MP – Kamal Khera

Members of Ontario Provincial Parliament (MPPs)

- Wellington-Halton Hills MPP – Ted Arnott
- Brampton West MPP – Amarjot Sandhu
- Brampton South MPP – Prabmeet Sarkaria

City/Town Councillors and Regional Councillors

- City of Brampton – Wards 2 + 6 (City) – Doug Whillans
- City of Brampton – Wards 2 + 6 (Regional) – Michael Palleschi
- Region of Halton Hills – Ward 1 + 2 (Regional) – Clark Sommerville
- Town of Halton Hills – Ward 2 (Town) – Bryan Lewis
- Town of Halton Hills – Ward 2 (Town) – Ted Brown

Other Stakeholders

Rail

- CN Rail

Public

- Directly impacted property owners – lands acquired by Metrolinx prior to completion of the TPAP
- Local property owners – within a minimum of 120 m of the Project Site (a distribution map is included in Appendix I-1)
- General public

6.2 Project Notices

Public notices through the Brampton Guardian and Georgetown/Acton Independent Free Press were published prior to all PICs, as well as prior to the Notice of Commencement and Notice of Completion. Table 6.2-1 summarizes all notices circulated as part of the Project. Copies of these notices and mailers can be found in Appendix I-1 and I-4a.

Table 6.2-1: Summary of Notices

Type	Medium	Language	Location	Date
Notice of PIC #1	Newspaper	English	Brampton Guardian and the Georgetown Independent / Acton Free Press	December 23, 2021 and January 6, 2021
	Mailer	English	Delivered within a minimum of 100 m of the Study Area	December 23, 2021
Notice of Commencement And Notice of PIC #2	Newspaper	English	Brampton Guardian and the Georgetown Independent / Acton Free Press	March 24, 2022 and March 31, 2022
	Newspaper	French	Le Métropolitain	March 24, 2022 and March 31, 2022
	Mailer	English	Delivered within a minimum of 100 m of the Study Area	March 24, 2022
Notice of Issue	Mailer	English	Delivered within a minimum of 100 m of the Study Area	July 20, 2022
Notice of Resumption	Mailer	English	Mailed within a minimum of 100 m of the Study Area	August 16, 2022
Notice of Completion	Newspaper	English	Brampton Guardian and the Georgetown Independent / Acton Free Press	August 18, 2022 and August 25, 2022
	Newspaper	French	Le Métropolitain	August 25, 2022 and September 8, 2022
	Mailer	English	Mailed within a minimum of 100	August 18, 2022

Type	Medium	Language	Location	Date
			m of the Study Area	

Notice of PIC Mailer

PIC #1

A Letter and copy of the Notice of Public Information Centre #1 were hand-delivered to households residing in close proximity to the Project Site on December 23, 2021. (a distribution map is included in Appendix I-1) A separate cover letter and copy of the Notice of Public Information Centre #1 was sent by registered mail on December 23, 2021 to the two property owners whose lands include the location of the Project Site, and to their respective legal counsel.

Notice of Commencement and PIC #2

A Letter and copy of the Notice of Commencement and Public Information Centre #2 were hand-delivered to households residing in close proximity (a minimum of 120 m) to the Project Site on March 24, 2022. (a distribution map is included in Appendix I-1) A separate cover letter and copy of the Notice of Commencement and Public Information Centre #2 was mailed on March 23, 2022 to the two property owners and their legal counsel who, at the time, owned portions of the lands that would comprise the Project Site. Stakeholders that emailed Metrolinx directly to be included in a project notice circulation list from PIC #1 were also provided with a copy of the Notice.

6.3 Pre-Planning Consultation

The Pre-Planning Consultation phase of the Project was the first opportunity to inform and engage regarding the Project. A Project website was set up and a PIC was held to provide a first look at the Project and request engagement and feedback.

6.3.1 Public Consultation

Project Website

In advance of PIC #1 a Project website was developed to provide information about the Heritage Road Layover (https://www.metrolinxengage.com/en/content/kitchener-corridor-heritage-road-layover). The website provides a comprehensive hub for interested stakeholders and members of the public to learn more about the Project and allows viewers to find out how they can participate in consultation events, provide feedback.

Public Information Centre #1

From January 12 – 26, 2022 Metrolinx hosted the first PIC for the Heritage Road Layover Facility TPAP. Due to the ongoing COVID-19 pandemic and gathering restrictions the meeting was held virtually through www.metrolinxengage.com. The purpose of this first meeting was to introduce the Project and gather initial input and comments from the community. As well, the meeting provided the opportunity to understand any concerns surrounding the project at an early phase, so responses can

be incorporated into the final reports. The project website was Participants could communicate through the public “Ask a Question” page, on page comment forms, by calling Metrolinx, or by emailing peel@metrolinx.com. The PIC #1 Summary Report can be found in Appendix I-1.

Table 6.3-1: Summary of Key PIC #1 Details

Category	Details
Date	Wednesday, January 12 to Wednesday, January 26, 2022
Location	https://www.metrolinxengage.com/en/content/kitchener-corridor-heritage-road-layover
Number of Unique Page Views	201
Questions/Comments Received	9
Project Information Presented	• Background Information – which provided information about GO Rail Expansion and the proposed Heritage Road Layover • Conceptual Designs – which provided more information about the proposed facility design, existing surroundings, location details, and renderings • Transit Project Assessment Project (TPAP) – which provided information on the technical studies being completed to ensure any potential adverse effects from the proposed infrastructure are either avoided, mitigated, or minimized

Table 6.3-2: Key Issues Raised During PIC #1

What We Heard	What We’re Doing About It
Noise concerns	• The findings of the Noise and Vibration Baseline Conditions and Impact Assessment Report will be shared as part of the next meeting. • Mitigation measures will be incorporated into the design of the layover if they are considered feasible.
Air quality concerns	• The findings of the Air Quality Assessment Report and mitigation of any effects on air quality in the surrounding area will be shared as part of the next meeting.
Design questions	• Incorporating mitigation criteria into the EPR that will address design concerns.

What We Heard	What We're Doing About It
Heritage Heights Secondary Plan	• Continuing consultation with the City of Brampton.

6.3.2 TAC and Agency Consultation

A Technical Advisory Committee (TAC) was formed for this project including representatives of the City of Brampton, Region of Peel, Town of Halton Hills, and CVC. TAC meetings were held to present and discuss Project information. Additionally, meetings were offered to interested Agencies to introduce the project prior to requesting review. The dates and locations of the TAC and Agency meetings are listed in In advance of PIC #1 a Project website was developed to provide information about the Heritage Road Layover (https://www.metrolinxengage.com/en/content/kitchener-corridor-heritage-road-layover). The website provides a comprehensive hub for interested stakeholders and members of the public to learn more about the Project and allows viewers to find out how they can participate in consultation events, provide feedback.

Public Information Centre #1

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Table 6.3-1. The presentation materials and meeting minutes can be found in Appendix I-2a.

Table 6.3-3: Details of Technical Advisory Committee Meetings

Date	Location	Attendees	Summary
13-Dec-21	Online Session	City of Brampton Region of Peel Town of Halton Hills CVC	Provided an overview of the GO Expansion program and the conceptual design of the Heritage Road Layover facility Described the TPAP documentation including the summary Environmental Project Report (EPR) and the various technical studies supporting the TPAP Requested initial feedback and issues Key topics included: o Facility details such as future electrification, and track connection to the west, general site layout, site servicing for electricity, sewer and water o Potential impacts such as noise and vibration impacts o Coordination with the work being done on the draft Heritage Heights Subwatershed Study, particularly for stormwater management and the natural heritage system
16-Dec-21	Online Session	MTCS	Provided background on the Project Discussed archaeology and cultural heritage requirements Key topics included: o Coordination with the Heritage Heights Secondary Plan land use and servicing elements, particularly for the identified road crossing at eastern end of the layover facility

6.3.3 Elected Official Consultation

Metrolinx provided briefing materials in advance of the PICs to elected officials via email and offered to hold briefing meetings with elected officials. Table 6.3-4provides a list of meetings held.

Table 6.3-4: Summary of Meetings Held with Elected Officials Offices

Date	Office	Attendees	Meeting Summary
7-Jan-22	MPP Sandhu	Sumeet Kang	Metrolinx provided background on the project, and the opportunity to ask questions or provide suggestions. • Key topics included: o An overview of the GO Expansion program and the conceptual design of the Heritage Road Layover facility o A description of the TPAP documentation including the summary Environmental Project Report (EPR) and the various discipline TPAP Studies o A summary of the previous public engagement sessions held, and the feedback received o The number of residential properties potentially affected and property acquisition

6.4 TPAP Consultation

6.4.1 Notice of Commencement

In accordance with Section 7 of O.Reg.231/08, A Notice of Commencement was first issued on March 24, 2022. Due to timing, a combined Notice of Commencement and Public Information Centre #2 was circulated. The notice was published in English and French, delivered to local property owners (see Table 6.2-1 above), and circulated to Indigenous communities and Nations, the GRT, Eos, and any stakeholders who had requested to be included. Additionally information was posted to the GO Expansion Twitter page and the Peel and Halton newsletters. The Notice of Commencement included information about the Project and TPAP as well as how to provide comments. A copy of the Notice of Commencement is provided in Appendix I-1.

6.4.2 Public Consultation

Public Information Centre #2

From April 6 – 20, 2022 Metrolinx hosted the second PIC for the Heritage Road Layover Facility TPAP. Due to the ongoing COVID-19 pandemic and gathering restrictions the meeting was held virtually through the Metrolinx Engage website. The purpose of the

second meeting was to provide results of all the draft environmental studies and share a draft of the Environmental Project Report (EPR). As well, key mitigation and monitoring requirements for construction and operations were provided for stakeholder consideration and comment.

Participants could communicate through the public "Ask a Question" page, on page comment forms, by calling Metrolinx at 416-202-7500, by tweeting @GOExpansion, or by emailing peel@metrolinx.com and haltonregion@metrolinx.com. The PIC #2 Summary Report can be found in Appendix I-1.

Table 6.4-1: Summary of Key Public Meeting #2 Details

Category	Details
Date	Wednesday, April 6 to Wednesday, April 20, 2022
Location	https://www.metrolinxengage.com/en/content/kitchener-corridor-heritage-road-layover
Number of Unique Page Views	247
Questions/Comments Received	2
Project Information Presented	• Project Overview – The main landing page, which provided information about GO Rail Expansion in the Greater Toronto and Hamilton Area and on the GO Kitchener corridor, and specifically about the proposed Heritage Road Layover, as well it provided a TPAP timeline and summary of input provided during the first public engagement session, held from January 12 – 26, 2022; • Conceptual Designs – which provided more information about the proposed facility design, existing surroundings, location details, and renderings; and, • TPAP Findings, Mitigation and Monitoring Measures – which provided information about the study findings along with key mitigation and monitoring measures that will be implemented for the project.

As part of PIC #2 and following the Notice of Commencement, the draft project EPR and technical studies were shared on the project website for review and comment. Each technical study link led to a page providing study highlights and potential effects, mitigation, and monitoring measures. Drafts of the following reports were made available during the consultation period:

- Draft Environmental Project Report
- Air Quality

- Archaeology
- Cultural Heritage
- Natural Environment
- Noise and Vibration
- Socio-Economic & Land Use Characteristics

As part of the EPR a Traffic and Transportation study was in preparation but not available to be shared during the PIC consultation period. The Draft Traffic and Transportation study has since been completed and added to the Engage website for public review.

Table 6.4-2: Key Issues Raised During PIC #2

What We Heard	What We're Doing About It
Concerns regarding impacts to future development	Working with the City of Brampton to coordinate the Project with the Heritage Heights Secondary Plan and align with the intended surrounding development. Reviewing mitigation and monitoring requirements against planned future land uses.

6.4.3 TAC and Agency Consultation

As noted in Section 6.3.2 a TAC was formed for this project including representatives of the City of Brampton, Region of Peel, Town of Halton Hills, and CVC. The dates and locations of the TAC and Agency meetings are listed in Table 6.4-3. The presentation materials and meeting minutes can be found in Appendix I-2a.

Table 6.4-3: Details of Technical Advisory Committee Meetings

Date	Location	Attendees	Summary

01-Apr-22	Online Session	City of Brampton
		Region of Peel
		Town of Halton Hills
		CVC
			• Overview of the GO Expansion program and the conceptual design of the Heritage Road Layover facility
			• Described the TPAP documentation including the summary Environmental Project Report (EPR) and the findings from the various discipline TPAP Studies
			• Discussed initial feedback and issues raised by the public from PIC #1
			• Additional discussion topics included:
			  ○ Facility details such as size of trains, and train refuelling and fuel storage,
			  ○ Potential impacts such as noise and vibration impacts in relation to pending and future residential development, and issues with existing rail traffic noise
			  ○ Coordination of schedules for construction staging between planned Metrolinx, Peel Region and City of Brampton infrastructure projects
			  ○ Coordination with the work being done on the draft Heritage Heights Subwatershed Study, particularly for stormwater management and the natural heritage system

28-Jun-22	Online Session	City of Brampton CVC CN	• Key topics included: ○ Impacts of the layover to the draft Heritage Heights Subwatershed Study and the Heritage Heights Secondary Plan

			○ Discussions regarding a proposed roadway which would cross the Project Site, and natural environment and stormwater issues

6.4.4 Elected Official Consultation

Metrolinx provided briefing materials in advance of the PICs to elected officials via email and offered to hold briefing meetings with elected officials. Table 6.4-4 provides a list of meetings held.

Table 6.4-4: Summary of Meetings Held with Elected Officials Offices

Date	Office	Attendees	Meeting Summary
28-Mar-22	MP Khera	Patrick Vaughan	Metrolinx provided background on the project, and the opportunity to ask questions or provide suggestions. • Key topics included: o An overview of the GO Expansion program and the conceptual design of the Heritage Road Layover facility o A description of the TPAP documentation including the summary Environmental Project Report (EPR) and the various discipline TPAP Studies o What engagement has or will occur with Indigenous communities and Nations, particularly given the planned Stage 3 Archaeological Assessment of the site situated within the Project Site footprint?
29-Mar-22	City of Brampton	Michael Palleschi	Metrolinx provided background on the project, and the opportunity to ask questions or provide suggestions. • Key topics included: o An overview of the GO Expansion program and the conceptual design of the Heritage Road Layover facility o A description of the TPAP documentation including the summary Environmental Project Report (EPR) and the various discipline TPAP Studies

			○ A summary of the previous public engagement sessions held, and the feedback received, including the notices provided to nearby property owners ○ The layover operational impacts on the Winston Churchill Boulevard and Heritage Drive crossings ○ Details of typical operations at the Site, such as the definition of light maintenance activities and inspections ○ Coordination with the Heritage Heights Secondary Plan land use, roads and servicing, natural heritage system, and stormwater management elements

6.4.5 GRT Review Circulation

In preparation of the final EPR members of a Government Review Team (GRT) were provided with draft EPR and supporting documents for review and comment. During the TPAP period, several comments were received from agencies and municipalities (including MTCS, CVC, MECP, City of Brampton, Region of Peel, Town of Halton Hills, and MNRF) key comments are summarized in Table 6.4-5. See Appendix I-3c for correspondence records for Municipalities and Agencies.

Integration of Comments

Comments received throughout the TPAP consultation period have been responded to and integrated into the EPR and supporting documents to strengthen requirements. Additional mitigation and monitoring commitments and future commitments have been included within the EPR to address these comments.

Table 6.4-5: Key Comments from GRT Review of Draft EPR and Supporting Documents

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
City of Brampton	Population Data	Population references within the EPR and SELUC are outdated. Update all references to 2021 Census projections.	All population references have been updated to 2021 Census data.
City of Brampton	Policy	Note that the Heritage Heights Secondary Plan was adopted by City Council on April 6, 2022	All reports have been revised to note the adoption of the Heritage Heights Secondary Plan. Metrolinx continues to consult with the City of Brampton.
City of Brampton	Infrastructure	Ongoing discussions regarding the location of the Heritage Road Layover in relation to Tennis St. as shown in the Heritage Heights Secondary Plan.	Metrolinx is coordinating with the City of Brampton and CN Rail to accommodate the proposed crossing of the CN tracks.
City of Brampton	Construction	Construction activities and staging should be planned and undertaken to avoid unintended	Construction is not anticipated to have a direct effect to CHR-1. Indirect impacts (such as a

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
		negative impacts on CHR 1 and CHR 2.	temporary increase of noise and dust) are anticipated for CHR-2 as it is adjacent to the proposed access road to the Project. Measures will be taken to mitigate these impacts.
MTCS	Property	The Cultural Heritage Report should explain what property is owned and what property could be acquired/controlled by Metrolinx for the purpose of this project.	Details have been added to the report to describe the Project Site footprint and clarify that no additional property acquisitions are anticipated.
MTCS	Report Language	Additional language should be added to the report to reflect the purpose of the report relating to recommending further studies.	Language as recommended by MTCS has been incorporated into the report.
MTCS	Stage 1 AA	Please submit the Stage 1 Archaeological Assessment report to the ministry for registration.	The Stage 1 Archaeological Assessment report has been submitted for registration on July 5 2022.
MNRF	Permitting	The relocation of fish outside of the work area requires a Licence to Collect Fish for Scientific purposes and the relocation of wildlife outside the work area (including amphibians, reptiles, and small mammals) will require a Wildlife Collector's	A Licence to Collect Fish for Scientific Purposes was obtained to complete the Aquatic Survey field investigations. Requirements for future permitting have been noted as

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
		Authorization under the Fish and Wildlife Conservation Act will also be required.	project commitments.
Region of Peel	Construction	The EPR and TIA do not discuss Peel/Halton's proposed work along Winston Churchill Blvd.	The reports have been updated to incorporate the planned capital project on Winston Churchill Blvd.
Region of Peel	Construction	The entrance tie-in must match the proposed road grades of Winston Churchill Blvd.	The design will incorporate the proposed grades as provided by the Region of Peel.
Region of Peel	Stormwater	As part of Peel's construction work along Winston Churchill Blvd. the culvert configuration under the CN crossing will be changing. This should be taken into consideration.	The design of the culvert at the CN crossing will be taken into account as part of the design and Stormwater Management report.
Region of Peel	Communication	Please provide sufficient notice to the Region of Peel and other stakeholders (Emergency Services, school boards, etc.) for upcoming road closures.	Notification requirements have been incorporated into the TIA and EPR.
Region of Peel	Construction	The Heritage Road Layover shares PINs with the Kitchener Corridor Expansion project. Please coordinate these projects together to ensure all information can be reviewed by Regional Staff.	The Heritage Road Layover project team will share this information with the Kitchener Corridor Expansion team to streamline review for Regional staff.

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
Region of Peel	Traffic	Details pertaining to the impact to access of the identified heritage features are to be incorporated into the Traffic Study.	There are no impacts expected to the cultural heritage properties. Confirmation of no traffic impacts have been added to the TIA and EPR.
Region of Peel	Traffic	A road occupancy permit and traffic control plan would be required for any proposed lane closures.	This requirement has been added to the TIA and EPR.
Region of Peel	Traffic	The traffic count data used includes 2020 pandemic traffic data. Detail how this data was balanced.	Clarification regarding the traffic data used has been incorporated into the TIA.
Region of Peel	Traffic	Ensure Book 7 is adhered to during the construction process, including all necessary signs along Winston Churchill Blvd. to ensure pedestrians and cyclists are safely accommodated.	Adherence to Book 7 has been incorporated into the TIA and EPR.
CVC	Stormwater	The Heritage Road Layover is located within the draft Heritage Heights Community Subwatershed Study (HHSWS) area which is being finalized with the City of Brampton. Since the Heritage Road Layover project was not considered when the HHCSS was developed consultation is required with the City of Brampton to determine	Consultation with the City of Brampton is ongoing. Further details regarding stormwater will be incorporated into the Stormwater Management Report.

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
		how to mitigate impacts to the proposed natural heritage system.	
CVC	Wildlife	Consider installation of wildlife exclusion fencing. Both from the riparian area as well as from external to the site.	This has been identified in the EPR.
CVC	Stormwater	Ensure that the field studies and background information consider findings from the draft HHSWS Phase 1 and 2.	This work was referenced as part of the NER and EPR. Work relating to the draft HHSWS is ongoing.
CVC	Aquatic	Note that the fish barrier at Winston Churchill Blvd. as identified in the reporting is being replaced by a new crossing along Winston Churchill Blvd. which includes considerations for fish passage.	This has been noted within the reporting.
CVC	Vegetation	In conjunction with mitigation measures related to vegetation removal, please also account for non-treed natural vegetation communities that will also require avoidance and/or replacement (i.e., there is wetland present within the area associated with the intermittent CRT1-2).	The extent and type of vegetation communities have been confirmed through field studies and mitigation and monitoring measures have been incorporated. Compensation will be implemented through the Metrolinx Vegetation Compensation Guideline (2020) at minimum.
CVC	Vegetation	Tree compensation is mentioned. Note that within CVC's regulated	Vegetation compensation will be implemented

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
		area, CVC promotes the use of CVC's Ecological Offsetting Guideline.	through the Metrolinx Vegetation Compensation Guideline (2020), at minimum. The Metrolinx Vegetation Guideline considers baseline, municipal and ecological compensation strategies, and Metrolinx will work with the Treaty/Rights Holders, CVC, and the City during detailed design to identify appropriate measures for tree compensation.
CVC	Aquatic	Watercourse CRT1-2 is regulated (medium constraint) and provides seasonal fish habitat. A standard culvert may not be a good option. More discussion will be required on this.	Culvert design will be confirmed through the SWM report. The EPR notes CVCs interest in the culvert design.
Town of Halton Hills	Construction	As part of the construction, and trucks accessing the site must come from Mayfield Road. No truck traffic should be going through Norval Hamlet.	Restriction has been added within the TIA and EPR for Highway 7 and Winston Churchill Blvd intersection in Norval Hamlet with note indicating traffic must travel south from Mayfield Drive.
Town of Halton Hills	Communication	As a courtesy to all the residents living on Winston Churchill Blvd. and in the Norval	This requirement has been added to the TIA and the

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
		Hamlet, please provide notification in advance detailing the construction work that will be occurring along with a Metrolinx contact. Please provide a copy of that notification to the Town of Halton Hills staff representation	EPR future commitments.
MECP	Water	The study area is partially located in highly vulnerable area and significant groundwater recharge area. The construction phase of this project could pose risks to this area. Source protection policies may apply. The EPR has not discussed protection of drinking water sources. The EPR should identify that the project would be occurring within the Credit Valley Protection Area and that the CTC Source Protection Plan applies. The EPR should also identify whether any policies apply to activities related to the construction, operation, or maintenance of the project. The EPR should note whether the proponent has discussed the project with the CTC Source Protection Authority.	Additional information and mitigation measures have been added to the EPR relating to source protection.

Comment Received From	Issue Category	Summary of Comment/Concern	Incorporation into EPR and Design
MECP	Vegetation	Additional mitigation measures, including plantings and vegetation near impacted sensitive receptors to minimize off-site particulate impacts should be explored for the operation phase of the project.	Additional mitigation measures will be evaluated as needed.

Table 6.4-6 Summery of Agency Communication

Agency	Date	Summary
Federal – Department of Fisheries and Oceans	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Federal – Department of Fisheries and Oceans	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Federal – Department of Fisheries and Oceans	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Federal – Department of Fisheries and Oceans	May 9, 2022	• DFO responded to the EPR circulation noting they do not review reports and to submit a Request for Review form if the project needs review
Federal – Department of Fisheries and Oceans	June 14, 2022	• Metrolinx responded to DFO noting that aquatic fieldwork is scheduled for July 4, 2022, following which a Request for Review will be submitted
Federal – Department of Fisheries and Oceans	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Federal – Department of Fisheries and Oceans	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Federal – Department of Fisheries and Oceans	August 18, 2022	• Metrolinx shared Notice of Completion
Federal – Environment and Climate Change Canada	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Federal – Environment and Climate Change Canada	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Federal – Environment and Climate Change Canada	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Provincial – Ministry of Environment, Conservation and Parks	November 25, 2021	• Metrolinx provided an introduction email and high-level project summary • Metrolinx requested confirmation of the Project Officer for the file •
Provincial – Ministry of Environment, Conservation and Parks	November 29, 2021	• MECP requested confirmation of project timing
Provincial – Ministry of Environment, Conservation and Parks	December 1, 2021	• Metrolinx confirmed proposed project dates with MECP
Provincial – Ministry of Environment, Conservation and Parks	December 8, 2021	• MECP indicated they had no concerns with the proposed timeframe
Provincial – Ministry of Environment, Conservation and Parks	February 4, 2022	• Metrolinx provided the Noise and Vibration study assumptions for MECP review
Provincial – Ministry of Environment, Conservation and Parks	February 8, 2022	• MECP indicated that comments would be ready by the week of February 28, 2022
Provincial – Ministry of Environment, Conservation and Parks	March 2, 2022	• MECP provided comments on the Noise and Vibration Assumptions
Provincial – Ministry of Environment, Conservation and Parks	March 24, 2022	• Metrolinx provided the Notice of Commencement for MECP review
Provincial – Ministry of Environment, Conservation and Parks	April 5, 2022	• Metrolinx provided the Draft EPR for comment
Provincial – Ministry of Environment, Conservation and Parks	April 8, 2022	• MECP noted that a lead Project Officer had been assigned to the project • MECP requested confirmation on the target dates for the project

Provincial – Ministry of Environment, Conservation and Parks	April 11, 2022	• MECP provided a letter acknowledging the Notice of Commencement • Metrolinx provided estimated timelines for the project and requested confirmation that the EPR had been properly circulated to the new Project Officer • MECP confirmed that they had received the EPR and technical studies • MECP requested Metrolinx share their preferred comment response table • Metrolinx provided the comment response table for MECP use
Provincial – Ministry of Environment, Conservation and Parks	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction • MECP requested clarification regarding how the Noise and Vibration comments circulated March 2, 2022 would be closed off
Provincial – Ministry of Environment, Conservation and Parks	April 18, 2022	• Metrolinx noted that the comments were incorporated into the Noise and Vibration report and the comments could be closed off as part of the technical review of the report
Provincial – Ministry of Environment, Conservation and Parks	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Provincial – Ministry of Environment, Conservation and Parks	May 12, 2022	• MECP noted that the technical reviewers requested more time and would submit their comments by Monday May 16, 2022
Provincial – Ministry of Environment, Conservation and Parks	May 13, 2022	• Metrolinx noted that there is no issue with the minor delay • Metrolinx also noted their intent to proceed with a full 120 day TPAP process rather than the 90 day period previously discussed
Provincial – Ministry of Environment, Conservation and Parks	May 27, 2022	• MECP provided comments on the EPR • MECP noted that they were satisfied with the Noise and Vibration responses
Provincial – Ministry of Environment, Conservation and Parks	July 14, 2022	• Metrolinx noted that they were looking to proceed with a Notice of Issue for the project and would like to schedule a meeting for July 26, 2022 • MECP noted that the date would work for a meeting
Provincial – Ministry of Environment, Conservation and Parks	July 11, 2022	• Metrolinx shared their responses to the City of Brampton's comments regarding Cultural Heritage and Archaeology
Provincial – Ministry of Environment, Conservation and Parks	July 13, 2022	• Metrolinx provide their comment responses to MECP
Provincial – Ministry of Environment, Conservation and Parks	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Provincial – Ministry of Environment, Conservation and Parks	July 28, 2022	• MECP requested an updated EPR for review
Provincial – Ministry of Environment, Conservation and Parks	July 29, 2022	• Metrolinx shared updated EPR draft for MECP review
Provincial – Ministry of Environment, Conservation and Parks	August 3, 2022	• MECP acknowledged the Notice of Issue
Provincial – Ministry of Environment, Conservation and Parks	August 9, 2022	• Metrolinx shared the Indigenous Communities and Nations consultation record
Provincial – Ministry of Environment, Conservation and Parks	August 10, 2022	• MECP confirmed successful receipt of the Indigenous Communities and Nations consultation record • Metrolinx shared the Stakeholder Consultation record
Provincial – Ministry of Environment, Conservation and Parks	August 15, 2022	• MECP confirmed most comments had been addressed, pending review of SAR and updates to the consultation record
Provincial – Ministry of Environment, Conservation and Parks	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project • MECP acknowledged the Notice of Resumption
Provincial – Ministry of Environment, Conservation and Parks	August 18, 2022	• Metrolinx shared Notice of Completion
Provincial – Ministry of Municipal Affairs and Housing	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022

Provincial – Ministry of Municipal Affairs and Housing	April 11, 2022	• MMAH requested the circulation letter and an overlay map for their review • Metrolinx provided the requested letter and map as well as the comment response template
Provincial – Ministry of Municipal Affairs and Housing	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Provincial – Ministry of Municipal Affairs and Housing	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Provincial – Ministry of Municipal Affairs and Housing	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Provincial – Ministry of Municipal Affairs and Housing	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Provincial – Ministry of Municipal Affairs and Housing	August 18, 2022	• Metrolinx shared Notice of Completion
Provincial – Ministry of Natural Resources and Forestry	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Provincial – Ministry of Natural Resources and Forestry	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Provincial – Ministry of Natural Resources and Forestry	April 22, 2022	• MNDMNRF provided comments on the EPR
Provincial – Ministry of Natural Resources and Forestry	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Provincial – Ministry of Natural Resources and Forestry	May 26, 2022	• MNDMNRF indicated that they have no further comments related to the Traffic Impact Assessment • MNDMNRF noted that the project contact has changed
Provincial – Ministry of Natural Resources and Forestry	June 1, 2022	• Metrolinx noted the contact change
Provincial – Ministry of Natural Resources and Forestry	July 4, 2022	• Metrolinx provided their responses to MNDMNRF's comments which will be incorporated into the EPR
Provincial – Ministry of Natural Resources and Forestry	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Provincial – Ministry of Natural Resources and Forestry	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Provincial – Ministry of Natural Resources and Forestry	August 18, 2022	• Metrolinx shared Notice of Completion
Provincial – Ministry of Tourism, Culture, and Sport	November 24, 2021	• Metrolinx provided an introduction email and high-level project summary, and offer of an initial meeting • Metrolinx provided copies of previously completed Archaeological Assessments
Provincial – Ministry of Tourism, Culture, and Sport	November 29, 2021	• MTCS requested further background information regarding the project and if it had been covered by a previous TPAP
Provincial – Ministry of Tourism, Culture, and Sport	December 6, 2021	• Metrolinx clarified that the project was not part of a previously completed TPAP but was part of the broader study area for the GO Transit Georgetown to Kitchener Rail Expansion ESR completed in 2009. A TPAP was previously initiated for the project in 2015/2016 but no notice of commencement was issued.
Provincial – Ministry of Tourism, Culture, and Sport	December 6, 2021	• MTCS expressed interest in an initial project background meeting
Provincial – Ministry of Tourism, Culture, and Sport	December 9, 2021	• Metrolinx provided an invitation to a Technical Advisory Committee meeting on December 16, 2021
Provincial – Ministry of Tourism, Culture, and Sport	January 6, 2022	• Metrolinx circulated the final meeting minutes from the December 16, 2021 meeting

Provincial – Ministry of Tourism, Culture, and Sport	March 4, 2022	• Metrolinx provided the Draft Cultural Heritage Report for review
Provincial – Ministry of Tourism, Culture, and Sport	April 5, 2022	• Metrolinx provided the Draft EPR for comment
Provincial – Ministry of Tourism, Culture, and Sport	April 7, 2022	• Metrolinx confirmed proper circulation of the Draft EPR • MTCS confirmed they would provide comments by May 8, 2022
Provincial – Ministry of Tourism, Culture, and Sport	April 11, 2022	• MTCS requested Metrolinx's comment response table
Provincial – Ministry of Tourism, Culture, and Sport	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Provincial – Ministry of Tourism, Culture, and Sport	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Provincial – Ministry of Tourism, Culture, and Sport	May 6, 2022	• MTCS noted they would not be commenting on the Draft Traffic Impact Assessment • MTCS noted they would comment on the forthcoming Cultural Heritage Assessment • MTCS requested clarification regarding when the Stage 1 Archaeological Assessment would be submitted to the ministry
Provincial – Ministry of Tourism, Culture, and Sport	May 9, 2022	• Metrolinx noted that a Cultural Heritage Evaluation Report will not longer be required for the project based on no direct impact to the adjacent property • Metrolinx noted that comments from municipal partners on the Stage 1 Archaeological Assessment were being compiled and that formalized feedback from Indigenous Communities and Nations had not yet been received
Provincial – Ministry of Tourism, Culture, and Sport	May 10, 2022	• MTCS clarified that they were looking for responses to comments provided on the Draft Cultural Heritage Report • MTCS confirmed the process for submitting the Stage 1 Archeological Assessment and suggested requesting an expedited review to fit within the project timeline • Metrolinx confirmed that all comments on the Draft Cultural Heritage Report were being addressed collectively so the responses and revised report should be circulated in late May
Provincial – Ministry of Tourism, Culture, and Sport	May 13, 2022	• Metrolinx requested guidance regarding holding the Stage 1 Archaeological Assessment report until Indigenous Communities and Nations comments could be received and incorporated
Provincial – Ministry of Tourism, Culture, and Sport	May 16, 2022	• MTCS noted that their advice is to complete a Stage 1 report at a minimum during the pre-planning stage of a project, and not passed the regulated 120 day TPAP period • MTCS noted that there is an option to take a "timeout" in order to complete consultation for the report
Provincial – Ministry of Tourism, Culture, and Sport	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Provincial – Ministry of Tourism, Culture, and Sport	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Provincial – Ministry of Tourism, Culture, and Sport	August 18, 2022	• Metrolinx shared Notice of Completion
Provincial – Ministry of Transportation	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Provincial – Ministry of Transportation	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Provincial – Ministry of Transportation	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Provincial – Ministry of Transportation	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Provincial – Ministry of Transportation	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project

Provincial – Ministry of Transportation	August 18, 2022	• Metrolinx shared Notice of Completion
Municipal – City of Brampton	November 16, 2021	• Metrolinx provided an introduction email and high-level project summary, and offer of an initial meeting • Metrolinx requested confirmation of project contact
Municipal – City of Brampton	November 19, 2021	• City of Brampton confirmed project contact and interest in a meeting
Municipal – City of Brampton	December 1, 2021	• Metrolinx provided an invitation to the Technical Advisory Committee meeting on December 13, 2021
Municipal – City of Brampton	December 1, 2021	• City of Brampton requested additional staff be included in the TAC meeting
Municipal – City of Brampton	December 17, 2021	• Metrolinx circulated the Technical Advisory Committee meeting minutes from December 13, 2021
Municipal – City of Brampton	January 17, 2021	• City of Brampton requested a status update for the project to circulate to their Transit Advisory Committee
Municipal – City of Brampton	January 18, 2021	• Metrolinx confirmed that PIC #1 was currently live and a full project status could be found on the webpage
Municipal – City of Brampton	March 11, 2022	• City of Brampton provided some comments on the PIC #2 slide deck • City of Brampton provided some comments regarding the design and location of the layover facility with respect to the Heritage Heights Secondary Plan
Municipal – City of Brampton	March 21, 2022	• Metrolinx noted that the Project Notice of Commencement and PIC #2 would be circulated March 24, 2022 • Metrolinx provided an invitation to the Technical Advisory Committee meeting on April 1, 2022
Municipal – City of Brampton	April 7, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Municipal – City of Brampton	April 11, 2022	• Metrolinx circulated the Technical Advisory Committee meeting minutes from April 1, 2022
Municipal – City of Brampton	April 12, 2022	• City of Brampton noted a discrepancy in the EPR regarding service frequency • Metrolinx indicated that the EPR would be revised to state the correct service frequency as previously communicated with the City of Brampton • City of Brampton requested service information for stations west of Mount Pleasant • Metrolinx provided the future service levels for stations west of Mount Pleasant
Municipal – City of Brampton	April 12, 2022	• Metrolinx met with City of Brampton to discuss integration with the Heritage Heights Secondary Plan
Municipal – City of Brampton	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Municipal – City of Brampton	April 21, 2022	• City of Brampton requested the Traffic Impact Assessment
Municipal – City of Brampton	April 22, 2022	• Metrolinx indicated that the Traffic Impact Assessment had been delayed and should be circulated early next week
Municipal – City of Brampton	April 28, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Municipal – City of Brampton	May 8, 2022	• City of Brampton provided comments for the Draft EPR submittal • City of Brampton noted that comments on the Traffic Impact Assessment would follow under a separate cover
Municipal – City of Brampton	May 30, 2022	• City of Brampton provided comments for the Traffic Impact Assessment
Municipal – City of Brampton	July 11, 2022	• Metrolinx provided a response to comments relating to Cultural Heritage and Archaeology • Metrolinx provided a copy of the Archeoworks 2017 Stage 3 Site-Specific Archaeological Assessment as requested
Municipal – City of Brampton	July 12, 2022	• Metrolinx provided the remainder of their comment responses to the City of Brampton's feedback on the EPR
Municipal – City of Brampton	July 15, 2022	• City of Brampton indicated their satisfaction with most of the comment responses • City of Brampton requested that the population forecasts in the EPR and SELUC reports be updated
Municipal – City of Brampton	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project • City of Brampton noted that the City Environmental Planning staff would have additional comments finalized shortly
	July 20, 2022	• City of Brampton provided comments from Environmental Planning Staff on the EPR

		• Metrolinx acknowledged the comments
	July 21, 2022	• City of Brampton provided an additional comment regarding stormwater quality • City of Brampton provided additional comments from Development Engineering Staff regarding noise • Metrolinx requested additional information regarding the SELUC comments • City of Brampton confirmed SELUC information
	July 29, 2022	• Metrolinx confirmed edit to the SELUC report in response to City's comment
	August 2, 2022	• Metrolinx requested permission to circulate data from the City of Brampton to Indigenous Nations • City of Brampton confirmed no issue
	August 4, 2022	• City of Brampton shared additional comments from the Heritage Planning staff • Metrolinx responded to provide clarification regarding Cultural Heritage
	August 10, 2022	• Metrolinx provided comment responses to the City of Brampton along with an updated copy of the EPR • City of Brampton provided a memo summarizing potential conflicts with the Heritage Heights Secondary Plan and draft Heritage Heights Subwatershed study requiring further discussion and mitigation
	August 11, 2022	• City of Brampton confirmed agreement that surrounding properties would not have any direct cultural heritage impacts
Municipal – City of Brampton	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Municipal – City of Brampton	August 18, 2022	• Metrolinx shared Notice of Completion
Municipal – Credit Valley Conservation	December 17, 2021	• Metrolinx circulated the Technical Advisory Committee meeting minutes from December 13, 2021
Municipal – Credit Valley Conservation	March 21, 2022	• Metrolinx noted that the Project Notice of Commencement and PIC #2 would be circulated March 24, 2022 • Metrolinx provided an invitation to the Technical Advisory Committee meeting on April 1, 2022
Municipal – Credit Valley Conservation	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Municipal – Credit Valley Conservation	April 11, 2022	• Metrolinx circulated the Technical Advisory Committee meeting minutes from April 1, 2022
Municipal – Credit Valley Conservation	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Municipal – Credit Valley Conservation	May 11, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Municipal – Credit Valley Conservation	May 31, 2022	• CVC provided comments on the draft EPR
Municipal – Credit Valley Conservation	June 12, 2022	• Metrolinx provided a comment response table detailing how CVC's comments were addressed as well as the revised Natural Environment Report
Municipal – Credit Valley Conservation	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Municipal – Credit Valley Conservation	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Municipal – Credit Valley Conservation	August 16, 2022	• CVC acknowledged the responses to their comments and noted some remained open as well as providing some additional comments to address • CVC noted additional coordination will be required following the TPAP phase of the project
Municipal – Credit Valley Conservation	August 18, 2022	• Metrolinx shared Notice of Completion
Municipal – Region of Peel	December 1, 2021	• Metrolinx provided an introduction email and high-level project summary • Metrolinx provided an invitation to the Technical Advisory Committee meeting on December 13, 2021

Municipal – Region of Peel	December 17, 2021	• Metrolinx circulated the Technical Advisory Committee meeting minutes from December 13, 2021
Municipal – Region of Peel	March 21, 2022	• Metrolinx noted that the Project Notice of Commencement and PIC #2 would be circulated March 24, 2022 • Metrolinx provided an invitation to the Technical Advisory Committee meeting on April 1, 2022
Municipal – Region of Peel	March 24, 2022	• Metrolinx circulated the Notice of Commencement to Region of Peel Elected officials with an offer for a briefing on March 28, 2022
Municipal – Region of Peel	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Municipal – Region of Peel	April 11, 2022	• Metrolinx circulated the Technical Advisory Committee meeting minutes from April 1, 2022
Municipal – Region of Peel	April 11, 2022	• Region of Peel noted that they have circulated the EPR for comments • Region of Peel noted that there was a new lead project contact
Municipal – Region of Peel	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Municipal – Region of Peel	May 5, 2022	• Region of Peel requested a copy of the Draft Traffic Information Study • Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022 • Region of Peel provided comments on the EPR
Municipal – Region of Peel	May 17, 2022	• Region of Peel provided an additional comment noting that Public Sector Network does not have any infrastructure in the area of the project
Municipal – Region of Peel	May 27, 2022	• Region of Peel provided additional comments on the Socio-Economic and Land Use Baseline Conditions and Impact Assessment Report
Municipal – Region of Peel	June 6, 2022	• Region of Peel provided comments on the Draft Traffic Impact Assessment Report • Metrolinx thanked the Region of Peel for their review and confirmed that the staff who had requested the report had reviewed it. • Region of Peel confirmed that the staff were part of the review team
Municipal – Region of Peel	June 27, 2022	• Metrolinx requested clarification regarding a comment regarding culvert configurations • Region of Peel clarified their comment request • Metrolinx confirmed they would reach out with a response shortly
Municipal – Region of Peel	July 8, 2022	• Metrolinx provided consolidated responses to the Region of Peel's comments • Metrolinx provided the updated Traffic Impact Assessment for review
Municipal – Region of Peel	July 15, 2022	• Region of Peel acknowledged comment responses and provided additional comments regarding Air Quality • Metrolinx confirmed they would review the new comments
Municipal – Region of Peel	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Municipal – Region of Peel	August 12, 2022	• Metrolinx provided responses to the Region of Peel's Air Quality comments
Municipal – Region of Peel	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Municipal – Region of Peel	August 18, 2022	• Metrolinx shared Notice of Completion
Municipal – Town of Halton Hills	December 8, 2021	• Metrolinx provided an introduction email and high-level project summary • Metrolinx provided an invitation to the Technical Advisory Committee meeting on December 13, 2021
Municipal – Town of Halton Hills	December 9, 2021	• Halton Hills expressed interest in attending the Technical Advisory Committee meeting
Municipal – Town of Halton Hills	December 17, 2021	• Metrolinx circulated the Technical Advisory Committee meeting minutes from December 13, 2021
Municipal – Town of Halton Hills	March 21, 2022	• Metrolinx noted that the Project Notice of Commencement and PIC #2 would be circulated March 24, 2022 • Metrolinx provided an invitation to the Technical Advisory Committee meeting on April 1, 2022
Municipal – Town of Halton Hills	March 24, 2022	• Metrolinx circulated the Notice of Commencement and PIC #2 including an invitation for a briefing meeting on March 29, 2022 • Halton Hills indicated they would like to attend the briefing meeting
Municipal – Town of Halton Hills	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022 • Metrolinx provided the PDF versions of the Notice of Commencement and PIC #2 for circulation as discussed in the TAC meeting

Municipal – Town of Halton Hills	April 11, 2022	• Metrolinx circulated the Technical Advisory Committee meeting minutes from April 1, 2022
Municipal – Town of Halton Hills	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Municipal – Town of Halton Hills	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Municipal – Town of Halton Hills	May 24, 2022	• Halton Hills noted that they were coordinating all comments and hoped to share them with Metrolinx by May 27, 2022
Municipal – Town of Halton Hills	June 3, 2022	• Halton Hills provided comments on the EPR
Municipal – Town of Halton Hills	July 8, 2022	• Metrolinx provided a comment response table addressing the Halton Hills comments
Municipal – Town of Halton Hills	July 11, 2022	• Halton Hills confirmed that their comments had been adequately addressed
Municipal – Town of Halton Hills	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Municipal – Town of Halton Hills	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Municipal – Town of Halton Hills	August 18, 2022	• Metrolinx shared Notice of Completion
Other Technical Stakeholders – Canadian National Railway	December 3, 2021	• Metrolinx provided an introduction email and high-level project summary, and offer of an initial meeting
Other Technical Stakeholders – Canadian National Railway	December 8, 2021	• Metrolinx offered to provide a call
Other Technical Stakeholders – Canadian National Railway	April 6, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Other Technical Stakeholders – Canadian National Railway	April 7, 2022	• Metrolinx provided the Draft EPR for comment response by May 8, 2022
Other Technical Stakeholders – Canadian National Railway	April 14, 2022	• Metrolinx circulated a correction to a typographical error in the EPR introduction
Other Technical Stakeholders – Canadian National Railway	April 29, 2022	• CN requested more detailed design plans to facilitate their review • Metrolinx requested clarity regarding what details they would require
Other Technical Stakeholders – Canadian National Railway	May 5, 2022	• Metrolinx circulated the Draft Traffic Impact Assessment for review by May 28, 2022
Other Technical Stakeholders – Canadian National Railway	June 7, 2022	• Metrolinx reiterated their request for clarity regarding additional information CN required for their review
Other Technical Stakeholders – Canadian National Railway	June 8, 2022	• CN requested the Stormwater Management report including a proposed grading plan for their review
Other Technical Stakeholders – Canadian National Railway	June 16, 2022	• Metrolinx provided the 60% detailed design report, specifications, and drawings for the site. • Metrolinx noted that the SWM report would be circulated once it is prepared.
Other Technical Stakeholders – Canadian National Railway	July 18, 2022	• Metrolinx shared Notice of Issue, pausing the project
Other Technical Stakeholders – Canadian National Railway	August 16, 2022	• Metrolinx shared Notice of Resumption, resuming the project
Other Technical Stakeholders – Canadian National Railway	August 18, 2022	• Metrolinx shared Notice of Completion

6.5 Notice of Issue

A Notice of Issue for the project was registered with MECP on July 18, 2022 and posted to the project website in accordance with O.Reg.231/08 section 10. The Notice was also circulated to Indigenous communities and Nations, GRT, MTO, elected officials, delivered to surrounding property owners within a minimum 100 m of the Project Site and members of the public identified in the project mailing list on July 16, 2022.

The Notice of Issue was utilized because additional information from Indigenous communities and Nations was required to identify if existing Aboriginal and/or treaty rights, as recognized and affirmed in section 35 of the Constitution Act, 1982, are impacted.

Consultation During the "time out" Period

To facilitate the discussion of potential impacts to Indigenous and Treaty Rights as it relates to the Project, the following engagement was completed:

- A workshop held with Six Nations of the Grand River on July 22, 2022; and
- Ongoing engagement with Haudenosaunee Confederacy Chiefs Council by way of the Haudenosaunee Development Institute, which included establishing a project-specific agreement with the Nation.
- Follow-up meetings were completed with the Ministry of Environment, Conservation and Parks to outline the outcomes of the above-noted engagement activities.
- Project-specific feedback provided by Indigenous communities and Nations will be integrated as future commitments within the EPR, and will continue through detailed design and construction.

Metrolinx is committed to working with Indigenous communities and Nations outside of the Heritage Road Layover project regarding broader issues that extend beyond the Heritage Road Layover scope of work. A summary of the workshop held with Six Nations of the Grand River is included in Appendix I-5. A very high level summary of the meetings with the Haudenosaunee Confederacy Chiefs Council is also provided in Appendix I-5.

6.6 Notice of Resumption

A Notice of Resumption was provided to the Director of the Environmental Assessment Permissions Branch on August 16, 2022, and the 120-day TPAP consultation period resumed and concluded on August 18, 2022.

6.7 Post TPAP Consultation

6.7.1 Notice of Completion

In accordance with Section 11 of O.Reg.231/08, A Notice of Completion was first issued on August 18, 2022, within 120 days of the Notice of Commencement. The Notice was circulated in the same publications as the Notice of commencement as detailed above in Table 6.2-1. The Notice of Completion was also emailed to interested parties on the

contact list. The Notice detailed the objection process available. The notice was made available on the project webpage. A copy of the Notice of Completion is provided in Appendix I.

6.7.2 30-Day Public Review

Upon issuing the Notice of Completion, 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 communities and Nations and organizations, Review Agencies, and other Stakeholders. Specifically, the EPR was posted online to the Metrolinx project website as follows:

https://www.metrolinxengage.com/en/content/kitchener-corridorheritage-road-layover

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 August 18, 2022 and will conclude on September 19, 2022.

6.7.3 35-Day Minister's Review

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

1. A notice to proceed with the transit project as planned in its Environmental Project Report;
2. A notice that requires the proponent to take further steps, which may include further study or consultation; or,
3. A notice allowing the proponent to proceed with the transit project subject to conditions.

The 35-day review period will commence on September 20, 2022 and will conclude on October 23, 2022.

6.8 Engagement with Indigenous Communities and Nations

6.8.1 Background

In 2018, Metrolinx made a commitment to build positive and meaningful relationships with Indigenous Peoples, in alignment with its strategic objectives. To that end, the Metrolinx Indigenous Relations Office (IRO) was established in 2019 with a mandate to build and grow relationships with Indigenous communities and Nations.

In 2020, the IRO became the sole point of contact for Indigenous communities and Nations within Metrolinx and, in that capacity, supports the organization in coordinating

engagement and communication with Communities and Nations related to all projects and Metrolinx activities.

6.8.2 List of Indigenous Communities and Nations

Metrolinx engaged with Indigenous communities and Nations that were identified as potentially interested through consultation with the Special Project Officer, Environmental Assessment Branch of the MECP. A formal letter of acknowledgement was sent by the MECP on January 13, 2022 (see Appendix I-2c) identifying the following Indigenous communities and Nations as having potential interest in the project:

- Six Nations of the Grand River
- Haudenosaunee Confederacy Chiefs Council
- Mississaugas of the Credit First Nation
- Huron-Wendat Nation

6.8.3 Formal Notices, Reports and Field Invitations

The IRO shared the following project notices, reports and field invitations with the identified Indigenous communities and Nations:

Project Introduction and Notice of Public Information Centre #1 - January 7, 2022

Draft Stage 1 Archaeological Assessment Report for review – February 8, 2022 and followed up on April 21, 2022

Draft Cultural Heritage Report for review - March 7, 2022

Notice of Commencement and Notice of Public Information Centre #2 - March 23, 2022

Draft Environmental Project Report and supporting technical studies including, but not limited to, Air Quality, Noise and Vibration, Natural Environment and Socio-Economic Land Use for review - April 5, 2022

Invitation to participate in upcoming fieldwork for Stage 3 Archaeological Assessment, Noise Vibration Baseline Monitoring, Phase II Environmental Site Assessment and Natural Environment surveys including Confirmation Ecological Land Classification and Plant List Collection, Significant Wildlife Habitat and Species at Risk Habitat assessment, Tree Inventory and Fish and Fish Habitat assessments (see studies and fieldwork dates in Appendix I-5 Table 1)- May 19 2022.

Engagement with the identified Indigenous communities and Nations began in January, 2022. Each Indigenous community or Nation received a letter (via email) from the IRO regarding the Project on January 7th, followed by an initial project introduction meeting. Indigenous communities and Nations communicated which aspects of the Project they would prefer to be engaged for.

During Pre-Planning and TPAP consultation, the IRO shared the Notice of Commencement, draft EPR technical reports for review and comments, and invitations

to participate in upcoming fieldwork. The Indigenous communities and Nations have been provided with copies of the EPR and supporting documents for review and comment. Metrolinx has supported this review and been available to respond to comments and questions.

The Notice of Issue and subsequent Notice of Resumption were also shared with Indigenous communities and Nations.

The correspondence and feedback from received from the project notices, reports and field invitations can be found in Appendix I-5.

6.8.4 Meetings

The IRO facilitated the following meetings to discuss the Heritage Road Layover Project:

- Huron-Wendat Nation – February 18, 2022, and March 22, 2022
- Mississaugas of the Credit First Nation – February 18, 2022, March 22, 2022, May 19, 2022
- Six Nations of the Grand River - January 14, 2022, April 19, 2022, May 30, 2022.

To work towards a better understanding of the Project a workshop with Six Nations of the Grand River occurred on July 22, 2022 to review all the environmental findings presented in the EPR.

Metrolinx also met with the Haudenosaunee Confederacy Chiefs Council by way of the Haudenosaunee Development Institute to further discuss with the Nation since late July in order to facilitate their meaningful engagement moving forward.

Further details of the meetings held are provided in Appendix I-5.

6.8.5 Formal Feedback

A summary of feedback received from Indigenous communities and Nations regarding the Project is included in Appendix I-5.

6.8.6 Additional Engagement with Indigenous Communities and Nations

In addition to the formal engagement outlined above, the Metrolinx is committed to continued engagement with all interested Indigenous communities and Nations as the Project progresses.

7.0 Commitments to Future Work

7.1 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 outlined in Table 7.2-1, 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.

7.1.1 Federal

The Regulations Designating Physical Activities under the federal *Impact Assessment Act (CIAA, 2019)* identify the physical activities (e.g., types of projects) that constitute "designated projects" that may require a Federal EA. A review of the Regulations was carried out by Metrolinx within respect to the Project. Based on this review, this Project does not constitute a designated project under *CEAA, 2012*.

CIAA, 2019 also outlines requirements for determination of the likelihood of significance environmental effects for a physical activity that is carried out on federal lands, or outside of Canada, in relation to a physical work and that is not a designated project (Section 82 of *CIAA 2019)*. All of the proposed work for the Project will be carried out on lands to be owned by Metrolinx. As such, the requirements under *CIAA, 2019* do not apply.

At the time of publication no Federal permits or approvals are anticipated for the Project, however, based on the planned disturbance on identified watercourses containing fish habitat, a Request for Review will be submitted to DFO to determine if a *Fisheries Act* authorization is required.

The federal Species at Risk Act (S.C. 2002, c. 29) may apply as the Halton Subdivision Kitchener Corridor is federally regulated land. Based on field investigations, no species regulated under the federal SARA were identified.

The federal Railway Safety Act is listed in Table 7.2-1 with its application to be determined.

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

7.1.2 Provincial

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

Ministry of the Environment, Conservation and Parks (MECP)

It is not anticipated that any permits will be required under the Ontario *Endangered Species Act*; however, if any SAR species are confirmed on or near the Project Site that may be affected by on-site activities, a Notice of Activity may be filed with MECP.

Dewatering activities were previously governed by the Permit to Take Water (PTTW) process in compliance with O. Reg. 387/04, issued under Section 34 of the *Ontario Water Resources Act* (OWRA), 1990, for temporary water takings from the environment that exceed 50,000 litres/day. This includes water drawn from groundwater and surface water. However, in March 2016, the MECP introduced a new water taking regulation (O. Reg 63/16) allows for construction related dewatering to proceed under the Environmental Activity Sector Registry (EASR) requirements if dewatering volumes are above the O. Reg 387/04 threshold (e.g., 50,000 litres/day) but below 400,000 litres/day.

The need for dewatering during construction activities will be confirmed prior to construction, as will the permitting/registration requirements. The requirements for dewatering during construction are dependent on the locations, depth and extent of excavation required for the Project. Significant dewatering is not anticipated during operations, however if excavations encounter a high water table and groundwater dewatering is required during operations, additional mitigation measures may be necessary.

The on-site and excess soil management during construction will be governed by *Ontario Regulation 406/19,* which is being phased in over time as follows:

- The on-site and excess soil management during construction will be governed by Ontario Regulation 406/19, which is being phased in over time, as follows:
- January 1, 2021: reuse rules, including risk-based standards, waste designation and approvals;
- January 1, 2022: testing, tracking and registration (some exemptions apply); and
- January 1, 2025: restrictions on landfilling soils.

In addition to the above-noted items, site servicing will be through provision of water via an on-site well, and sewage disposal will be through on-site storage and pump out for disposal off-site to a regulated facility. As such, there are potential requirements under the *Environmental Protection Act*, 1990, to obtain Environmental Compliance Approval (ECA) or EASRs for the following:

- Noise and Vibration;
- Stormwater;
- Groundwater & Surface Water;
- Water Supply; and,
- Sewage Works.

Ministry of Natural Resources and Forestry (MNRF)

In advance of fieldwork, a Licence to Collect Fish for Scientific Purposes under the Fish and Wildlife Act will be submitted as part of the requirement to capture and transport fish.

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

7.1.3 Municipal

At this time there is no municipal water, wastewater, or stormwater infrastructure in place to service the project. The lands that include the Project Site are presently serviced privately with wells and septic. However, exclusive of site servicing, a range of municipal permits and approvals may be required for the project. As a Crown Agency of the Province, Metrolinx 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. In other instances, appropriate permits and approvals shall be obtained. To provide construction access to the Project Site from Winston Churchill Boulevard, the Peel Region Occupancy Permit shall be obtained.

Brampton is currently implementing the adopted Heritage Heights Secondary Plan that will guide future urban development in the westerly portion of the municipality, including the Project Site. As plans are advanced for future municipal water, sanitary, and storm servicing these will be reviewed during detailed design. Brampton, and the Regional Municipality of Peel (the Region), will be consulted with during the detailed design process to address impacts to municipal water, sanitary, and storm sewer systems.

A portion of the Project Site is designated as a natural heritage system in the draft Heritage Heights Subwatershed Study (HHSWS). To maintain planned functions for watercourses on the Project Site, Metrolinx has expressed a commitment to be part of the design solution in alignment with recommendations provided in the draft HHSWS for any loss of locally significant wetland and turtle habitat. Communication and engagement with Brampton, the Region, and Halton Hills shall continue as design and construction planning progress to address municipal interests.

7.1.4 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 Credit Valley Conservation 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 CVC will continue as design and construction planning progress to address matters related to their mandate.

7.1.5 Utilities

Coordination with both Brampton and the Region, and the relevant private utilities will be undertaken as design and construction planning progress. Electrical feed to the Project Site will be provided by Alectra Utilities. 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.

7.2 Summary of Permits and Approvals

A preliminary list of the potentially applicable permitting and approval requirements for the Project are identified in Table 7.2-1. Additional requirements may be identified or confirmed during detailed design, or as ongoing consultation progresses.

Table 7.2-1: Summary of Permits and Approvals

Permits, Licences and Approvals	Regulatory Authority	Legislation & Regulation
Federal		
Fisheries Request for Review	DFO	Fisheries Act, (RSC, 1985, c. F-14)
TBD	Environment and Climate Change Canada (ECCC)	Species at Risk Act, (S.C. 2002, c. 29)
TBD	Transport Canada	Railway Safety Act, (1985, c. 32 [4th Supp.])
Damage or Danger Permit[6]	ECCC	Migratory Birds Convention Act (1994, c. 1035)
Provincial		
Notice to Proceed	MECP	*Environmental Assessment Act O. Reg 231/08* (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
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
Excess Soil management	MECP	Ontario Regulation 406/19
Hazardous Waste Information Network Registry (HWIN)	MECP	Environmental Protection Act (O. Reg. 347)
Compliance with Fish and Wildlife Conservation Act (Licence to Collect Fish for Scientific Purposes and Wildlife Collector's Authorization)	MNRF	Fish and Wildlife Conservation Act S.O. 1997, c. 41 (December 10, 2019), Section 7

[6] Damage or Danger Permit for birds regulated under the Migratory Convention Act is applicable during operations since during construction, birds are to be protected following required mitigation measures.

Permits, Licences and Approvals	Regulatory Authority	Legislation & Regulation
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	MTCS	Ontario Heritage Act
Stage 1 & 3 Archaeology Assessment Sign off	MTCS	Ontario Heritage Act
Municipal		
Tree Preservation By-law, for any properties that are not Metrolinx owned, where applicable.	Municipality	City of Brampton By-law 317-2012
Road Occupancy Permit	Regional Municipality	Region of Peel
Credit Valley Conservation		
Voluntary Project Review	Conservation Authority	Ontario Regulation 155/06

7.3 Commitments and Future Work

The EPR commitments have been developed to satisfy the requirements of O. Reg. 231/08 and facilitate the creation of the proposed Heritage Road Layover in accordance with the mitigation measures and monitoring activities described in this report. The implementation should not result in a negative effect on the natural environment, cultural heritage, or surrounding community. 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 7.3-1.

Table 7.3-1: Summary of Commitments and Future Work

Discipline	Commitments
Field Work	
Natural Environment	A spring freshet survey will be completed in spring 2023 to further assess conditions prior to construction.
Detailed Design	
General	Implement mitigation measures and monitoring requirements as outlined in Table 4.13-1. Develop/undertake and implement prior to construction design and management plans in accordance with the specific mitigation measures identified through the effects assessment and listed in Table 4.13-1. The Project Site is in the City of Brampton and Study Area for most project disciplines includes both the City of Brampton and

	Regional Municipality of Halton Hills. Metrolinx will confirm that any municipal input is addressed prior to commencement of construction activities. All required permits and approvals shall be obtained. As a Crown Agency of the Province of Ontario, Metrolinx is exempt from certain municipal processes and requirements. Water, sanitary, and storm servicing will be reviewed during detailed design. No municipal water, sanitary, and storm sewer systems are expected to be impacted. Communication and engagement with the surrounding community, municipalities, and conservation authority, shall continue as design and construction planning progress. To maintain planned functions for watercourses on the Project Site, Metrolinx has expressed a commitment to be part of the design solution in alignment with recommendations provided in the draft HHSWS for any loss of locally significant wetland and turtle habitat. Final detailed monitoring plans will be developed as part of detailed design activities.
Natural Environment	Watercourse CRT1-2 is regulated (medium constraint) and provides seasonal fish habitat. Metrolinx will consult with CVC on culvert options during detailed design. An Arborist Report will be prepared as part of the detailed design.
Hydrogeology	Geotechnical and hydrogeology studies will be undertaken in accordance with applicable permitting and approval requirements. Appropriate dewatering strategies will be confirmed in coordination with the relevant municipality and conservation authority and permits and approvals, if required, will be determined during detailed design and implemented during construction. The quantity control criteria will be for the post to pre-development control up to the 100-year Design storm event, per the City's recommendations. The Project Manager at the CTC Source Protection Authority will be contacted to identify policies in source protection that may apply to the Heritage Road Layover Project. This will be done as part of the development of Detailed Design. A water balance will be completed as part of a separate report, which will assist in assessing this groundwater recharge issue.

Cultural Heritage	No known or potential built heritage resource or cultural heritage landscape properties were found to be directly affected by the construction or operations of the Project.
Archaeology	No demolition, construction, grading or other soil disturbances will occur within the Project Site prior to the MTCS confirming in writing that all archaeological licensing and technical review requirements have been satisfied. Stage 3 AA for site AjGx-267 and where recommended, Stage 4 AA will be undertaken by a licensed archaeologist in summer and fall 2022, prior to the completion of detail design, and submitted to MTCS for review. Metrolinx will confirm that any Archaeological Assessment reports submitted to MTCS for review have been entered into the Ontario Public Register of Archaeological Reports prior to commencing any ground disturbing activities.
Traffic and Transportation	Municipal paramedic services will be given an opportunity to review emergency response plans and access/egress points to construction sites.
Climate Change	Investigate in detail the effects of weather extremes (temperature, rainfall, wind, freezing rain), snow drifting and other climate related impacts on the yard and define the extent of maintenance and rail operational problems to be expected. Incorporate mitigating measures into the design.
Construction	
General	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. An Environmental Mitigation and Monitoring Plan (EMMP) will be developed and implemented prior to construction to outline the responsibilities for carrying out monitoring activities.
Sustainability	A Sustainability Plan will be developed and implemented prior to construction to identify methods for reducing climate change impacts that may occur during the construction and operations of the Project. A Construction and Demolition Waste Management Plan will be developed and implemented to establish waste diversion goals and identify opportunities for recycling and reuse of construction materials.

	An Energy and Emissions Management Plan will be developed and established with targets and programs to promote continuous reduction of energy and emissions (both GHG and CAC).
Natural Environment	An Erosion and Sediment Control Plan and a Spill Prevention and Response Plan will be developed and implemented to limit sedimentation and pollution of storm sewer infrastructure. Any tree adjacent to a construction area will be protected by a Tree Protection Zone or permitted for injury or removal and compensated for accordingly with Metrolinx Vegetation Guidelines followed at a minimum. Any vegetation removal will be outside of the applicable timing windows of April to end of August. An Arborist Report will be provided based on field assessments completed by a certified arborist. Develop and undertake; Salt Management Plan, Soil Management Plan, and Vegetation Management Plan. Any in-water work will be outside the applicable timing windows. A Pollinator Health Action Plan will be developed and implemented to protect pollinators in Ontario.
Hydrogeology	A Groundwater Management and Dewatering Plan will be prepared and implemented.
Socio-Economic and Land Use	Surrounding property owners and tenants will be informed of anticipated upcoming construction works.
Air Quality	Adherence to the site-specific mitigation and monitoring recommendations identified in the Air Quality Impact Assessment Report (Appendix A).
Noise and Vibration	The appointed contractor will be responsible for ensuring equipment meets the sound level limits referenced in the Construction Noise and Vibration Assessment Report (Appendix B).
Traffic and Transportation	Construction lane and turning widths will accommodate emergency vehicles. A Traffic Control Plan will be created for any proposed lane closures. No road detours or temporary sidewalks are anticipated for this project. Current goods movement routes in Peel Region will be verified at the time of construction.

	The construction schedules for the Heritage Road Layover and for the reconstruction of Winston Churchill will be coordinated to reduce any impacts to the surrounding communities.
Operations	
General	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	Noise sources will meet the MECP allowable levels under the NPC-300 criteria. If necessary, appropriate noise mitigation will be applied.

7.4 Environmental Mitigation and Monitoring Plan

The Environmental Mitigation and Monitoring Plan will be completed in detailed design by the Proponent and will provide a summary of the mitigation measures that are required to be implemented prior to / during construction in order to effectively mitigate the Project's potential impacts and satisfy legislative requirements.

7.5 Future Engagement and Consultation

Metrolinx has committed to ensuring that consultation with project stakeholders (government agencies, elected officials, members of the public) and engagement with Indigenous communities and Nations will continue beyond the TPAP for the Project.

7.5.1 Engagement with Indigenous Communities and Nations

Metrolinx will continue to engage with the Indigenous communities and Nations through the Indigenous Relations Office as the Project proceeds through detailed design, field investigations are conducted, and construction proceeds.

7.5.2 Public Consultation

Metrolinx is committed to continuing to consult and communicate with stakeholders and other interested parties beyond the TPAP. Specifically, Metrolinx will:

Design and implement a response strategy to address/resolve potential construction-related concerns.

Maintain the Project website throughout the detailed Design and construction phases where the public can access updated information on the Project.

Continue discussions/consultation with project stakeholders (government agencies, elected officials, members of the public) and Indigenous communities, as required.

7.5.3 Agency Consultation

In addition to carrying out the TPAP process, there are a number of additional federal, provincial, municipal and other permit and approval processes that Metrolinx will follow. Further details are outlined in Section 7.2 of this EPR.

As a part of obtaining permits and approvals, Metrolinx will consult with permitting agencies, and follow associated public notification or consultation practices as applicable.

Metrolinx will continue to consult with the MECP, MNRF, MTCS and CVC, along with other interested agencies as the detailed design is advanced. This will include opportunities to refine design elements to maintain or enhance ecological function, and receive additional design-specific site information and management plans as this detail is made available.

7.5.4 Consultation with Elected Officials

As a part of Metrolinx's ongoing efforts to keep the community informed throughout the design and construction of the proposed works, Metrolinx welcomes inquiries and comments from elected officials wishing to keep their electorate informed. As the Project advances, project updates will be posted to the Project website.

8.0 References

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