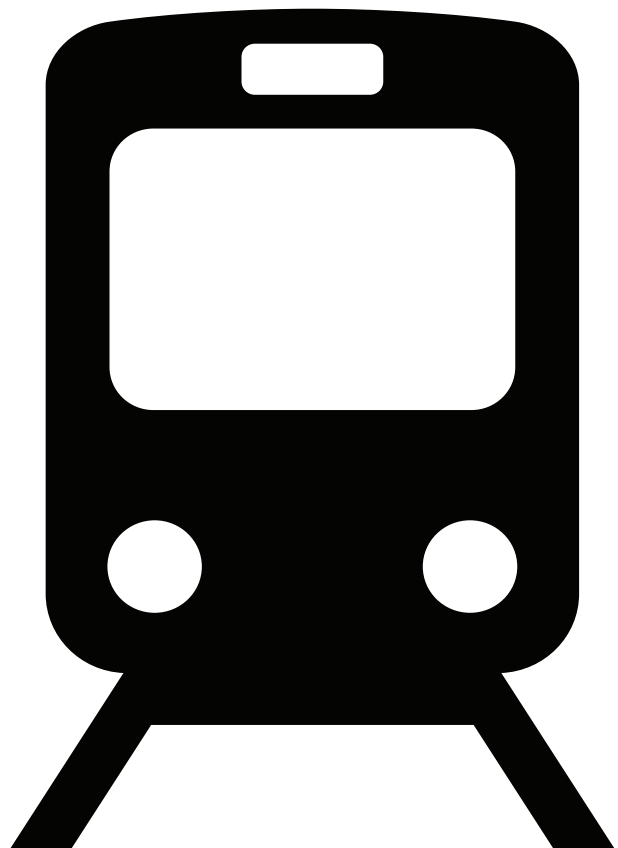

EGLINTON CROSSTOWN WEST EXTENSION

ENVIRONMENTAL PROJECT REPORT – 2020 ADDENDUM

JUNE 2020



Metrolinx
Eglinton Crosstown West Extension
Contract: TC85-3A

Eglinton Crosstown West Extension Environmental Project Report Addendum

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Appendix J - Cultural Heritage Evaluation Report: Mary Reid House
Appendix K - Consultation Report

Acronyms

AQIA	Air Quality Impact Assessment
AQMP	Air Quality Management Plan
BHR	Built Heritage Resource
BMP	Best Management Practice
BRT	Bus Rapid Transit
C&C	Cut-and-Cover
CHAR	Cultural Heritage Assessment Report
CHER	Cultural Heritage Evaluation Report
CHL	Cultural Heritage Landscape
CHR	Cultural Heritage Resources
CHVI	Cultural Heritage Value or Interest
CO	Carbon Monoxide
COC	Contaminants of Concern
CoM	City of Mississauga
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COT	City of Toronto
CP	Cross Passage
CPR	Canadian Pacific Railway
DFO	Department of Fisheries and Oceans Canada
E&S	Erosion and Sedimentation
EASR	Environmental Activity and Sector Register
ECA	Environmental Compliance Approval
ECLRT	Eglinton Crosstown Light Rail Transit
ECWE	Eglinton Crosstown West Extension
EEB	Emergency Exit Building
ELC	Ecological Land Classification
EMI	Electromagnetic Interference
EPR	Environmental Project Report
ES	Extraction Shaft
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
ESR	Environmental Study Reports
FTA	Federal Transit Administration
GTAA	Greater Toronto Airports Authority
GTHA	Greater Toronto and Hamilton Area
HCCC	Haudenosaunee Confederacy Chiefs Council
HCM	Highway Capacity Manual
HIA	Heritage Impact Assessment
HONI	Hydro One Networks Inc.
IAA	Impact Assessment Act
IAAC	Impact Assessment Agency of Canada
IO	Infrastructure Ontario
IVM	Integrated Vegetation Management

LOS	Level of Service
LRV	Light Rail Vehicle
LRT	Light Rail Transit
LRTP	Long Range Transportation Plan
LS	Launch Shaft
MBCA	Migratory Birds Convention Act
MECP	Ministry of the Environment, Conservation and Parks
MEDJCT	Ministry of Economic Development, Job Creation and Trade
MFR	Multi-Family Residence
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MiWay	Mississauga Transit
MMAH	Ministry of Municipal Affairs and Housing
MNRF	Ministry of Natural Resources and Forestry
MOE	Measures of Effectiveness
MOEE	Ministry of Environment and Energy
MS	Maintenance Shaft
MSF	Maintenance and Storage Facility
MTO	Ontario Ministry of Transportation
MUP	Multi-Use-Pathway
NAPS	National Air Pollution Surveillance
NFPA	National Fire Protection Association
NO ₂	Nitrogen Dioxide
NPC-300	Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning
NVIA	Noise and Vibration Impact Assessment
O ₃	Ozone
OHA	Ontario Heritage Act
OPP	Ontario Provincial Police
O. Reg	Ontario Regulation
OMNR	Ontario Ministry of Natural Resources
PHP	Provincial Heritage Property
PHPPS	Provincial Heritage Property of Provincial Significance
PM	Particulate Matter
PPS	Provincial Policy Statement
PTTW	Permit to Take Water
QP	Qualified Person
RMS	Root-Mean-Square
ROW	Right-of-Way
RTP	Regional Transportation Plan
S&G	Standards and Guidelines for Consultant Archaeologists
SAC	Spills Action Centre
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk in Ontario

SCP	Strategic Conservation Plan
SFR	Single Family Residence
SoCC	Species of Conservation Concern
STP	Signal Timing Plan
SUE	Subsurface Utility Engineering
SWH	Significant Wildlife Habitat
SWM	Stormwater Management
TBM	Tunnel Boring Machine
TCDSB	Toronto Catholic District School Board
TDSB	Toronto District School Board
TMC	Traffic Movement Counts
TMP	Transportation Master Plan
TPAP	Transit Project Assessment Process
TPSS	Traction Power Substation
TRCA	Toronto and Region Conservation Authority
TSP	Total Suspended Particles
TTC	Toronto Transit Commission
UIRP	Utility Infrastructure Relocation Plan
UMcA	Unterman McPhail Associates
V/C	Volume to Capacity Ratio
ZOI	Zone of Influence

E.1 Executive Summary

Metrolinx has proposed a number of changes to the Eglinton Crosstown Light Rail Transit (ECLRT) Project, completed in 2010, in the segment between Mount Dennis Station in the City of Toronto (CoT) and Renforth Drive in the City of Mississauga (CoM). The proposed changes were determined to be inconsistent with the previously approved 2010 Environmental Project Report (EPR) and 2013 EPR Addendum.

In accordance with *Ontario Regulation (O. Reg) 231/08*, the significance of the Project changes has been assessed and are determined to be significant for the following reasons:

- The environmental effects of a change in alignment and the shift to either elevated or tunnelled portions rather than at-grade were not addressed in the 2010 EPR and 2013 EPR Addendum;
- The number of stations proposed has changed since the 2010 EPR and the environmental effects of the revised station footprints and locations were not addressed in the 2010 EPR and 2013 EPR Addendum; and
- The environmental effects of design modifications including the approach to spanning the Humber River, and ancillary features including Emergency Exit Buildings (EEB), as well as construction methods that have changed since the 2010 EPR.

This document serves as an Addendum to the 2010 EPR to address the changes to the existing environmental conditions, vertical and horizontal alignments, and stations that have been revised from the assessment completed in the 2010 EPR and 2013 EPR Addendum in the segment between Mount Dennis Station and Renforth Drive.

E.1.1 Study Purpose

In April 2019, the Government of Ontario announced a \$28.5 billion expansion to Ontario's transit network. This rapid transit project plan includes the Eglinton Crosstown West Extension (ECWE), as part of the ECLRT Project, from Mount Dennis Station to Lester B. Pearson International Airport.

The CoT and the Toronto Transit Commission (TTC) completed an Environmental Project Report (2010 EPR) for the ECLRT between Kennedy Road and Lester B. Pearson International Airport in March 2010. The Project was granted Notice to Proceed from the Minister of the Environment, Conservation and Parks (MECP) (formally the Minister of the Environment). In 2012, Metrolinx became the sole proponent of the project. In 2013, Metrolinx completed an EPR Addendum (2013 EPR Addendum) for the changes to the approved transit project between Keele Street and Jane Street.

Since the completion of the 2010 EPR and 2013 EPR Addendum, a number of changes have been proposed to the segment of the ECLRT project between Mount Dennis Station and Renforth Drive, known as the Eglinton Crosstown West Extension (ECWE; the Project). These changes to the Project were determined to be inconsistent with the 2010 EPR and 2013 EPR Addendum and were deemed to be significant, warranting an Addendum to the

EPR. As described in Section 15 (1) of *O. Reg. 231/08*, any change that is inconsistent with a previously approved EPR requires a reassessment of the impacts associated with the change, the identification of potentially new mitigation measures, and potentially new monitoring systems in an Addendum to the previously approved EPR. The purpose of this EPR Addendum is to document these requirements as prescribed in Section 15 (1) of *O. Reg. 231/08*.

A connection to Lester B. Pearson International Airport (originally part of the 2010 ECLRT Project) was not considered under this study.

E.1.2 Summary of Proposed Design Changes

The proposed design changes currently being assessed in accordance with *O. Reg. 231/08* are as follows:

Vertical Alignment

- The Project alignment (approximately 9.2 km in length) will run mostly underground along Eglinton Avenue West from the future Mount Dennis ECLRT Station in the CoT to Renforth Drive in the CoM;
- The Project will be underground from Mount Dennis Station to east of Jane Station; elevated east of Jane Street to west of Scarlett Road; underground from west of Scarlett Road to east of the Renforth portal; and transitions to partially at-grade to Renforth Station;
- The Project features three portals, which serve as approach entrances where the alignment transitions between underground and elevated, at the following locations:
 - East of Jane Street;
 - West of Scarlett Station; and
 - West of Renforth Drive.

Stations and Ancillary Features

There will be a total of seven stations between Mount Dennis Station and Renforth Drive:

- Scarlett and Jane Stations will be elevated;
- Martin Grove, Kipling, Islington and Royal York Stations will be below grade and include associated ancillary features (e.g., vent shafts, Traction Power Substations (TPSSs); EEBs, Cross Passages (CPs)); and
- The new terminal station at Renforth will be partially at-grade.

Emergency Exit Buildings

Six new EEBs are located along the underground portion of the alignment at the following locations:

EEB-1 - located near 4000 Eglinton Avenue West, east of Royal York Road;

EEB-2 - located west of Russell Road and Eden Valley Drive;

EEB-3 - located east of Wincott Drive/Bemersyde Drive;

EEB-4 - located west of Mimico Creek;

EEB-5 - located between the on and off ramps of Highway 427; and

EEB-6 - located immediately west of the hydro corridor at Eglinton Avenue West.

Construction

The underground section will be constructed using a Tunnel Boring Machine (TBM) between stations and a Cut-and-Cover (C&C) method at stations and portal locations. A proposed Extraction Shaft (ES), Maintenance Shaft (MS), and Launch Shaft (LS) for the TBM will be located in the following areas:

- A LS for the TMB will be located adjacent to Renforth Station;
- A MS will be located near the west end of the Islington Station. This will be removed at the end of construction; and
- An ES for the TBM will be located west of Scarlett Road.

A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two elevated stations (i.e., Jane Station and Scarlett Station).

Table 1-1 in Section 1 compares the project components, as assessed in the 2010 EPR and 2013 EPR Addendum, against the proposed design changes currently being assessed for this Project and provides a rationale for these changes.

The conceptual design for these design elements are illustrated in the set of drawings in Appendix A.

E.1.3 Existing Conditions and Effects

The existing environmental conditions in the study area described in the 2010 EPR and 2013 EPR Addendum were reviewed for applicability to conditions at the time of this Addendum (2020). Environmental disciplines were assessed by practitioners using industry standard techniques and Metrolinx-specific protocols, where necessary. Discipline-specific environmental investigations and/or review was undertaken to document the existing conditions for the following disciplines:

- Hydrogeology/Groundwater;
- Surface Water/Drainage;
- Natural Environment;
- Air Quality;
- Noise and Vibration;
- Socio-Economic and Land Use Characteristics;

- Archaeology;
- Cultural Heritage;
- Municipal Service and Utilities; and
- Transportation and Traffic.

Existing conditions information for each discipline is provided in Section 3.

Technical reports and/or memos are provided for relevant disciplines in Appendix B to Appendix H. The updated study area conditions formed the basis for the impact assessment carried out under this EPR Addendum.

An assessment and evaluation of the potential effects that the Project may have on the environment was completed for each aforementioned environmental discipline. Mitigation measures have been proposed for the construction and operations phase for each environmental discipline.

The effects assessment, including potential effects, mitigation and monitoring during construction and operations, for each discipline is provided in Section 4.

E.1.4 Summary of Consultation/Engagement Activities

In accordance with Section 8 of *O. Reg. 231/08*, consultation/engagement activities were carried out with members of the public, property owners, review agencies, Indigenous communities and other stakeholders during the course of the EPR Addendum process, including a summary of feedback and comments received.

As part of the consultation/engagement program for the Project, an online public consultation process was initiated to share information and seek feedback on the updates to the Project description and environmental studies underway. The primary method used to engage the community was an Online Public Information Session, due to the ongoing COVID-19 pandemic. The online consultation was accessible from the Project website and ran from April 1, 2020 until April 10, 2020. The online consultation included display boards, a video narration, and an opportunity to ask questions about the project materials.

Notification of the Online Public Information Session was accomplished through a variety of media between March 24 and April 2, 2020, including social media and website posts; postcard mailout via Canada Post to approximately 14,150 residents within a 100 m radius of Eglinton Avenue West; direct mail to residents within a 50 m radius of Eglinton Avenue West; registered mail; email; and Project webpage posting. Additionally, newspaper ads were published in relevant area newspapers between March 18 and March 27, 2020.

All stakeholder and public consultation is summarized in Section 5 and all records of consultation are provided in Appendix K.

E.1.5 Future Work and Project Implementation

Commitments to future work have been developed to satisfy the requirements of *O. Reg. 231/08*. The purpose of the commitments is to facilitate the implementation of the Project in accordance with the mitigation measures and monitoring activities described within this EPR Addendum. In addition to the commitments to future work, permits and approvals to be obtained for the proposed works have been outlined and may identify the need for additional mitigation measures. Any additional mitigation measures required in connection with a permit or approval shall be implemented.

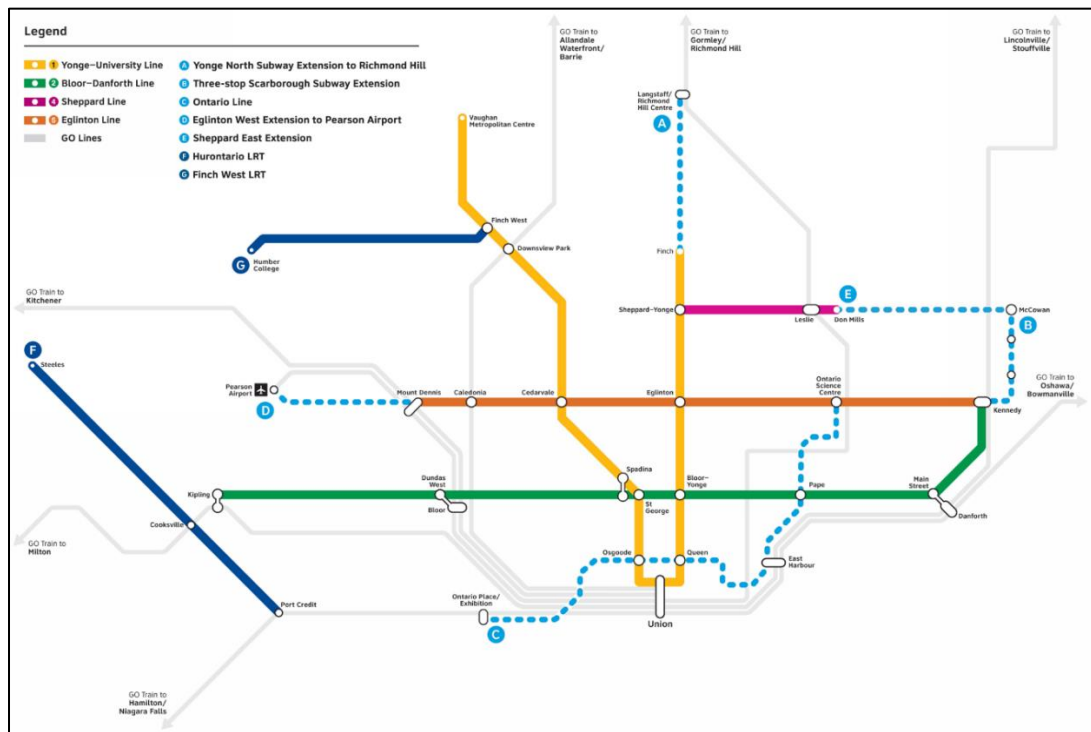
All applicable permits, licences, approvals and monitoring requirements under environmental laws shall be reviewed, confirmed and obtained by Metrolinx prior to the construction of the Project.

A summary of all permits, approvals and future commitments is provided in Section 6.

1. Introduction

1.1 Study Purpose

In April 2019, the Government of Ontario announced a \$28.5 billion expansion to Ontario's transit network in an effort to bring relief and new opportunities to transit users and commuters. This rapid transit project plan includes four key initiatives including: the Ontario Line, the Yonge North Subway Extension, the three-stop Scarborough Subway Extension, and the Eglinton West Extension, as part of the Eglinton Crosstown Light Rail Transit (ECLRT) Project, from Mount Dennis Station to Lester B. Pearson International Airport (Figure 1-1).



Source Infrastructure Ontario, 2019

Figure 1-1: Ontario's Rapid Transit Expansion Plan

The City of Toronto (CoT) and the Toronto Transit Commission (TTC) completed an Environmental Project Report (2010 EPR) for the ECLRT between Kennedy Road and Lester B. Pearson International Airport in March 2010. The Project was granted Notice to Proceed. In 2012, Metrolinx became the sole proponent of the project. In 2013, Metrolinx completed an Environmental Project Report (EPR) Addendum (2013 EPR Addendum) for the changes to the approved transit project between Keele Street and Jane Street.

Since the completion of the 2010 EPR and 2013 EPR Addendum, a number of changes have been proposed to the segment of the ECLRT project between Mount Dennis Station in the CoT and Renforth Drive in the City of Mississauga (CoM), known as the Eglinton Crosstown West Extension (ECWE) (the Project). The changes to the Project, which are described in

more detail in this Addendum, were determined to be inconsistent with the 2010 EPR and 2013 EPR Addendum. Under the *Ontario Environmental Assessment Act*, any change that is inconsistent with a previously approved EPR requires a reassessment of the impacts associated with the project, and the identification of potentially new mitigation measures and new monitoring systems in an Addendum to the previously approved EPR.

This document serves as an Addendum to the 2010 EPR to address the changes to the existing environmental conditions, vertical and horizontal alignments, and stations that have been revised from the assessment completed in the 2010 EPR and 2013 EPR Addendum in the segment between Mount Dennis Station and Renforth Drive. This section introduces the changes to the Project, the purpose for this Addendum and the process that was followed under *Ontario Regulation (O. Reg.) 231/08*, and presents the context by describing planning policies that applied to this study.

1.2 Study Background

On May 17, 2010, the Minister of the Environment, Conservation and Parks (MECP) (previously the Minister of the Environment; the Minister) for the Province of Ontario issued a Notice to Proceed to the CoT and the TTC, as co-proponents, for the ECLRT Project, a 33-kilometre electrically-powered Light Rail Transit (LRT) line extending from the Lester B. Pearson International Airport in the CoM to Kennedy Station in the CoT. The basis for that Notice was the Environmental Project Report prepared in 2010 (2010 EPR) as part of the *Transit Project Assessment Process (TPAP)* found in *O. Reg. 231/08* under the *Ontario Environmental Assessment Act*.

Subsequently, in 2012, Metrolinx became the sole proponent for the ECLRT Project and initiated an EPR Addendum for changes to the approved ECLRT Project between Keele Street to Jane Street, which included the addition of a Maintenance and Storage Facility (MSF) at Black Creek Drive. An assessment of these changes from the 2010 EPR was documented in the 2013 EPR Addendum. After a 30-day public comment period, and the 35-day review by the Minister, the Minister issued a Notice to Allow a Change to the Transit Project in accordance to *O. Reg. 231/08* in December 2013. Construction of the ECLRT Project is currently underway between Kennedy Station and Mount Dennis Station.

1.3 Summary of Proposed Design Changes

The ECWE 2020 EPR Addendum addresses changes to existing environmental conditions, vertical and horizontal alignments, and stations from what were previously assessed in the 2010 EPR and 2013 EPR Addendum for the segment of Eglinton Avenue West between Mount Dennis Station and Renforth Drive (as identified in Figure 1-2). The 2010 EPR (West Segment) study limits is shown in Figure 1-3.

A connection to Lester B. Pearson International Airport (originally part of the 2010 ECLRT Project) is also being considered. This planned connection, between Renforth Drive and Lester B. Pearson International Airport, will be assessed separately in accordance with the addendum process prescribed in *O. Reg. 231/08*.

A summary of the key differences between the 2010 EPR, 2013 EPR Addendum and the 2020 EPR Addendum are highlighted in Table 1-1.

Eglinton Crosstown West Extension Environmental Project Report Addendum

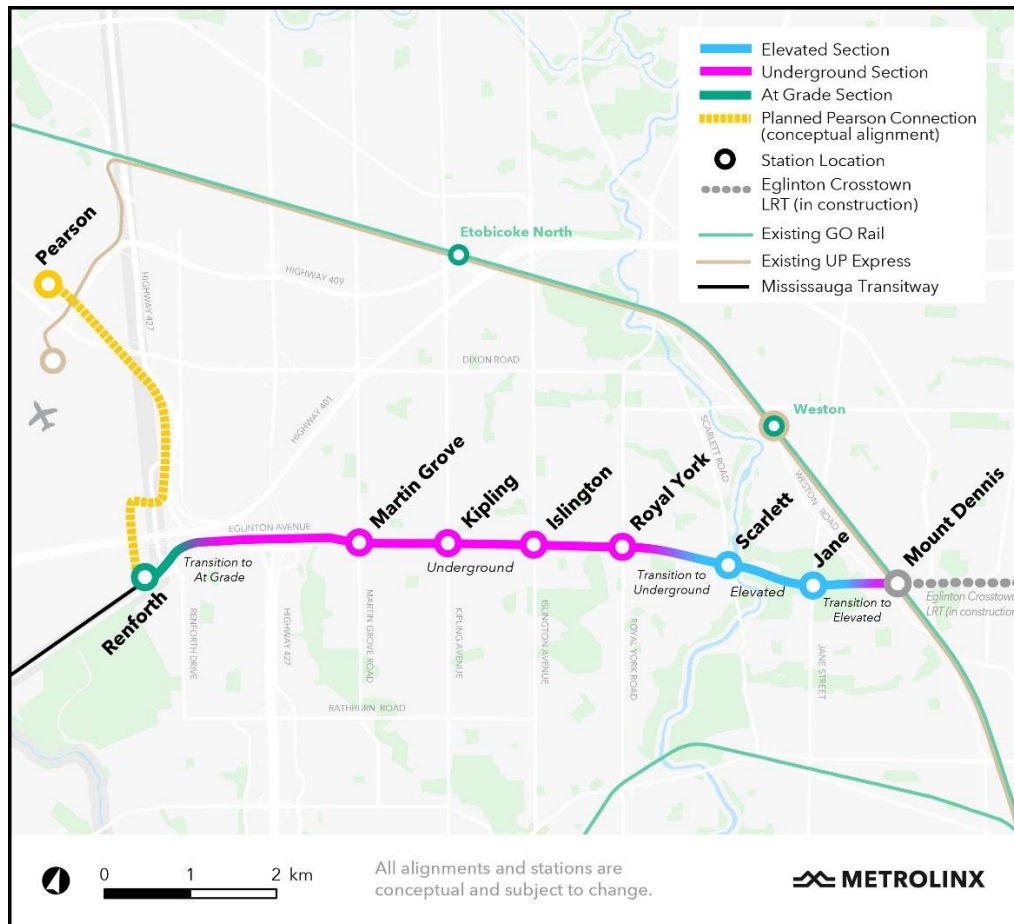


Figure 1-2: Eglinton Crosstown West Extension Key Plan

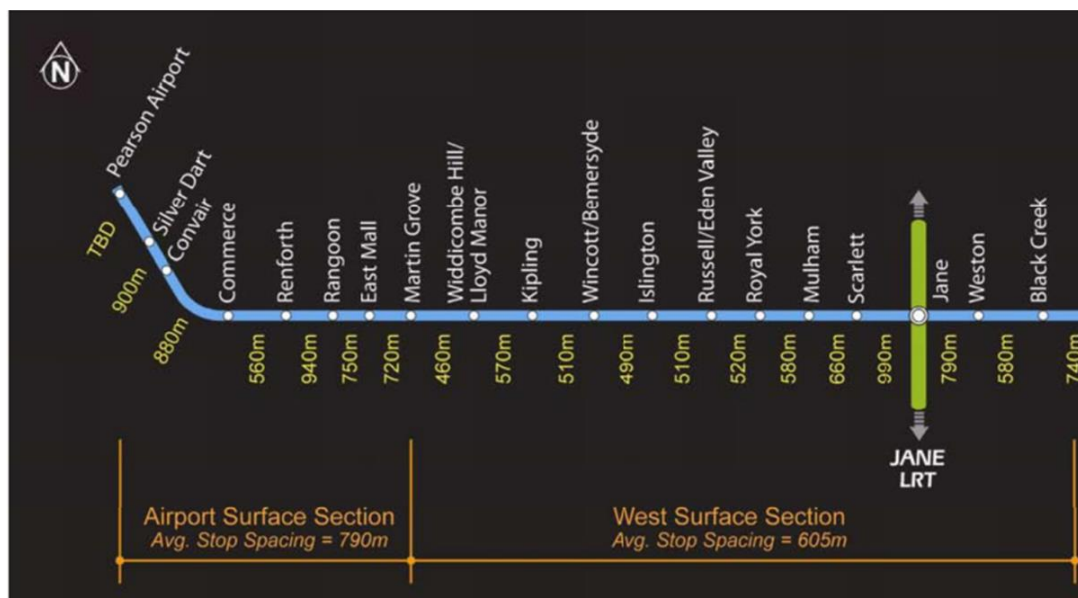


Figure 1-3: 2010 EPR (West Segment) Key Plan

Table 1-1: Differences between 2010 EPR and 2020 EPR Addendum

Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
Vertical Alignment	<p>The 2010 EPR proposed:</p> <ul style="list-style-type: none"> An at-grade alignment from Lester B. Pearson International Airport to Weston Road with a new bridge over Highway 401 to connect Convair Drive to Commerce Boulevard; and Operational crossovers and storage (pocket) tracks between Commerce Boulevard and Renforth Drive and east of the Martin Grove Road stop to provide operational flexibility and allow LRT vehicles to change travel directions from one track to another. <p>In the 2013 EPR Addendum, changes to the alignment were proposed including:</p> <ul style="list-style-type: none"> Revised LRT alignment between Jane Street and Keelesdale Park from surface alignment with surface stops to a completely grade-separated alignment; Revised track alignment connecting the mainline and the proposed Black Creek MSF from an at-grade connection to a grade-separated connection; and 	<ul style="list-style-type: none"> Below grade alignment from Mount Dennis Station to east of Jane Street; Elevated guideway from east of Jane Street to west of Scarlett Road; Below grade alignment from west of Scarlett Road to west of Renforth Drive; Partially below grade alignment from Renforth Drive to Renforth Station; Portal located just east of Jane Street when the alignment transitions from underground to the elevated guideway; Portal for the advanced tunnelled construction located west of Scarlett Station; and Portal located west of Renforth Drive. 	<p>The change in alignment from at-grade to underground and elevated provides:</p> <ul style="list-style-type: none"> More reliable service due to full grade separation; Higher level of protection from severe weather; Increased number of Greater Toronto and Hamilton Area (GTHA) jobs accessible by transit in 45 minutes; Greater reduction in Greenhouse Gas emissions; Greater increase in GTHAs two-hour peak travel time savings; Larger increase in Transitway and Crosstown weekly boarding's to reduce the connectivity gap; Reduced property impacts; and Reduced potential flooding impacts at the Humber River crossing.

Eglinton Crosstown West Extension
 Environmental Project Report Addendum

Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
	<ul style="list-style-type: none"> New passenger tunnel connection under the GO Transit Kitchener Rail and Canadian Pacific Railway (CPR) corridors. 		
Stations and Ancillary Features	<p>The 2010 EPR proposed:</p> <ul style="list-style-type: none"> 17 median surface stops at Jane Street, Scarlett Road, Mulham Place, Royal York Road, Russell Road/Eden Valley Drive, Islington Avenue, Wincott Drive/Bemersyde Drive, Kipling Avenue, Widdicombe Hill Boulevard/Lloyd Manor Road, Martin Grove Road, The East Mall, Rangoon Road, Renforth Drive, Commerce Boulevard, Convair Drive, Silver Dart Drive, and Pearson Airport. <p>In the 2013 EPR Addendum, considerations to stops and other ancillary features included:</p> <ul style="list-style-type: none"> Consolidation of the Weston Stop and the Black Creek Stop into one new underground Mount Dennis Station located at the GO Transit Kitchener Rail corridor; Addition of the Black Creek MSF site at Mount Dennis; and Addition 15-bay bus terminal and Passenger Pick Up and Dropoff at the Mount Dennis Station. 	<p>A total of seven stations between Mount Dennis Station and Renforth Drive:</p> <ul style="list-style-type: none"> Scarlett and Jane Stations are elevated; Martin Grove, Kipling, Islington and Royal York Stations are below-grade with associated ancillary features (e.g., vent shafts, TPSSs, EEBs, CPs); and New terminal station at Renforth Drive is partially at-grade. Stations at Rangoon Road, The East Mall, Widdicombe Hill Boulevard/Lloyd Manor Road, Wincott Drive/Bemersyde Drive, Russell Road/Eden Valley Drive and Mulham Place were removed from the Project. 	<p>Change in number of stations provides benefits in terms of:</p> <ul style="list-style-type: none"> Construction complexity and cost for below-grade stations; and Reduced property impacts.

Eglinton Crosstown West Extension
 Environmental Project Report Addendum

Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
Emergency Exit Buildings (EEB)	No emergency exits along this section in either the 2010 EPR or the 2013 EPR Addendum as the alignment was at-grade.	Six EEBs at the following approximate locations: <ul style="list-style-type: none"> • EEB-1 - near 4000 Eglinton Avenue West, east of Royal York Road; • EEB-2 - west of Russell Road and Eden Valley Drive; • EEB-3 - east of Wincott Drive/Bemersyde Drive; • EEB-4 - west of Mimico Creek; • EEB-5 - between the on and off ramps of Highway 427; and • EEB-6 - immediately west of the hydro corridor at Eglinton Avenue West. 	Emergency exits for passengers and emergency access for fire fighters are required for tunnels under the National Fire Protection Agency (NFPA) Standard 130. The distance between EEBs and station platform must not exceed 762 m.
Construction	The 2010 EPR proposed: <ul style="list-style-type: none"> • At-grade construction between Mount Dennis and Renforth Drive with dedicated runningway along the centre line of Eglinton Avenue West, Commerce Boulevard, and Convair Drive; • C&C method will be used to construct stations, portals, and special track work; • Road widening, reconstruction of curb lines and associated sidewalk modifications; • Relocation of utilities and relocation of traffic signals and provision of temporary traffic signals; • Roadway resurfacing following roadway reconstruction; 	Elevated guideway from east of Jane Street to west of Scarlett Road. <ul style="list-style-type: none"> • Two elevated stations (Scarlett and Jane). There is potential for impacts to the pedestrian bridge west of Scarlett Road due to the portal; and • Underground section to be constructed using twin tunnelling method between stations and C&C method at stations and at portal locations. Underground tunnel construction approach: <ul style="list-style-type: none"> • A LS for the TBM will be located adjacent to Renforth Station, a MS will be located at the west end of Islington Station, and an ES for the TBM will be located west of Scarlett Road; • Install headwalls, where required, at both ends of EEBs and stations; • Tunnel structure constructed using precast concrete tunnel liner segments that are installed as the TBM progresses; 	Construction is required to build the alignment and new stations. Refer to the rationale for change listed under Vertical Alignment and Stations and Ancillary Features above.

Eglinton Crosstown West Extension
Environmental Project Report Addendum

Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
	<ul style="list-style-type: none"> Construct LRT facilities within the LRT Right-of-Way (ROW); Construct streetscaping and urban design elements and provide bicycle lanes on both sides of the roadway; Widening of the existing single span bridge structure over Mimico Creek to accommodate the LRT ROW; and Construction of a multi-span structure over Highway 401. <p>The 2013 EPR Addendum proposed:</p> <ul style="list-style-type: none"> C&C construction at Mount Dennis Station and locations of special track work (focused to 150 m long sections at each station), tail tracks and where the LRT emerges through a tunnel portal to match back into grade along the median of Eglinton Avenue West, and in the underground section west of Weston Road. 	<ul style="list-style-type: none"> Excavated soils will be removed from work site for off-site disposal; and EEBs will be constructed once the TBM has completed the tunnelling. Construction is similar to station construction. <p>As part of the above ground construction:</p> <ul style="list-style-type: none"> A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two elevated stations (i.e., Jane Station and Scarlett Station). Construction of the new bridge will include: <ul style="list-style-type: none"> Building foundations for piers; Constructing piers; Building and placing bridge sections; and Installing systems and track. 	

The proposed design changes currently being assessed in accordance with *O. Reg. 231/08* are as follows:

Vertical Alignment

- The Project alignment (approximately 9.2 km in length) will run mostly underground along Eglinton Avenue West from the future Mount Dennis ECLRT Station in the CoT to Renforth Drive in the CoM;
- The Project will be underground from Mount Dennis Station to east of Jane Station; elevated east of Jane Street to west of Scarlett Road; underground from west of Scarlett Road to east of the Renforth portal; and transitions to partially at-grade to Renforth Station;
- The Project features three portals, which serve as approach entrances where the alignment transitions between underground and elevated, at the following locations:
 - East of Jane Street;
 - West of Scarlett Station; and
 - West of Renforth Drive.

Stations and Ancillary Features

- There will be a total of seven stations between Mount Dennis Station and Renforth Drive:
 - Scarlett and Jane Stations will be elevated;
 - Martin Grove, Kipling, Islington and Royal York Stations will be below grade and include associated ancillary features (e.g., vent shafts, Traction Power Substations (TPSSs); Emergency Exit Buildings (EEBs), Cross Passages (CPs)); and
 - The new terminal station at Renforth will be partially at-grade.

Emergency Exit Buildings

Six new EEBs are located along the underground portion of the alignment at the following locations:

- EEB-1 - located near 4000 Eglinton Avenue West, east of Royal York Road;
- EEB-2 - located west of Russell Road and Eden Valley Drive;
- EEB-3 - located east of Wincott Drive/Bemersyde Drive;
- EEB-4 - located west of Mimico Creek;
- EEB-5 - located between the on and off ramps of Highway 427; and
- EEB-6 - located immediately west of the hydro corridor at Eglinton Avenue West.

Construction

The underground section will be constructed using a Tunnel Boring Machine (TBM) between stations and a Cut-and-Cover (C&C) method at stations and portal locations. A proposed Extraction Shaft (ES), Maintenance Shaft (MS), and Launch Shaft (LS) for the TBM will be located in the following areas:

- A LS for the TMB will be located adjacent to Renforth Station;
- A MS will be located near the west end of the Islington Station. This will be removed at the end of construction; and
- An ES for the TBM will be located west of Scarlett Road.

A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two elevated stations (i.e., Jane Station and Scarlett Station).

Table 1-1 compares the project components, as assessed in the 2010 EPR and 2013 EPR Addendum, against the proposed design changes currently being assessed for this Project and provides a rationale for these changes.

These changes to the Project, which are described in more detail in this Addendum, were determined to be inconsistent with the 2010 EPR. As described in Section 15 of *O. Reg. 231/08*, any change that is inconsistent with a previously approved EPR requires a reassessment of the impacts associated with the project, the identification of potentially new mitigation measures, and potentially new monitoring systems in an Addendum to the previously approved EPR.

1.3.1 Project Significance

In accordance with *O. Reg 231/08*, the significance of the Project changes has been assessed and are determined to be significant. The changes to the project are considered significant for the following reasons:

- The environmental effects of a change in alignment and the shift to either elevated or tunnelled portions rather than at-grade were not addressed in the 2010 EPR and 2013 EPR Addendum;
- The number of stations proposed has changed since the 2010 EPR and the environmental effects of the revised station footprints and locations were not addressed in the 2010 EPR and 2013 EPR Addendum; and
- The environmental effects of design modifications including the approach to spanning the Humber River, and ancillary features including EEBs, as well as construction methods that have changed since the 2010 EPR.

1.4 Study Area

The Addendum study area is identified along the Project alignment between Mount Dennis Station and Renforth Drive, as illustrated in Figure 1-2.

Additionally, a series of disciplinary studies were conducted in support of this Addendum report. Through discussions with Metrolinx at the onset of the Addendum process, there was

consensus that a 150 m buffer study area would be used from the proposed alignment. The study area limits specific to the studies prepared in support of this Addendum are identified in Table 1-2.

Table 1-2: Discipline Specific Study Areas

Report Section	Discipline	Study Area (m) & Rationale
Appendix B	Natural Environment	The Natural Environment Study Area extends 150 m from the proposed alignment as shown in Figure 3-1. The study area was determined in consideration of the design, construction and operation of the Project and potential effects to the natural heritage features present in the area. A study area of 120 m is generally accepted for environmental impact studies, with an additional 30 m added to account for any design changes.
Section 3.1	Surface Water/ Drainage	To assess surface drainage features, the Surface Water/ Drainage Study Area utilized the same study area as the natural environment study area as shown in Figure 3-1 which extends 150 m from the proposed elevated alignment. Due to the nature of drainage engineering work, impacted area that is beyond the 150 m buffer but hydraulically connected is also included for analysis.
Appendix C	Air Quality	The Air Quality Study Area extends 300 m from the proposed alignment and includes all potential on-ground sources of air emissions as shown in Figure 1-1 of Appendix C. These limits were considered applicable as predicted local air quality effects associated with roadways tend to drop off significantly at downwind distances greater than 300 m.
Appendix D	Noise and Vibration	The Noise and Vibration Study Area extends 300 m from the proposed alignment and from proposed above ground features as shown in Figure C-1 of Appendix D. The study area of 300 m was recommended by the Metrolinx Environmental Guide for Noise and Vibration Impact Assessment based on Metrolinx, MTO and other experience.
Appendix E	Socio-Economic Environment	The study area for socio-economic and land use characteristics assessment included a 500 m buffer of each station, as shown in supporting figures in Appendix E. The 500 m buffer provides an inclusive overview of the land use and site characteristics within the general station areas and alignment.
Section 3.3.1 and Appendix F	Archaeology	The study area utilized in the archaeological assessment extends 150 m from the proposed alignment as shown in Figure 3-6 in Section 3.3.1.
Appendix G	Cultural Heritage	The study area for the cultural heritage assessment is defined as 150 m from the proposed alignment including immediately adjacent properties, as shown in Figure A-1 of Appendix G. This is the study area established in the 2010 Unterman McPhail Associates (UMcA) report and is a typical approach for transit corridor studies in Cultural Heritage, as it considers both direct and indirect potential impacts to properties.
Section 3.4 and Appendix H	Traffic and Transportation	The Traffic and Transportation Study assessed the impact on the transportation network within the study limits of the 2020 EPR Addendum; therefore the Traffic and Transportation Study Area is the same as the 2020 EPR Addendum Study Area as shown above in Figure 1-2.

1.5 EPR Addendum Process

This Addendum is being carried out following *O. Reg. 231/08* under the Environmental Assessment Act. Section 15 (1) of *O. Reg. 231/08* requires an Addendum to the EPR for any changes made to the transit project following the statement of completion that are not considered to be consistent with the EPR.

The formal public and agency review processes and timelines for finalizing an Addendum to the EPR are similar to those for the EPR; however, the proponent has discretion regarding the scope of public consultation. Metrolinx undertook a consultation program as described in Section 1.7.

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

- Complete assessment of any impacts the change might have on environment;
- Complete Addendum report;
- Prepare and distribute a Notice of EPR Addendum; and
- Final review by the public and stakeholders prior to proceeding with Project.

In accordance with *O. Reg. 231/08*, for all changes to the project inconsistent with the EPR, this Addendum to the 2010 EPR includes the following information:

- A description of the changes (Section 2) and rationale for these changes (Table 1-1);
- Assessment and evaluation of any impacts that the change may have on the environment (Sections 3 and 4);
- A description of proposed mitigation measures for any negative impacts that the change to the project may have on the environment (Sections 4 and 5.6); and
- A statement of whether the proponent (Metrolinx) is of the opinion that the change is a significant change to the transit project, and the reasons for the opinion (Section 1.3.1).

If the proposed changes are not significant the Addendum will be documented and placed on file at Metrolinx. If the proposed changes are significant a Notice of EPR Addendum will be issued in accordance with *O. Reg. 231/08*, including publication in the local newspaper(s), posting the notice online and distribution of the Notice of Addendum to relevant stakeholders and the MECP.

1.5.1 EPR Addendum Approval Process

After completing the Addendum report and filing a Notice of Completion for the EPR Addendum, the report will be made available to the public, regulatory agencies, Indigenous communities or other interested persons for a 30-day review period in accordance with the *O. Reg. 231/08*. Persons with concerns about a transit project may submit an objections to a transit project during the 30-day review period of the EPR Addendum. If an objection is submitted to the Minister, the proponent will be given an opportunity to comment on the concerns raised before the Minister acts.

After the 30-day review period has ended, the MECP has 35-days to consider the objections (if any) regarding negative impacts of the transit project and can act if the significant change may have a negative impact on a matter of provincial importance that relates to the natural environment or has cultural heritage value or interest, or on a constitutionally protected Aboriginal or treaty right. Under *O. Reg. 231/08*, the Minister does not have the authority to either approve or refuse a transit project. The Minister may issue one of three notices to the proponent:

- A notice to proceed with the transit project as planned in its EPR;
- A notice that requires the proponent to take further steps, which may include further study or consultation; or
- A notice allowing the proponent to proceed with the transit project subject to conditions.

The construction or implementation of the transit project subject to the EPR Addendum may proceed if no notice or Notice to Proceed is received, or if the requirements of the Notices have been satisfied (bullets 2 and 3 above). Subject to these requirements, the transit project may proceed subject to any other required approvals.

1.6 Relevant Planning Policies, Studies, and Documents

As part of the study, applicable land use and transportation policies were reviewed for the study area and are summarized below.

1.6.1 Province of Ontario Planning Policies

1.6.1.1 Provincial Policy Statement (2020)

The 2020 *Provincial Policy Statement* (PPS) outlines the Province's land use planning policies, including the efficient use and management of land and infrastructure, ensuring the appropriate transportation, water, sewer and other infrastructure is available to accommodate current and future needs and ensuring opportunities for economic development and job creation. Policies which are applicable to the Project include, but are not limited to:

- Section 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;
- Section 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; and
- Section 1.6.7.4: A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.

Others relevant areas which the PPS highlights include the sustainment of healthy, liveable and safe communities by the 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 (Section 1.1.1).

1.6.1.2 *A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019)*

The *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* outlines the Province's objectives to plan growth and development in the Greater Golden Horseshoe which includes the CoT. A key objective of the plan is to support economic prosperity, protect the environment and help communities achieve a high quality of life. A key vision for the Greater Golden Horseshoe is that an "integrated transportation network will allow people choices for easy travel both within and between urban centres throughout the region".

Key Policies under Section 3.2.3 of the Growth Plan (Moving People) which are applicable to the Project include, but are not limited to:

- Public transit will be the first priority for transportation infrastructure planning and major transportation investments;
- All decisions on transit planning and investment will be made according to the following criteria:
 - Prioritizing areas with existing or planned higher residential or employment densities to optimize return on investment and the efficiency and viability of existing and planned transit service levels;
 - Expanding transit service to areas that have achieved, or will be planned to achieve, transit-supportive densities and provide a mix of residential, office, institutional, and commercial development, wherever possible;
 - Facilitating improved linkages between and within municipalities from nearby neighbourhoods to urban growth centres, major transit station areas, and other strategic growth areas;
 - Increasing the modal share of transit; and
 - Contributing towards the provincial greenhouse gas emissions reduction targets.

Implementation of the Project will contribute to the goals of these Growth Plan policies by:

- Expanding and supporting transit services along Eglinton Avenue West, adjacent to lands designations including but limited to neighbourhoods, apartment neighbourhoods, and mixed use area;
- The Project provides an additional linkage between the CoT and the CoM and connecting users to existing transit facilities and local transit (e.g., TTC, Mississauga Transit (MiWay)); and
- Strengthens the transit network to encourage the use of public transit.

1.6.1.3 *Greenbelt Plan (2017)*

Within the Greater Golden Horseshoe, the Greenbelt Plan (2017) identifies key areas where "urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological and hydrological features, areas and functions occurring". The plan identifies "Urban River Valleys" within the CoT Settlement Area. Within the Project's study area, the Humber River crossing east of Scarlett Road is designated as an Urban River

Valley. The following Greenbelt Plan policies are applicable to the Project across the Humber River:

- The lands are governed by the applicable Official Plan policies provided they have regard to the objectives of the Greenbelt Plan (Section 5.2.2); and
- All existing, expanded or new infrastructure which is subject to and approved under the Environmental Assessment Act, or which receives a similar approval, is permitted provided it supports the needs of adjacent settlement areas or serves the significant growth and economic development expected in southern Ontario and supports the goals and objectives of the Greenbelt Plan (Section 6.2.3).

1.6.1.4 *Greater Golden Horseshoe Transportation Plan (2017)*

The Ontario Ministry of Transportation (MTO) is preparing a draft Transportation Plan for the Greater Golden Horseshoe Area centered around the CoT. It is noted this region is home to 9 million people and 4.5 million jobs. Draft Goals and Objectives of the plan were released in September 2017 for public review and feedback. The draft Goals and Objectives which are relevant to the Project include, but are not limited to:

- A transportation system that serves all users;
- A transportation system that supports economic growth and job creation;
- A transportation system that is coordinated with land use and supports communities that provide convenient access to jobs, services, housing and transportation options; and
- A transportation system that efficiently connects people, places and goods.

1.6.1.5 *Metrolinx 2041 Regional Transportation Plan (2018)*

Metrolinx's 2041 *Regional Transportation Plan* (RTP) forms the policy basis for improving the transportation system within the GTHA to 2041. Some of the key objectives of the plan include completing the delivery of current regional transit projects, connecting more of the region with frequent rapid transit, optimizing the transportation system, integrating transportation and land use and preparing for an uncertain future.

The Project is included as a key initiative in the 2041 RTP. Goals of the RTP which are applicable to the Project include, but are not limited to:

- Strong Connections: Connecting people to the places that make their lives better, such as homes, jobs, community services, parks and open spaces, recreation, and cultural activities;
- Complete Travel Experiences: Designing an easy, safe, accessible, affordable and comfortable door-to-door travel experience that meets the diverse needs of travelers; and
- Sustainable and Healthy Communities: Investing in transportation for today and for future generations by supporting land use intensification, climate resiliency and a low-carbon footprint, while leveraging innovation.

1.6.1.6 *Ministry of Transportation Southern Highways Program - 2017 to 2021*

The Ministry of Transportation's Southern Highways Program lists the Ontario government's plan to repair and expand provincial highways and bridges, and planning studies to address long-term transportation infrastructure needs within southern Ontario. There are currently no major planned transportation infrastructure underway by the MTO within the vicinity of the Project.

1.6.2 **Greater Toronto Airport Authority Planning Policies**

1.6.2.1 *Toronto Pearson International Airport Master Plan - 2017 to 2037*

The *Toronto Pearson International Airport Master Plan* is the Greater Toronto Airports Authority's (GTAA) plan for the development and growth of the Lester B. Pearson International Airport to 2037. The Master Plan provides a summary of existing facilities, conditions, and capabilities, assesses future needs, and sets a land-use plan for the airport.

One of the major priorities detailed in the Master Plan is the improvement of ground access. As a catalyst for regional job creation and economic prosperity, it is vital that people and goods are able to reach the airport more quickly and easily. In 2017, the GTAA announced plans for a Regional Transit Centre which would better integrate the airport with existing and proposed rail networks.

The Project will be an important part of reaching this goal as an improved link between Mount Dennis and Renforth Station will allow easier access to Lester B. Pearson International Airport from residential and economic hubs within Toronto.

1.6.3 **Municipal Land Use and Transportation Policies**

1.6.3.1 *City of Toronto Planning Studies*

1.6.3.1.1 *City of Toronto Official Plan (2019)*

The *City of Toronto Official Plan (2019)* is an overarching set of policies which form the basis of land use planning within the City. The *Official Plan (2019)* outline a comprehensive vision for growth and development through to 2031 and call for the reduction of car dependence by fostering transit-oriented growth and building new transit lines and increased density in tandem. This Project will result in improvements to public transit service along Eglinton Avenue West over the next decade. The construction of the ECLRT Project will significantly improve mobility and transportation options for Torontonians. A key policy in Chapter 2 of the City's current *Official Plan (Shaping the City)* states that Toronto will work with neighbouring municipalities, the Province of Ontario and Metrolinx to address mutual challenges and to implement the Provincial framework for dealing with growth across the Greater Toronto Area, including focusing urban growth into a pattern of compact centres, mobility hubs, and corridors connected by a regional transportation system, featuring fast, frequent, direct, inter-regional transit service with integrated services and fares.

The City of Toronto's *Official Plan* establishes a series of land uses along the Project, including: Neighbourhoods, Apartment Neighbourhoods, Parks and Open Space Areas, Utility Corridors, Mixed Use Areas, Core Employment Areas, General Employment Areas, Regeneration Areas, and Institutional Areas.

In addition to the land use designations discussed above, there are a number of CoT Site and Area Specific Policies along the Project study area which are applicable to long term land use planning in the vicinity of the study area, including: West Side of The East Mall, South of Eglinton Avenue West, Lester B. Pearson International Airport Operating Area, Applicable to various properties in the Eglinton Avenue West/Mount Dennis Area, Mount Dennis Area, 75 Lemonwood Drive, and 1120 - 1132 Weston Road.

1.6.3.1.2 Eglinton Connects Study

The CoT, through a funding contribution by Metrolinx, has undertaken the Eglinton Connects Study (2012-2013) to develop an urban design vision for the Eglinton Corridor. This comprehensive planning study of the Eglinton Avenue West corridor was designed to complement the future ECLRT. The study generally included the Eglinton Avenue West corridor between Jane Street and Kennedy Road, and examined where people would live and work and what kind and size of buildings would be along Eglinton Avenue West in the future. The study made decisions about how the streets will function, how they will look and what features/streetscapes they should have.

1.6.3.1.3 Eglinton Connects Study Streetscape and Cycle Track Preliminary Design

Additionally, the *Eglinton Connects Study Streetscape and Cycle Track Preliminary Design* (initiated in late 2017), is being coordinated with the Eglinton Crosstown station design and construction. The current scope of the project has two components:

- Preliminary Design of Streetscape - review the existing corridor for streetscaping opportunities, such as improved sidewalks, furnishing zones and planting zones; and
- Preliminary Design of Cycle Track - review the existing ROW, including travel lanes and parking lanes, to develop a preliminary design and feasibility constraints for the installation of cycle tracks along Eglinton Avenue West.

1.6.3.2 Region of Peel Planning Studies

1.6.3.2.1 Region of Peel Official Plan (2018)

The *Region of Peel Official Plan* (2018) is an upper tier municipal planning policy which applies to the CoM, of which the proposed Renforth Station is located. Renforth Station lies within the established Urban System of the Regional Structure. Key objectives of the Region's current Official Plan include "the development of an economically feasible, effective, efficient, sustainable and safe inter- and intra-regional transit network and encourage connectivity and coordination between transit services" and "to encourage the provision of improved transit service to Toronto - Lester B. Pearson International Airport and the surrounding employment area". A summary of the Regional Official Plan policies which are applicable to the Project includes but is not limited to:

- Work with Metrolinx, other Provincial agencies and ministries, the area municipalities, and adjacent municipalities in the planning and implementation of an inter-regional transit system (Section 5.9.5.2.2);
- Support the coordination of inter-municipal and inter-regional transit services (Section 5.9.5.2.4); and

- Support Metrolinx and the area municipalities in the expeditious planning, and implementation of, and support Metrolinx and the federal government in the expeditious funding of, a GTHA-wide rapid transit network and, in particular, of rapid transit projects in Peel included in the Metrolinx RTP (Section 5.9.5.2.6a).

1.6.3.2.2 Region of Peel Long Range Transportation Plan (2019)

To address the increasing demands on the Region of Peel's transportation network from the population and employment growth forecasted in the *Growth Plan for the Greater Golden Horseshoe* (2017), the Region of Peel developed the *Long Range Transportation Plan (LRTP)* in 2019. This plan guides transportation planning needs in the Region of Peel into the 2041 horizon year.

The *LRTP* is guided by and intended to help achieve the Region of Peel's 2015-2035 Strategic Plan, *Community for Life*. The vision guides the Region of Peel to shift travel behaviour from driving alone to more sustainable modes, and building infrastructure to support these modes. The overarching goal of the *LRTP* is to establish a transportation network system in Peel where 50% of travel is through sustainable modes, such as walking, cycling, transit, and carpooling by 2041. The *LRTP* unifies three component studies - Sustainable Transportation Strategy, Road Safety Strategic Plan, and the Goods Movement Strategic Plan.

1.6.3.3 City of Mississauga Planning Studies

1.6.3.3.1 City of Mississauga Official Plan (2015)

The *City of Mississauga Official Plan* (2015) is the lower tier municipal planning policy which also applies to the proposed Renforth Station. A key objective of the City's *Official Plan* is to "create a multi-modal transportation network for the movement of people and goods that supports more sustainable communities". A summary of the City of Mississauga's *Official Plan* policies as it relates to the Project includes but is not limited to:

- The City will seek to develop and maintain a system of transit services aimed at providing a competitive alternative to the automobile, for access throughout the city and neighbouring municipalities. (Section 8.2.3.1); and
- The City will work with surrounding municipalities, the Region, the GTAA and the Province to create an interconnected higher order transit system that links Intensification Areas, surrounding municipalities, the regional transit system and Lester B. Pearson International Airport. (Section 8.2.3.7).

1.6.3.3.2 City of Mississauga Transportation Master Plan (2019)

The City of Mississauga's Transportation Master Plan (TMP) is founded on the vision statement: "In Mississauga, everyone and everything will have the freedom to move safely, easily and efficiently to anywhere at any time". The TMP was approved in May 2019 and enhances the goals of the Mississauga Strategic Plan, to support and strengthen the City's strategic pillars: Move, Belong, Connect, Prosper and Green. The 'Move' pillar envisions a bold transformation of the City's transportation system to give travellers in Mississauga options and to provide freedom from automobile dependence.

The pursuit of a multi-modal city is a paradigm shift for Mississauga, where automotive travel has been and remains the dominant mode of transport. The vast majority of the City's road network has been planned, designed, built, operated and maintained in a way that enables and supports auto supremacy. These practices are the result of adherence to industry standards and best practices that are derived for traffic optimization and are commonplace in Ontario cities. The TMP also establishes a clear vision for a future transportation system that is safe, inclusive, multi-modal, connected to place, environmentally conscious and future-ready. It serves as a framework to guide Mississauga's City policy and business planning and will direct the City's investment in and stewardship of the transportation system to 2041.

The Project supports the CoMs Transportation Master Plan by creating a new connection between the CoM and the CoT. The proposed Renforth Station will also potentially connect to a number of MiWay routes and expand the transit network within the CoM.

1.6.3.3.3 MiWay Five Service Plan (2016-2020)

The MiWay Five Service Plan (2016-2020) is moving the CoMs transit system from a design that radiates from the city centre to a grid network. This allows for more frequent and direct service along main roads and adheres to the following goals:

- Enhanced grid network to provide stronger corridors;
- More frequent service on main corridors;
- More service outside of weekday rush hours;
- More express service between key destinations;
- Integration with the Mississauga Transitway;
- Direct connections between major transit hubs;
- Improved connections with GO stations;
- Improved service to major employment areas;
- Improved service to colleges and universities; and
- Improved connections to neighbouring communities.

1.6.3.3.4 MiWay Five Service Plan (2021-2025)

The next MiWay Five Service Plan is underway to review existing service and options for improvements, with completion of the Plan slated for the fall of 2020. The Plan will guide the refinement and expansion of the City's transit network over five years from 2021 to 2025. Its main goal is to continue growing the system and improving connectivity to deliver a transit service that will be fast, efficient, attractive, and easy to use. The service plan will identify the needs and requirements to integrate existing services with:

- The Mississauga Transitway;
- Regional Services (e.g., GO Transit);
- Connections with neighbouring transit systems (e.g., TTC); and
- Transportation network companies.

The Plan will also factor in the upcoming network changes as related to planned future higher order transit such as the Project. The development of “Union Station West”, a planned regional transit centre at Lester B. Pearson International Airport to connect the Greater Golden Horseshoe will be focused on within this Plan as service increases and changes are anticipated to both the Lester B. Pearson International Airport and GTAA offices.

1.6.3.3.5 MiWay Infrastructure Growth Plan

The MiWay Infrastructure Growth Study is currently underway to develop a strategic plan to direct the effective allocation of the City's investments to transit infrastructure at MiExpress stops and terminals with completion expected in 2020. The Study will ultimately determine transit infrastructure requirements, at terminals and at MiExpress stops, within the immediate and medium-term (5-10 years) timeframe as part of the City's transit-oriented vision and to support MiWay's Five Year Transit Service Plan.

1.7 Consultation Program Overview

The consultation program for the EPR Addendum study was developed based on the public and stakeholder consultation requirements specified for a TPAP.

The following approach was used:

- Prepare Contact/Property Owner Lists:
 - Created and maintained a contact list to know who needs to be informed of project updates.
- Develop Project Website (www.metrolinx.com/eglintonwest):
 - A website was developed to serve as an information and engagement hub prior to engagement activities.
- Notice of Online Open House:
 - To notify residents in the study area of the Online Open House and provide information on how to participate/provide comment. Advertised by newspaper, website and through emailed/mailed notification to those contacts on the contact lists.
- Host Online Open House:
 - The Online Open House was launched on the Project website and included the display boards and an opportunity to ask questions on the project materials.
- Manage Comment Tracking/Responses:
 - To manage all comments received during the project, and ensure that all questions from stakeholders and the public are addressed.
- Notice of EPR Addendum:
 - To notify relevant stakeholders, the general public, and residents in the study area about the completion of the project, and provide information on how to access the final report and provide comment.

The consultation program is discussed in further detail in Section 5 of this EPR Addendum.

2. Update of the Project Description

The purpose of this Section is to describe design changes to the Project since the 2010 EPR and 2013 EPR Addendum between Mount Dennis Station to Renforth Drive.

2.1 Design Elements

2.1.1 *Typical Runningway and Portals*

The 2010 EPR recommended an exclusive at surface alignment along Eglinton Avenue West. However, for the 2020 EPR Addendum, the revised design for the Project's runningway will travel below grade (i.e., underground) and/or through an elevated guideway (i.e., above ground), without any at-grade crossings (i.e., surface) between Mount Dennis Station and Renforth Drive. Therefore, the impacts identified in the 2010 EPR are no longer applicable.

The runningway will travel below grade from the ECLRT tail track at Mount Dennis Station, with a short elevated guideway between Jane Street and Scarlett Road, continue below grade to Renforth Drive, and then slightly transition to meet with the partially at-grade Renforth Station. The underground alignment will generally stay within the Eglinton Avenue West ROW with a shift towards the north side to prevent construction impacts from shafts and stations. This approach will generally minimize impacts and disruption to existing infrastructure, traffic, land-use, and potential conflicts with utilities. The revised alignment does not plan for any major road design changes on existing roads and cross sections, with the exception of a required road realignment to accommodate the tunnel west of Scarlett Road, where the elevated guideway ends. The conceptual design of the Project's alignment is illustrated in the set of drawings in Appendix A.

The alignment is separated into three key segments:

- Segment 1 consists of a short below grade runningway from the railway corridor on the west side of the future Mount Dennis LRT Station to the east side of Jane Street;
- Segment 2 consists of an elevated guideway from the east side of Jane Street to the west side of Scarlett Road; and
- Segment 3 consists of a below grade runningway from the west side of Scarlett Road to the partially at-grade Renforth Station in the CoM.

The Project features three portals which serve as approach entrances where the alignment transitions between underground and elevated. These include two tunnel-to-elevated portals (east of Jane Street and the second west of Scarlett Road), as well as one tunnel-to-surface portal east of Renforth Station. The locations of these portals are illustrated in Appendix A.

2.1.2 *Stations*

Stations will be accessible, integrated, and convenient for use by all passengers. Stations will also aim to provide a safe connection for passengers transferring from adjacent bus routes and associated stops. The Project does not include any bus terminals as part of the station design. Further details on the location and configuration of station will be confirmed as the design progresses.

General site areas of each station are illustrated in the conceptual design drawings presented in Appendix A.

2.1.3 Structures

There are multiple types of structures proposed along the Project alignment. Below grade structures include bored tunnels, underground stations, EEBs and CPs. Above grade structures include the elevated guideway, including a new bridge over the Humber River, and elevated stations, as well as surface structures (i.e., EEBs, TPSSs). Structural details will be developed during the detail design stage.

2.1.3.1 Twin Tunnels

The twin tunnel configuration follows the same recommendations as per the 2010 EPR, with an internal diameter of 5.75 m, 250 mm tunnel lining and an approximate 6.5 m excavation diameter. Figure 2-1 presents a typical tunnel cross section.

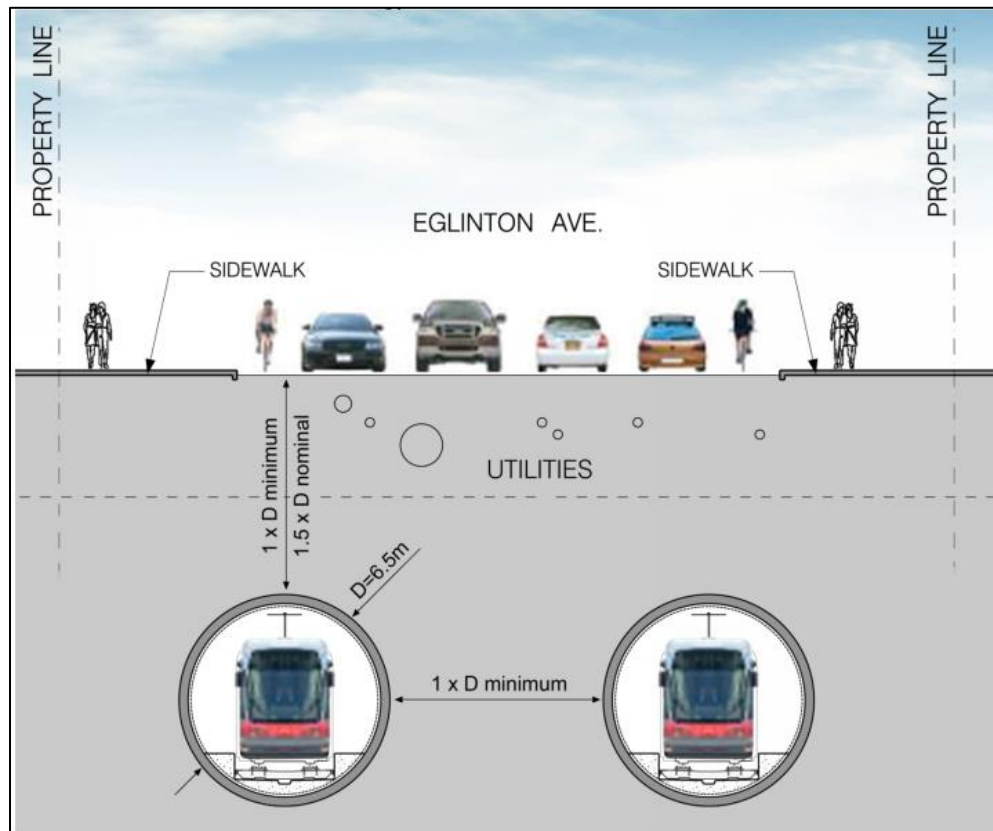


Figure 2-1: Conceptual Tunnel and Typical Midblock Cross Section between Stations

2.1.3.2 Emergency Exit Buildings

EEBs are provided along the tunnel or underground runningway sections between the stations to allow for evacuation of underground facilities in the event of an emergency. EEBs are equipped with emergency backup power and ventilation and form part of an emergency egress system that also includes a common stairwell vestibule between the twin tunnels, a series of stairways and a tunnel leading up to the surface level. Each underground station

must be equipped with an emergency or secondary access. EEB buildings will be located on the surface on either the north or south side of Eglinton Avenue West; the specific locations of EEB buildings will be confirmed as the design progresses.

Spacing of EEBs must comply with NFPA 130 design guidelines and TTC Standards DM-0102-03/4.2.1, and must be provided such that maximum distance between egresses (exits) does not exceed 762 m. Where stations are less than 762 m apart and the distance to an egress path to the non-incident tunnel toward the station platform does not exceed 381 m, EEBs are not required.

Six EEBs have been proposed between Mount Dennis Station and Renforth Drive. EEBs may require two headwalls to be constructed, and would be located on either side of the proposed EEB. The approximate headwall locations for the EEBs are presented in Appendix A.

2.1.3.3 *Cross Passages*

CPs are required in addition to EEBs within the underground section to provide access from an incident trackway into the adjacent non-incident trackway. CPs must be spaced no further than 381 m from a point of exit as per TTC Standards.

Nine CPs have been proposed along the Project alignment between Mount Dennis Station and Renforth Drive. The approximate locations of CPs are presented in Appendix A.

2.1.3.4 *Traction Power Substations*

TPSSs are required to house the electrical power supply and distribution equipment necessary to supply electrical power to the transit vehicle. The traction power network, including transformers, switches and circuits will supply adequate power at an acceptable voltage to the transit vehicles and will be designed to minimize stray current and voltage hazards. TPSS locations would be spaced approximately 1.5 km apart and would be located within a 200 m radius from the guideway.

The Project will accommodate up to seven TPSSs along the Project alignment and will be roughly adjacent to the underground stations. The locations of TPSSs will be confirmed as the design progresses.

2.1.3.5 *Bridge Over the Humber River*

A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two elevated stations (i.e., Jane Station and Scarlett Station).

2.1.4 *Modifications to Eglinton Avenue West and Traffic Management*

Road realignment is necessary for a short segment along Eglinton Avenue West near the mid-portal west of Scarlett Road. The road realignment will shift the existing four lanes of traffic and active transportation facilities to south of the portal, the C&C box and the ES for the TBM. Construction of the ES, C&C box structures and Scarlett portal, will require installation of support of excavation, construction of the permanent road realignment south of these structures, and temporary or permanent relocation or in-place support to several existing utilities. Some of these utilities include storm sewers, water mains, Rogers Telecommunications, Enbridge Gas, CoT Streetlighting and Toronto Hydro-Electric System Limited (THESL) hydro line.

Temporary lane restrictions, road closures, turn restrictions and traffic detouring are anticipated during construction (see Section 4.5.2.1). Following the finalization of guideway construction methodology, designs of underground and elevated stations, tunnel portals and other associated installations for the Project, construction staging methodologies will be available to assess the full extent of construction impacts to traffic operations.

2.1.5 Maintenance and Storage Facility

No new MSFs have been proposed for the revised design, as it is expected that the MSF that is under construction as part of the ECLRT, northeast of Mount Dennis Station, will be used for the Project. The ECLRT MSF is designed to accommodate the Project and can be further expanded if needed.

2.2 Construction Methods

Based on the conceptual design for the 2020 EPR Addendum, twin bore tunnel was selected as the preferred tunnel configuration for the majority of the runningway. The alignment will use twin tunnel construction between Renforth Drive to west of Scarlett Road, and an elevated guideway from west of Scarlett Road to east Jane Street.

Details for the tunnelling construction for the segment between Jane Street and Mount Dennis Station will be confirmed as design progresses.

2.2.1 Below-Grade Construction

The underground section of the Project's alignment will be constructed using a tunnelling method between stations and C&C method at stations, EEBs and at portal locations.

Underground section construction approach:

- An ES will be located west of Scarlett Road where the elevated guideway ends. Construction of the ES, C&C box structures and Scarlett portal, will require installation to support excavation and road realignment south of these structures, and temporary or permanent relocation of existing utilities;
- A LS for the TBM will be located adjacent to Renforth Station;
- A MS will be provided for TBM maintenance purposes and is proposed at the west end of Islington Station. The MS will be removed at the end of construction;
- A ES for the TBM will located west of Scarlett Road;
- Tunnel structure will be constructed using precast concrete tunnel liner segments that are installed as the TBM progresses;
- Excavated soils will be removed from work sites for off-site disposal;
- EEBs will be constructed once the TBM has completed the tunnelling; and
- Excavation of headwalls for the EEBs will be situated within Eglinton Avenue West ROW will have temporary effects during construction. Temporary realignment and traffic staging is necessary to construct headwalls for the EEBs.

2.2.2 *Elevated Construction*

The elevated guideway, between the Scarlett and Jane portals is approximately 1.5 km in length. Both Scarlett and Jane Stations will be grade-separated and will be elevated stations. The construction of elevated station platforms will be very similar to the elevated guideway. However the station structure will be significantly wider than the guideway to accommodate the needed passenger space and will also have a larger at-grade footprint to function as station entrances.

A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two above ground stations (Jane Station and Scarlett Station). Construction of the new bridge will involve:

- Building foundations for piers;
- Constructing piers;
- Building and placing bridge sections; and
- Installing systems and track.

2.3 *Summary of Design Changes*

Table 2-1 summarizes the key design changes (i.e., track alignment, stations, portals, EEBs, CPs, etc.) proposed for the Project. These design elements are referenced with the supporting Design Plates included in Appendix A.

Table 2-1: Detailed Summary of Project's Design Changes

Segment	Design Plate Reference	Proposed Design Changes for 2020 EPR Addendum
Black Creek Drive to Weston Road	N/A	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> • The tunnelled section begins from the east side of the CP Rail tracks towards Weston Road; • The Project proposes to tie in the runningway into the ECLRT eastbound and westbound tail tracks near Mount Dennis Station. Specific configuration will be confirmed as the design progresses; • The ECLRT MSF is located just east of the CP Rail tracks; and • Mount Dennis LRT Station is located on the east side of the railway corridor at street level on the north side of Eglinton Avenue West.
Weston Road to Jane Street	A-1; A-2	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> • The runningway continues underground west of Weston Road along the centreline of Eglinton Avenue West and then the runningway elevation raises along a portal east of Jane Street to connect to an elevated guideway and elevated station over Jane Street; • The transition between the tunnelled section and elevated guideway is through a portal east of Jane Street; and • CP1 is located east of the portal east of Jane Street.
Jane Street to Scarlett Road	A-2; A-3	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> • The runningway travels over an elevated guideway on the north side of Eglinton Avenue West, moving across Jane Street, Emmett Avenue, the Humber River, and Scarlett Road; and • Jane Station is an elevated station over Jane Street. As a result, the elevation of the station is required to maintain a minimum vertical clearance over Jane Street in compliance with CoT standards.
Scarlett Road to Royal York Road	A-3; A-4	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> • The runningway travels over an elevated guideway on the north side of Eglinton Avenue West, travelling west after Scarlett Road by following the geometry of Eglinton Avenue West. It then starts descending to connect with the tunnel portal west of Scarlett Station, continuing underground to Royal York Station; • A portal west of Scarlett Station connects the elevated guideway to the tunnelled section; • Scarlett Station is an elevated station over Scarlett Road. Elevation of the station is required to maintain a

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Segment	Design Plate Reference	Proposed Design Changes for 2020 EPR Addendum
		<p>minimum vertical clearance over Scarlett Road in compliance with the CoT standards;</p> <ul style="list-style-type: none"> The elevated guideway and portal west of Scarlett Station will require closures of an existing residential driveway that provides secondary access/egress for the properties on the north side of Eglinton Avenue West, west of Scarlett Road; The ES is located west of Scarlett Road where the elevated guideway ends; CP2 is located west of the ES, west of Scarlett Road; Road Alignment of Eglinton Avenue West at Scarlett Road: <ul style="list-style-type: none"> Modifications to the Eglinton Avenue West and Scarlett Road intersection may be required for the permanent realignment of traffic lanes on Eglinton Avenue West; A permanent realignment of traffic lanes on Eglinton Avenue West is required to accommodate the portal west of Scarlett Road; and EEB-1 is located near 4000 Eglinton Avenue West, east of Royal York Road.
Royal York Road to Islington Avenue	A-5; A-6	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> Royal York Station is located underground; The runningway will continue below grade by tunnelling towards west on the north side of Eglinton Avenue West and then partially along Eglinton Avenue West ROW. The alignment transitions to connect with the underground Islington Station; CP3 is located east of Russell Road/Eden Valley Drive; and EEB-2 is located west of Russell Road and Eden Valley Drive.
Islington Avenue to Kipling Avenue	A-6; A-7; A-8	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> Islington Station is located underground, slightly west of Islington Avenue; The runningway continues underground by tunnelling west, generally travelling along the Eglinton Avenue West ROW. The alignment transitions to connect with the underground Kipling Station; EEB-3 is located east of Wincott Drive/Bemersyde Drive; and CP4 located east of Kipling Avenue.
Kipling Avenue to Martin Grove Road	A-8; A-9	<p>The proposed amendments are as follows:</p>

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Segment	Design Plate Reference	Proposed Design Changes for 2020 EPR Addendum
		<ul style="list-style-type: none"> The runningway continues underground by tunnelling west, generally travelling along the Eglinton Avenue West ROW. The alignment transitions to connect with the underground Martin Grove Station; Kipling Station is located underground, slightly west of Kipling Avenue; CP5 located west of Kipling Station; and Martin Grove Station is located underground, east of Martin Grove Road.
Martin Grove Road to Renforth Drive	A-9; A-10; A-11; A-12	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> The runningway continues underground by tunnelling west, generally outside of the Eglinton Avenue West ROW. It travels parallel to Eglinton Avenue West, running adjacent to Highway 401 and then continues along the Eglinton Avenue West ROW, near the Highway 427 interchange for a short length. The alignment then shifts slightly north of Eglinton Avenue West and adjacent with the Mississauga Transitway; A deep vertical alignment has been considered, such that the tunnel can cross under Mimico Creek, the Highway 27/427 bridges, and the Hydro Corridor with minimal impacts to natural features and existing infrastructure. The runningway also crosses under Renforth Drive with an ascending grade; CP6 is located west of Martin Grove Road; EEB-4 is located west of Mimico Creek; CP7 is located west of Highway 27; EEB-5 is located between the on and off ramps of Highway 427; CP8 is located west of EEB-5; EEB-6 is located immediately west of the hydro corridor at Eglinton Avenue West; and CP9 is located east of Renforth Drive.
Renforth Drive to Commerce Boulevard	A-13	<p>The proposed amendments are as follows:</p> <ul style="list-style-type: none"> The bored tunnels terminate immediately west of Renforth Drive; The runningway then starts ascending to connect with the partially at-grade Renforth Station, adjacent with the Mississauga Transitway's Renforth Terminal by a box structure and trench; Renforth Station is the terminal station and is partially at-grade, west of Renforth Drive; The portal west of Renforth Drive connects the tunnelled section to partially at-grade Renforth Station; and A laydown area is proposed near the Renforth site.

3. Existing Conditions

The existing environmental conditions described in the 2010 EPR and the 2013 EPR Addendum were reviewed for applicability to conditions at the time of this 2020 Addendum and were determined to be unchanged except as specifically stated in this section. This section provides a summary of the existing conditions in the study area considered as part of the Project, where applicable.

3.1 Natural Environment

3.1.1 *Hydrogeology/Groundwater*

As described in the 2010 EPR and 2013 EPR Addendum, it is expected that regional groundwater flow is southerly towards Lake Ontario, and that local groundwater flow is towards the closest watercourse. The shallow local groundwater flow is affected by utility trenches and other subsurface structures such as culverts, drainage pipes, and storm sewers.

Aquifers throughout the study area are located in the overburden within sand and gravel deposits, and groundwater occurs in the upper 3 m to 5 m of the Georgian Bay Formation with poor water-yielding capabilities, however, there is potential to encounter artesian conditions in the vicinity of Black Creek, near Mount Dennis Station. Future work, including geotechnical drilling, piezometer installation, and work completed as part of the environmental site assessments will better define the existing conditions within the study area.

Drinking water in the CoM and CoT is provided through municipal sources, and drawn from Lake Ontario, as such, groundwater level fluctuations in the study area are not expected to impact drinking water supplies.

No changes to the existing conditions regarding groundwater were identified during the preparation of this 2020 Addendum.

3.1.2 *Surface Water/Drainage*

An overall review of available mapping and topographical information was conducted to understand the existing drainage pattern within the study area. Two drainage systems exist within the study area, including: (1) Scarlett Road to Weston Road; and (2) Renforth Portal.

3.1.2.1 *Scarlett Road to Weston Road*

Within this study area, the Humber River flows from north to south crossing Eglinton Avenue West and ultimately discharging to Lake Ontario. The runoff from Eglinton Avenue West and adjacent developments is collected by catch basins and conveyed by storm sewer systems, which discharge directly to the Humber River. From approximately 200 m west of Scarlett Road, the storm sewer drains easterly to Humber River. From approximately 270 m east of Scarlett Road, the storm sewer drains to a storm inlet pipe approximately 212 m east of Emmett Avenue crossing Eglinton Avenue West to a golf course on the south, where it discharges to an overland drainage channel meandering through the golf course discharging

into Humber River. The park area north of Eglinton Avenue West drains to the storm inlet east of Emmett Avenue through an existing ditch.

3.1.2.2 *Renforth Portal*

The surrounding areas around the Renforth Portal site are drained by existing storm sewer systems under the municipal ROW. Four underground storm mains under Matheson Boulevard East, Skymark Avenue, Mississauga Transitway and Eglinton Avenue West conveys runoff from roads and adjacent lands to municipal storm sewer networks under the jurisdiction of CoM.

3.1.3 *Fish and Fish Habitat*

The aquatic features in the study area are contained within the Humber River Watershed and the combined Etobicoke and Mimico Creeks' Watershed, all of which drain southwards into Lake Ontario. Within the study area, the proposed alignment crosses three watercourses: the Humber River, Silver Creek (a tributary of the Humber River), and Mimico Creek. These watercourses are under Toronto and Region Conservation Authority (TRCA) and Ministry of Natural Resources and Forestry (MNRF) (*formerly Ontario Ministry of Natural Resources (OMNR)*) Aurora District jurisdiction. The locations of the watercourses are illustrated in Figure 3-1 while further details on fish and fish habitat are provided in Appendix B.

Due to the extensive existing fish community information collected during background review, and the accelerated timeline for this project resulting in field work being undertaken out of season, fish community surveys were not completed during field investigations. Additional agency consultation will be undertaken in the next design phase to confirm the fisheries timing window, and determine if additional fish community information and surveys are required. Fish records identified through background review are listed in Table 3-1 for each of the aforementioned watercourses.

3.1.3.1 *Lower Main Branch of the Humber River*

The Humber River is a permanent warmwater watercourse, identified by TRCA as a large riverine habitat (MNRF/OMNR & TRCA, 2005). The river is conveyed south under Eglinton Avenue West by a large concrete bridge, approximately 80 m east of Scarlett Road, and discharges to Lake Ontario approximately 9 km southeast of the study area.

Across the study area, the channel flows through a natural area designated by the *Greenbelt Plan* (2017) as an urban river valley. Within the study reach, a fast-flowing continuous riffle dominates the stream morphology.

The study area functions as a migration corridor for fall spawning salmonids and provides homogenous, non-limiting habitat in a fast moving, highly impacted system (MNRF, 2012). The study reach is located within TRCAs Management Zone 9, which targets smallmouth bass and rainbow darter (MNRF/OMNR & TRCA, 2005).



Figure 3-1: Eglinton Crosstown West Extension Natural Heritage Study Area



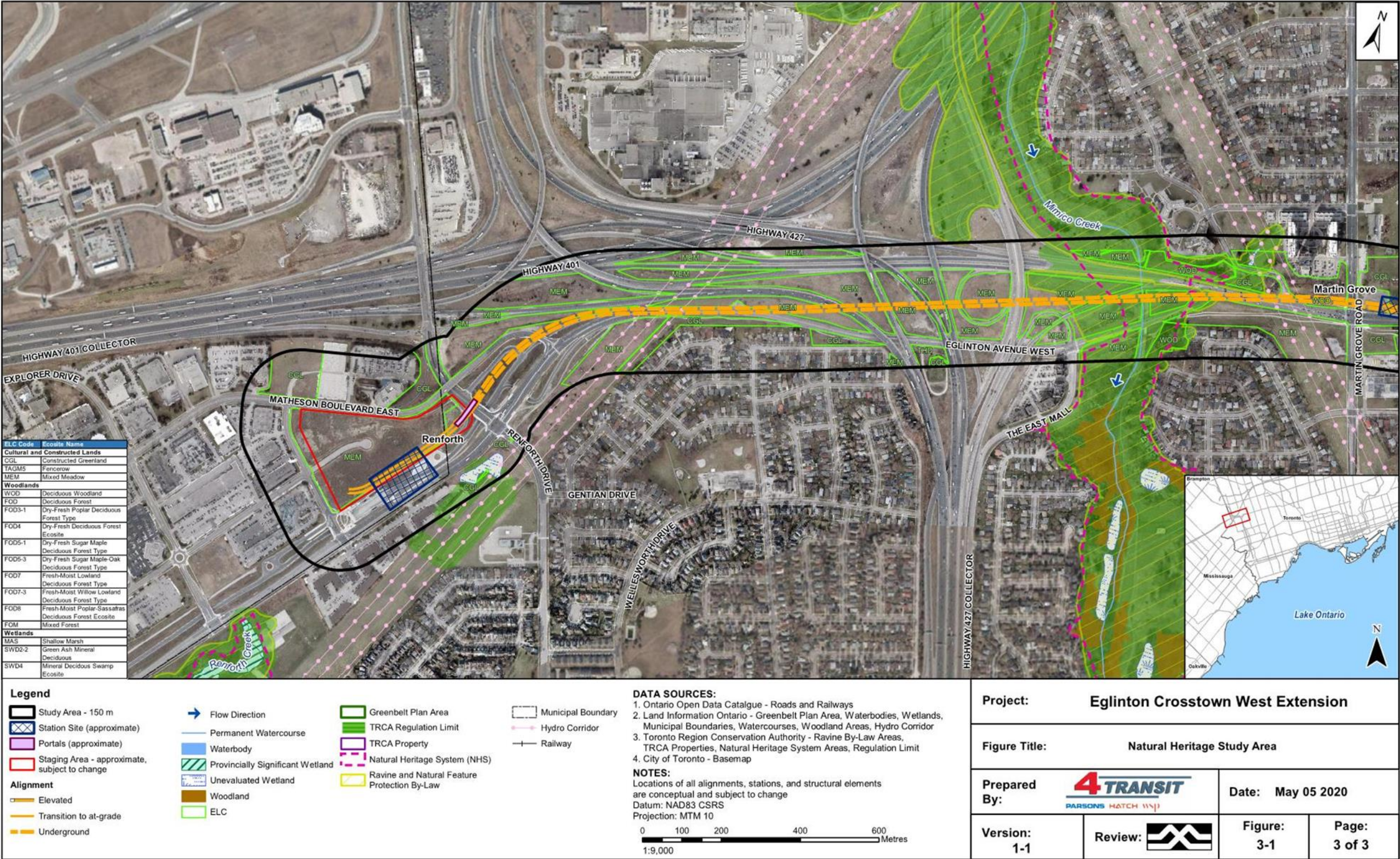


Figure 3-1: Eglinton Crosstown West Extension Natural Heritage Study Area

Table 3-1: Fish Community Records for Watercourses within the ECWE Study Area

Species	National (SARA)	Provincial (ESA)	National (COSEWIC)	Global (G rank)	Provincial Status (S Rank)	Humber River	Silver Creek	Mimico Creek
American Brook Lamprey (<i>Lethenteron appendix</i>)	-	-	-	G4	S3	X		
Atlantic Salmon (Lake Ontario pop.) (<i>Salmo salar</i> pop. 2)	-	-	EXT	G5TX	SX	H		
Black Crappie (<i>Pomoxis nigromaculatus</i>)	-	-	-	G5	S4			X
Blackchin Shiner (<i>Notropis heterodon</i>)	-	NAR	NAR	G5	S4	X		
Blacknose Dace (<i>Rhinichthys atratulus</i>)	-	-	-	G5	S5	X	X	X
Bluegill (<i>Lepomis macrochirus</i>)	-	-	-	G5	S5	X		
Bluntnose Minnow (<i>Pimephales notatus</i>)	-	NAR	NAR	G5	S5	X		X
Brook Stickleback (<i>Culaea inconstans</i>)	-	-	-	G5	S5	X		X
Brown Bullhead (<i>Ameiurus nebulosus</i>)	-	-	-	G5	S5	X		
Brown Trout (<i>Salmo trutta</i>)	-	-	-	G5	SNA			X
Carps and Minnows (n/a)	-	-	-		-	X		
Central Stoneroller (<i>Camptostoma anomalum</i>)	-	NAR	NAR	G5	S4	X	X	
Common Carp (<i>Cyprinus carpio</i>)	-	-	-	G5	SNA	X		X
Common Shiner (<i>Luxilus cornutus</i>)	-	-	-	G5	S5	X	X	X
Creek Chub (<i>Semotilus atromaculatus</i>)	-	-	-	G5	S5	X	X	X
Emerald Shiner (<i>Notropis atherinoides</i>)	-	-	-	G5	S5	X		
Etheostoma sp. (n/a)	-	-	-		-	X		
Fantail Darter (<i>Etheostoma flabellare</i>)	-	-	-	G5	S4	X		
Freshwater Drum (<i>Aplodinotus grunniens</i>)	-	-	-	G5	S5			X
Fathead Minnow (<i>Pimephales promelas</i>)	-	-	-	G5	S5	X	X	X

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Species	National (SARA)	Provincial (ESA)	National (COSEWIC)	Global (G rank)	Provincial Status (S Rank)	Humber River	Silver Creek	Mimico Creek
Goldfish (<i>Carassius auratus</i>)	-	-	-	G5	SNA			X
Hornyhead Chub (<i>Nocomis biguttatus</i>)	-	NAR	NAR	G5	S4	X		
Ichthyomyzon sp. (n/a)	-	-	-		-	X		
Iowa Darter (<i>Etheostoma exile</i>)	-	-	-	G5	S5	X		
Johnny Darter (<i>Etheostoma nigrum</i>)	-	-	-	G5	S5	X		
Johnny Darter/Tesselated Darter (n/a)	-	/NAR	/NAR	G5/G5	S5/S4		X	X
Lake Trout (<i>Salvelinus namaycush</i>)	-	-	-	G5	S5			X
Largemouth Bass (<i>Micropterus salmoides</i>)	-	-	-	G5	S5	X	X	
Longnose Dace (<i>Rhinichthys cataractae</i>)	-	-	-	G5	S5	X	X	X
Mottled Sculpin (<i>Cottus bairdii</i>)	-	-	-	G5	S5	X		
Northern Hog Sucker (<i>Hypentelium nigricans</i>)	-	-	-	G5	S4	X		
Pumpkinseed (<i>Lepomis gibbosus</i>)	-	-	-	G5	S5	X		X
Rainbow Darter (<i>Etheostoma caeruleum</i>)	-	-	-	G5	S4	X		
Rainbow Smelt (<i>Osmerus mordax</i>)	-	-	-	G5	S5			X
Rainbow Trout (<i>Oncorhynchus mykiss</i>)	-	-	-	G5	SNA		X	
Redside Dace (<i>Clinostomus elongatus</i>)	END	END	END	G3G4	S2	H		H
River Chub (<i>Nocomis micropogon</i>)	-	NAR	NAR	G5	S4	X		X
Rock Bass (<i>Ambloplites rupestris</i>)	-	-	-	G5	S5	X		
Rosyface Shiner (<i>Notropis rubellus</i>)	-	NAR	NAR	G5	S4	X		
Sand Shiner (<i>Notropis stramineus</i>)	-	-	-	G5	S4			X
Sea Lamprey (<i>Petromyzon marinus</i>)	-	-	-	G5	SNA	X		

Species	National (SARA)	Provincial (ESA)	National (COSEWIC)	Global (G rank)	Provincial Status (S Rank)	Humber River	Silver Creek	Mimico Creek
Smallmouth Bass (<i>Micropterus dolomieu</i>)	-	-	-	G5	S5	X		
Stonecat (<i>Noturus flavus</i>)	-	-	-	G5	S4	X		
White Bass (<i>Morone chrysops</i>)	-	-	-	G5	S4			X
White Perch (<i>Morone americana</i>)	-	-	-	G5	SNA			X
White Sucker (<i>Catostomus commersonii</i>)	-	-	-	G5	S5	X	X	X
Yellow Bullhead (<i>Ameiurus natalis</i>)	-	-	-	G5	S4	X		
Yellow Perch (<i>Perca flavescens</i>)	-	-	-	G5	S5	X		

Definitions, Acronyms and Symbols

Global G-rank

G1: Critically Imperiled (at very high risk of extinction)

G2: Imperiled (at high risk of extinction)

G3: Vulnerable (at moderate risk of extinction)

G4: Apparently Secure (Uncommon but not rare)

G5: Secure (common, widespread and abundant)

G#G#: Range Rank (range of uncertainty about the status of a taxon or ecosystem type)

GU: Unrankable (currently unrankable due to lack of information)

GNR: Unranked (global rank not yet assessed)

GNA: Not Applicable (species is not a suitable target for conservation activities)

T: Denotes that the rank applies to a subspecies or variety

B: Breeding

N: Non-breeding

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)

ESA: Endangered Species Act

SARA: Species at Risk Act

SARA or ESA Designation

EXT - Extinct

END - Endangered

THR - Threatened

SC - Special Concern

NAR - Not at Risk

Provincial S-rank

S1: Critically Imperiled (i.e., fewer than 5 occurrences in the nation and/or province)

S2: Imperiled (i.e., fewer than 20 occurrences in the nation and/or province)

S3: Vulnerable (i.e., 20-80 occurrences in the nation and/or province)

S4: Apparently Secure (uncommon, but not rare in the nation and/or province)

S5: Secure (common, widespread and abundant in the nation and/or province)

SNA: Not Applicable (species is not a suitable target for conservation activities)

SHB: Breeding is not confirmed in Ontario

S#S#: Range Rank (range of uncertainty about the status of the species or community)

S#?: Rank is Uncertain

S?: Not Ranked Yet

B: Breeding migrants/vagrants

N: Non-breeding migrants/vagrants

Record

X: Recent record (reported within the last 30 years)

H: Historical record (reported 30 or more years ago)

3.1.3.1 *Silver Creek*

Silver Creek, a tributary of the Humber River, is a permanent warmwater watercourse conveyed south under Eglinton Avenue West by a corrugated steel pipe culvert. The channel daylights on the south side of Eglinton Avenue West and is believed to be the outflow of an upstream sewer shed (Transit City Group, 2010).

South of Eglinton Avenue West, Silver Creek can be described as a heterogenous, slow moving channel that is likely the result of an impacted system, limiting the presence of significant or unique fish habitat. The study reach is located within TRCAs Management Zone 4, which targets darter species (MNR/OMNR & TRCA, 2005).

3.1.3.2 *Mimico Creek*

Mimico Creek is a permanent warmwater watercourse that flows through the study area in a southward direction, conveyed under Eglinton Avenue West by a concrete bridge. Within the study area, the creek has been channelized and hardened into a trapezoidal concrete lined system, which has been subject to minor bank and bed erosion. Throughout the study area, natural bed substrates, in-stream habitat structures, and overhanging vegetation are limited.

This section of Mimico Creek provides homogenous, non-limiting habitat in a flashy, highly impacted system. Significant and unique fish habitats were not observed in this area.

3.1.4 ***Vegetation and Vegetation Communities***

A total of 43 vascular plant taxa were identified during the 2019 site visits within the study area. Of the identified species, 22 (51%) were native and 21 (49%) were non-native. In addition to field investigations, a background review identified 26 plant Species of Conservation Concern (SoCC) that have the potential to occur within the study area, primarily in woodlands and areas surrounding Mimico Creek, Silver Creek, and the Humber River. SoCC are species that are designated at the national level as endangered or threatened by Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which are not protected in regulation under the Ontario Endangered Species Act, 2007 (ESA), habitats of species listed as special concern under the ESA, 2007 on the Species at Risk in Ontario (SARO) list (formerly referred to as "Vulnerable" in the Significant Wildlife Habitat Technical Guide), and habitats of species that are rare or substantially declining, or have a high percentage of their global population in Ontario.

A preliminary tree inventory was undertaken within the study area in the fall of 2019. Many of the native tree species identified within the study area were planted in urban settings, including Kentucky Coffeetree (*Gymnocladus dioica*), listed as threatened under the ESA. Naturally occurring Kentucky Coffeetrees are rare throughout Ontario; however, this species is commonly used as a street tree in the CoT. Within the study area, Kentucky Coffeetrees identified during the inventory were located within the public road allowance and confirmed to be planted. Therefore, the Kentucky Coffeetrees documented within the study area are considered exempt under the ESA.

Butternut (*Juglans cinerea*), a provincially endangered tree species, was not confirmed within the study area during the 2019 tree inventory or in past studies; however, suitable habitat is present in the areas surrounding Mimico Creek, Silver Creek and Humber River. This

Addendum considers SAR as those classified as Extirpated, Endangered or Threatened and protected under the ESA, as well as fish and migratory birds protected under the Species at Risk Act (SARA).

Vegetation communities within the study area were mapped and classified using the Ecological Land Classification (ELC) system for southern Ontario (Lee et al. 1998) (see Figure 3-1). Field investigations were completed in 2019 and 2020 to verify vegetation communities identified from the background review and map any new communities identified.

Several vegetation communities were documented within the study area, primarily comprising cultural communities such as constructed greenlands (e.g., greenspace), fencerows and cultural meadows. Several woodland communities were documented throughout the study area, as well as a few wetland communities near the Humber River, particularly in the area surrounding the Humber River. Most of these communities were previously documented in the 2010 EPR and the 2013 EPR Addendum and re-confirmed during the 2019 and 2020 field investigations, however, of these communities, three were not identified in the 2010 EPR or 2013 EPR Addendum. Constructed Greenland and Fencerow (TAGM5) were not mapped in the 2010 EPR or 2013 EPR Addendum, while Mixed Meadow was originally mapped as a Dry-Moist Old Field Meadow Type community (CUM 1-1). None of the vegetation communities are considered provincially or locally rare and all are considered common to the area. Results of the vegetation and vegetation community assessments are provided in Appendix B.

3.1.5 Wildlife and Wildlife Habitat

3.1.5.1 Wildlife

A list of wildlife that have been recorded, or have the potential to occur, within the study area were compiled from past studies and other information sources. All species were screened to determine the presence of SoCC and Species at Risk (SAR). Nine wildlife species were identified within the study area during the 2019 and 2020 field investigations; however, targeted wildlife surveys were not included in the scope of work because field investigations were undertaken outside the appropriate timing windows for these surveys.

SAR were identified during the background review and screened for habitat potential and likelihood to occur within the study area. The habitat assessments were based on vegetation communities present and incidental observations; targeted SAR surveys were not included in the scope of this work. During this screening, 11 wildlife SAR were identified as having the potential to occur within the study area; however, additional studies are required as the design progresses to confirm presence/absence or to verify the limits of potential habitat within the project footprint. Of these SAR, three are protected under both the ESA and SARA - Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Chimney Swift (*Chaetura pelagica*); five are only protected under the ESA - Blanding's Turtle (*Emydoidea blandingii*), Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tricolored Bat (*Perimyotis subflavus*); and three are only protected under SARA - Common Nighthawk (*Chordeiles minor*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), and Wood Thrush (*Hylocichla mustelina*). Nine of these SAR are new records and were not reported in the 2010 EPR and 2013 EPR Addendum.

Furthermore, Barn Swallow, which was reported in the 2010 EPR and 2013 EPR Addendum, but not listed as a SAR, was up-listed to threatened provincially in 2011 and federally in 2017. Of the 11 wildlife SAR identified by this 2020 EPR Addendum, Chimney Swift was the only protected SAR identified in the 2010 EPR and 2013 EPR Addendum. The results for wildlife and wildlife habitat are provided in Appendix B.

3.1.5.2 *Significant Wildlife Habitat*

An assessment of Significant Wildlife Habitat (SWH) was completed for the study area following the SWH Criteria Schedule for Ecoregion 7E (MNR 2015). The assessment was primarily based on the results of the background review and past studies completed for the Project. Vegetation communities were used to inform the type of candidate SWH present within the study area and determine whether targeted wildlife studies are needed to confirm significance. Four of the five main categories of candidate SWH recognized by the MNR have been identified within the study area and include: Seasonal Concentration Areas of Animals, Specialized Habitat for Wildlife, Habitat for SoCC, and Animal Movement Corridors, which are summarized below.

Seasonal Concentration Areas of Animals

The following candidate SWH for seasonal concentration areas of animals have been identified:

- **Raptor Wintering Area** - The areas associated with Mimico Creek and the Humber River have the potential to support wintering habitat for raptors;
- **Bat Maternity Colonies** - All woodlands in the study area are considered to support this habitat type;
- **Turtle Wintering Areas** - Potential habitat may be present in the swamp and marsh communities associated with or near the Humber River, and deep-water pools within the Humber River, Mimico Creek and Silver Creek, if present; and
- **Reptile Hibernaculum** - In the absence of any surveys, all areas associated with the CoTs Natural Heritage System boundaries are considered candidate SWH for reptile hibernaculum.

Specialized Habitat for Wildlife

The following candidate SWH for specialized habitat for wildlife have been identified:

- **Waterfowl Nesting** - The swamp communities located east of the Humber River have the potential to support waterfowl nesting habitat;
- **Turtle Nesting Areas** - Although the requisite ecosites do not appear to be present in the study area, potential habitat may exist along the Humber River, Mimico Creek and Silver Creek if sand and gravel areas are present. In the absence of this information, candidate SWH is considered for those three watercourse areas; and

- **Amphibian Breeding Habitat (Woodland)** - All woodlands and swamp communities in the study area have the potential to provide habitat for amphibians. Additional field studies would be required to confirm presence/absence and significance.

Habitat for SoCC

Several SoCC have the potential to occur in the study area, most of which are considered locally rare. This includes: 11 locally rare amphibians; eight provincially or locally rare reptiles; 22 regionally or locally rare birds; two locally rare mammals; and two invertebrates (including terrestrial crayfish) (see Table 3-2). Habitat for most of these species are limited to Mimico Creek, Silver Creek, the Humber River and surrounding woodlands. The SoCC assessment is provided in Appendix B.

Animal Movement Corridors

Candidate SWH for amphibian breeding habitat (woodland) may be present in the swamp communities east of the Humber River. The areas surrounding the swamps include woodlands and the Humber River which may function as an amphibian movement corridor. As a result, candidate SWH for amphibian movement corridors is considered present in the area surrounding the swamp communities and extending to the Humber River.

3.1.6 Designated Natural Areas and Parks

Designated areas are considered in this report as areas defined by resource agencies and municipalities, through legislation, policies, or approved management plans, to have special or unique value. This includes provincial land use and environmental plan areas (e.g., Greenbelt), national and provincial parks, designated federal wildlife/marine areas, Areas of Natural and Scientific Interest, Provincially Significant Wetlands, Environmentally Sensitive Areas, and Natural Heritage Systems included in the CoT and CoM Official Plans. Two designated areas (Greenbelt Plan Area and Natural Heritage Systems) are within the study area.

The Greenbelt Plan Area (Urban River Valley designation), is located along the Humber River immediately east of the Scarlett Road and the Eglinton Avenue West intersection. The Natural Heritage System designation, as identified in the CoTs Official Plan (Map 9: Natural Heritage System), is found throughout the study area including: Mimico Creek (located east of Highway 27 and west of the transmission line corridor at Martin Grove Road), Silver Creek (extending east of Russell Road and approximately 275 m west of Royal York Road along Silver Creek, a tributary of the Humber River), and the Humber River (from Scarlett Road at Eglinton Avenue West to approximately 430 m east of Jane Street along the Humber River). Designated natural areas and parks are discussed further in Appendix B.

Table 3-2: Wildlife Species of Conservation Concern that have Potential to Occur within the ECWE Study Area

Species	SAR Status		Conservation Rank and Rarity Status					
Common Name	National (SARA)	Provincial (ESA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities	Regional Rarity Rank	Local Rarity Rank
AMPHIBIANS								
American Bullfrog (<i>Lithobates catesbeianus</i>)				G5	S4			L2
Eastern Red-backed Salamander (<i>Plethodon cinereus</i>)				G5	S5			L3
Gray Treefrog (<i>Hyla versicolor</i>)				G5	S5			L2
Mudpuppy (<i>Necturus maculosus</i>)				G5	S4			L2
Northern Leopard Frog (<i>Rana pipiens</i>)				G5	S5			L3
Pickerel Frog (<i>Lithobates palustris</i>)			NAR	G5	S5			L2
Red-spotted Newt (<i>Notophthalmus viridescens</i>)				G5T5	S5			L2
Spotted Salamander (<i>Ambystoma maculatum</i>)				G5	S4			L1
Spring Peeper (<i>Pseudacris crucifer</i>)				G5	S5			L2
Western Chorus Frog (Carolinian population) (<i>Pseudacris triseriata</i>)				G5TNR	S4			L2
Wood Frog (<i>Rana sylvatica</i>)				G5	S5			L2
REPTILES								
Eastern Milksnake (<i>Lampropeltis Triangulum</i>)	SC, Schedule 1		SC	G5	S4			L3
Eastern Musk Turtle (<i>Sternotherus odoratus</i>)		SC	SC	G5	S3			LX
Eastern Ribbonsnake (<i>Thamnophis sauritus</i>)		SC	SC	G5	S4			LX
Midland Painted Turtle (<i>Chrysemys picta marginata</i>)			SC	G5T5	S4			L3
Northern Map Turtle (<i>Graptemys</i>)	SC,	SC	SC	G5	S3			L2

Species	SAR Status		Conservation Rank and Rarity Status					
Common Name	National (SARA)	Provincial (ESA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities	Regional Rarity Rank	Local Rarity Rank
<i>geographica</i>)	Schedule 1							
Red-bellied Snake (<i>Storeria occipitomaculata</i>)				G5	S5			L3
Snapping Turtle (<i>Chelydra serpentina</i>)	SC, Schedule 1	SC	SC	G5	S3			L3
Smooth Greensnake (<i>Opheodrys vernalis</i>)				G5	S4			L2
MAMMALS								
Ermine (<i>Mustela erminea</i>)				G5	S5			L3
Northern Short-tailed Shrew (<i>Blarina brevicauda</i>)				G5	S5			L3
BIRDS								
Urban Habitat								
Killdeer (<i>Charadrius vociferus</i>)				G5	S5B, S5N	Increase		L4
Woodland Habitat								
American Woodcock (<i>Scolopax minor</i>)				G5	S4B	Increase		L3
Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>)				G5	S5B	Increase		L3
Brown Creeper (<i>Certhia americana</i>)				G5	S5B			L3
Chestnut-sided Warbler (<i>Setophaga pensylvanica</i>)				G5	S5B			L3
Eastern Screech-Owl (<i>Megascops asio</i>)				G5	S4			L3
Eastern Wood-Pewee (<i>Contopus virens</i>)	SC, Schedule 1	SC	SC	G5	S4B	Increase		L4
Magnolia Warbler (<i>Setophaga magnolia</i>)				G5	S5B			L3
Mourning Warbler (<i>Geothlypis philadelphia</i>)				G5	S4B			L3

Species	SAR Status		Conservation Rank and Rarity Status					
Common Name	National (SARA)	Provincial (ESA)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities	Regional Rarity Rank	Local Rarity Rank
Nashville Warbler (<i>Oreothlypis ruficapilla</i>)				G5	S5B			L3
Northern Flicker (<i>Colaptes auratus</i>)				G5	S4B	Increase		L4
Northern Waterthrush (<i>Parkesia noveboracensis</i>)				G5	S5B			L2
Ovenbird (<i>Seiurus aurocapilla</i>)				G5	S4B			L2
Pileated Woodpecker (<i>Dryocopus pileatus</i>)				G5	S5			L3
Scarlet Tanager (<i>Piranga olivacea</i>)				G5	S4B			L3
Sharp-shinned Hawk (<i>Accipiter striatus</i>)				G5	S5			L3
Veery (<i>Catharus fuscescens</i>)				G5	S4B			L2
White-throated Sparrow (<i>Zonotrichia albicollis</i>)				G5	S5B			L3
Winter Wren (<i>Troglodytes hiemalis</i>)				G5	S5B			L3
Yellow-bellied Sapsucker (<i>Sphyrapicus varius</i>)				G5	S5B			L3
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)				G5	S4B			L3
Yellow-throated Vireo (<i>Vireo flavifrons</i>)				G5	S4B			L3
INVERTEBRATES								
Monarch (<i>Danaus plexippus</i>)	SC, Schedule 1	SC	END	G4	S2N, S4B			

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Definitions, Acronyms and Symbols

Global G-rank

G1: Critically Imperiled (at very high risk of extinction)

G2: Imperiled (at high risk of extinction)

G3: Vulnerable (at moderate risk of extinction)

G4: Apparently Secure (Uncommon but not rare)

G5: Secure (common, widespread and abundant)

G#G#: Range Rank (range of uncertainty about the status of a taxon or ecosystem type)

GU: Unrankable (currently unrankable due to lack of information)

GNR: Unranked (global rank not yet assessed)

GNA: Not Applicable (species is not a suitable target for conservation activities)

T: Denotes that the rank applies to a subspecies or variety

B: Breeding

N: Non-breeding

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)

ESA: Endangered Species Act

SARA: Species at Risk Act

SARO: Species at Risk in Ontario

SARA or ESA designation

END - Endangered

THR - Threatened

SC - Special Concern

NAR - Not at Risk

Provincial S-rank

S1: Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)

S2: Imperiled (i.e. fewer than 20 occurrences in the nation and/or province)

S3: Vulnerable (i.e. 20-80 occurrences in the nation and/or province)

S4: Apparently Secure (uncommon, but not rare in the nation and/or province)

S5: Secure (common, widespread and abundant in the nation and/or province)

SNA: Not Applicable (species is not a suitable target for conservation activities)

SHB: Breeding is not confirmed in Ontario

S#S#: Range Rank (range of uncertainty about the status of the species or community)

S#?: Rank is Uncertain

S?: Not Ranked Yet

B: Breeding migrants/vagrants

N: Non-breeding migrants/vagrants

Local Rarity (TRCA)

L1: Species of Regional Conservation Concern (regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts)

L2: Species of Regional Conservation Concern (somewhat more abundant and generally slightly less sensitive than L1 species)

L3: Species of Regional Conservation Concern (generally less sensitive and more abundant than L1 and L2 ranked species)

L4: Species of Urban Concern (occur throughout the region but could show declines if urban impacts are not mitigated effectively)

L5: Species that are considered secure throughout the region

L+: Introduced species (not native to the Toronto region)

LX: Extirpated species (species not recorded in the region in the past 10 years)

LS: Sporadic breeder (species not recorded in the region in the past 10 years)

L+?: Species is probably introduced

Conservation Priorities

Recovery Objective - Species at Risk

Increase - Population in decline

Maintain Current - Appears to be stable or increasing

3.1.7 Air Quality

3.1.7.1 Methodology

The methodology used for this Air Quality Impact Assessment (AQIA) is outlined in the MTO *Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects* (MTO Guide) (MTO, 2012), and further described in Appendix C. The assessment relied on atmospheric dispersion modelling. The guidance pertaining to the technical aspects of the modelling is provided within the MECP *Air Dispersion Modelling Guideline for Ontario* (MECP, 2017).

Local air quality impacts were assessed by estimating contaminant concentrations resulting from the worst combination of high traffic volumes, largest increase in traffic, and the proximity to residential areas or critical receptors as defined in the MTO Guide, in two scenarios:

- Existing Case scenario (2019); and
- Future Case scenario (2031), with new vehicles traffic patterns.

For both scenarios, traffic patterns, estimated idling time, estimated Emission Factors for each type of vehicles considered in this study, etc. were used to determine impacts at representative sensitive and critical receptors within the study area and were then compared to applicable regulatory criteria. Contaminants considered in this study included Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), acrolein, benzene, 1,3 butadiene, acetaldehyde, formaldehyde, Benzo(a)Pyrene (B(a)P) and Particulate Matter with a diameter under 2.5 microns (PM_{2.5}).

The modelled concentrations due to the change in traffic patterns from the Project were added to background sources. The resulting sums were then compared to the air quality threshold in order to evaluate the potential for adverse effects. A potential for an adverse effect is considered to exist when the summed concentration for a contaminant exceeds the air quality criterion at a sensitive receptor. If the background concentration of a contaminant already exceeds the criterion, then a potential for an adverse effect already exists, without the consideration of the Project.

3.1.7.2 Background Concentrations

By definition, background concentrations include sources that affect air quality in the study area, and generally do not include emissions that have the potential to occur from the Project itself. Thus, the MECP and National Air Pollution Surveillance (NAPS) ambient air monitoring stations were reviewed and selected based on their proximity to the study area and the fact that they are located in an area that has minimal to no influence from an existing transit corridor. This avoids double counting the ambient background levels of the Contaminants of Concern (COCs) when processed with the dispersion modelling results. However, even though the background air quality stations selected were not necessarily close to an existing transit corridor, it is important to note that these background air quality stations already include and double count some of the traffic emissions that were being modelled. Therefore, some of the COCs generated by the vehicles modelled in this study are already included in

the background concentrations of those stations since they currently contribute to ambient air pollutants concentrations. Hence, the obtained results tend to be conservative.

A total of five MECP and NAPS ambient air monitoring stations were identified as shown in Figure 3-2. One MECP station was selected to represent respirable PM_{2.5}, NO₂, CO and Ozone (O₃). The Toronto West ambient air monitoring station was chosen because it is the closest station to the study area. Furthermore, its location is qualified as an urban region, which is representative of the Project's stations surroundings. Toronto West station was thus selected to represent the background PM_{2.5}, NO₂, CO and O₃ concentrations.

Four NAPS stations were selected to represent background concentrations for other representative contaminants. The Egbert monitoring station was the only station with recent data for acetaldehyde and formaldehyde and was thus selected to represent the acetaldehyde and formaldehyde background concentrations. Newmarket monitoring station was selected to represent benzene and 1,3-butadiene background concentrations. Toronto (Ruskin/Perth Street) monitoring station was used for acrolein and Toronto - Gage Institute was used for B(a)P. A summary of data from these stations and the years of data used are provided in Table 3-3.

Table 3-3: Ambient Air Monitoring Station Information

Contaminant of Concern	Station ID	Station Location	Years of Data Used
Particulate Matter (PM _{2.5})	MECP - 35125	Toronto West (125 Resources Road)	2013-2017
Nitrogen Dioxide (NO ₂)	MECP - 35125	Toronto West (125 Resources Road)	2013-2017
Carbon Monoxide (CO)	MECP - 35125	Toronto West (125 Resources Road)	2013-2017
Ozone (O ₃)	MECP - 35125	Toronto West (125 Resources Road)	2013-2017
Acrolein	NAPS - 60418	Toronto (Ruskin/Perth Street)	2002-2006
Benzene	NAPS - 65101	Newmarket (Eagle/McCaffrey Road)	2011-2015
1,3-Butadiene	NAPS - 65101	Newmarket (Eagle/McCaffrey Road)	2011-2015
Acetaldehyde	NAPS - 64401	Egbert (8 th Line and 10 th Side Road)	2006-2010
Formaldehyde	NAPS - 64401	Egbert (8 th Line and 10 th Side Road)	2006-2010
Benzo(a)pyrene	NAPS - 60427	Toronto - Gage Institute (223 College Street)	2010-2014

To establish an initial baseline of concentrations for the COCs, background data from the stations listed above were gathered and compiled for the most recent five consecutive years. Based on published air quality studies, common practices, and the United States Environmental Protection Agency air dispersion modelling guidelines, the 90th percentile background concentration for each COC was utilized from the stations for averaging periods of one hour, eight hours and 24-hours. For COCs with an annual averaging period, the annual mean from the ambient air monitoring stations was used. Values of interest for the considered COCs were compiled and are presented in Table 3-4.

It is important to note that two of the COCs, nitrogen dioxide and benzo(a)pyrene, are already exceeding their applicable criterion. In fact, the background concentration of nitrogen dioxide, for the annual period, exceeds its criterion by more than 40%. As far as benzo(a)pyrene, both 24-hour and annual periods concentrations found at the ambient air monitoring stations are exceeding the threshold limit by 140% and 670%, respectively. Furthermore, it can be noted that the annual threshold limit is very close to be reached by the background concentrations for two other contaminants of concerns, which are PM_{2.5} and benzene. Therefore, exceedances for these specific contaminants can be explained by the significant background concentration already present in the vicinity of the project.

Figure 3-2: Location of Air Monitoring Stations

Table 3-4: Air Quality Background Baseline for ECWE

Contaminant	Station ID	Data Years	Data Source	Period	Unit	Criterion	Maximum	Minimum	Median	Background Value	% of Criterion
PM _{2.5}	MECP-35125	2013-2017	MECP	24 Hour	µg/m ³	27.0	41.5	0.4	7.0	14.2	52%
				Annual	µg/m ³	8.8	9.1	7.0	8.5	8.15	93%
NO ₂	MECP-35125	2013-2017	MECP	1 Hour	µg/m ³	400	170.3	0.0	28.3	62.0	15%
				1 Hour (CAAQS 2025)	µg/m ³	83	170.3	0.0	28.3	62.0	75%
				24 Hour	µg/m ³	200	111.7	5.7	31.1	50.5	25%
				Annual	µg/m ³	60	35.0	30.7	33.1	33.0	55%
				Annual (CAAQS 2025)	µg/m ³	23	35.0	30.7	33.1	33.0	143%
CO	MECP-35125	2013-2017	MECP	1 Hour	µg/m ³	36200	2086	0	280	450	1%
				8 Hour	µg/m ³	15700	1541	37	288	436	3%
O ₃	MECP-35125	2013-2017	MECP	1 Hour	µg/m ³	-	177.8	0.0	44.1	84	-
				24 Hour	µg/m ³	-	131.5	1.3	45	71	-
				Annual	µg/m ³	-	47.3	45.1	46.1	46.3	-
Acrolein	NAPS-60418	2002-2006	NAPS	24 Hour	µg/m ³	0.4	1.2	0.0	0.072	0.24	59%
				1 Hour	µg/m ³	4.5	-	-	-	-	-
Benzene	NAPS-60427	2011-2015	NAPS	24 Hour	µg/m ³	2.3	-	-	-	0.65	28%
				Annual	µg/m ³	0.45	1.19	0.10	0.41	0.44	98%
1,3 Butadiene	NAPS-60427	2011-2015	NAPS	24 Hour	µg/m ³	10	-	-	-	0.05	0.5%
				Annual	µg/m ³	2	0.10	0.01	0.02	0.03	1.5%
Acetaldehyde	NAPS-64401	2006-2010	NAPS	24 Hour	µg/m ³	500	3.1	0.0	0.85	1.6	0.3%
				30 min	µg/m ³	500	-	-	-	-	-
Formaldehyde	NAPS-64401	2006-2010	NAPS	24 Hour	µg/m ³	65	8.2	0.14	2.2	4.2	6%
Benzo(a)pyrene	NAPS-60427	2010-2014	NAPS	24 Hour	µg/m ³	0.00005	-	-	-	0.00012	240%
				Annual	µg/m ³	0.00001	-	-	-	0.000077	770%

Legend

- Background concentration is superior than 80% of the applicable criterion.
- Background concentration is superior than the applicable criterion.
- " - " No background concentration available.

Furthermore, the MTO Guide prescribes a single worst case set of meteorological conditions for use in a credible worst case analysis (MTO, 2012). For this Project, a more refined approach was adopted, in which five years of hourly meteorological data were used in AERMOD. Predicted worst case concentrations for 30 minutes, one hour, eight hour, 24 hour and annual averaging times were extracted from the results for the entire five year period. Two meteorological datasets were needed to perform dispersion modelling analysis using the AERMOD model: upper air data (i.e., measurements recorded at various heights above the surface by weather balloons released twice per day); and surface data (i.e., hourly measurements recorded at surface based weather stations located ten metres above the ground). Upper air data were obtained from the Buffalo International Airport Station (ID 14733) for the years 2015 - 2019 inclusively, and surface data were obtained from the Lester B. Pearson International Airport (ID 61587) for the same five year period in pre processed datasets directly from the MECP. Buffalo is the upper air station designated for the CoT, as upper air quality does not change significantly over a geographic area. Data from 2015 to 2019 are the most recent available from the Buffalo Station and were used for the purposes of this study. The MECP meteorological datasets were processed using the AERMET meteorological data processor for the urban surface category.

3.1.8 Contamination

A limited Phase I Environmental Site Assessment will be completed to understand historical and current land uses and potential environmental concerns (soil and groundwater) associated with the project alignment and station locations.

3.1.9 Noise and Vibration

3.1.9.1 Background and Methodology

As part of the 2010 EPR, a Noise and Vibration Impact Assessment (NVIA) was conducted to identify existing conditions (land use and noise sensitive points of reception) and potential noise and vibration impacts to compare the difference between anticipated future conditions with and without the ECLRT, and to determine any associated mitigation measures that may be required during LRT construction and operation. The ECLRT alignment passed through commercial, industrial, and residential neighbourhoods. In 2013, a new NVIA was completed to address changes to the ECLRT near Mount Dennis Station.

A NVIA was prepared for the conceptual design for the Project and ancillary facilities in support of this 2020 EPR Addendum. The report documents existing conditions (i.e., land use, noise and vibration sensitive points of reception, and baseline noise and vibration levels) and examines the noise and vibration impact of the revised project configuration, and can be found in Appendix D.

The NVIA assessed project noise and vibrations against the criteria outlined in Table 3-5. Further details can be found in Appendix D, while Project noise and vibration impacts for both construction and operations are considered in Section 4.2.9.

Table 3-5: Noise and Vibration Criteria Guidelines

Target of Guidance/Criteria	Source of Guidance/Criteria
Operational Noise - LRT	1993 Ministry of Environment and Energy (MOEE)/TTC Protocol
Operational Noise - Stationary	Ontario Ministry of Environment, Conservation and Parks (MECP) NPC-300
Operational Vibration - LRT	1993 MOEE/TTC Protocol
Construction Noise	US Federal Transit Administration FTA-VA-90-1003-06 US Federal Highway Administration FHWA-HEP-06-015
Construction Vibration Public Annoyance	1993 MOEE/TTC Protocol
Construction Vibration Building Damage	City of Toronto By-Law 514-2008

Noise and vibration sensitive points of reception include, but are not limited to:

- Multi- and single-family residences; and
- Noise sensitive institutional uses such as schools, hospitals, nursing homes and places of worship.

Table 3-6 lists the representative closest receptors along the alignment within the study area and Figure 3-3 illustrates the locations of the noise receivers and monitors in the study area.

Table 3-6: Noise and Vibration Sensitive Representative Receptors

	#	ID	Nearest Address	Side	Height (m)	Land Use*
S	Sensitive Receiver					
C	Sensitive Receiver (to construction only)					
S	1	West-1	1149 Weston Road	South	1.5	Church
S	2	West-2	11 Hollis Street	North	1.5	Single Family Residence (SFR)
S	3	Jane-1	1156 Weston Road	North	1.5	SFR
S	4	Jane-2	3545 Eglinton Avenue West	South	1.5	SFR
S	5	Jane-3	3559 Eglinton Avenue West	South	19	Multi-Family Residence (MFR)
S	6	Jane-4	3561 Eglinton Avenue West	South	11	MFR
S	7	Jane-5	3580 Eglinton Avenue West	North	1.5	SFR
S	8	Jane-6	3593 Eglinton Avenue West	South	4.5	SFR
S	9	Jane-7	40 Glenvalley Drive	North	4.5	SFR
S	10	Scar-1	75 Emmett Avenue	North	54	MFR
S	11	Scar-2	85 Emmett Avenue	North	60	MFR
S	12	Roya-1	38 Fontenay Court	South	12	MFR
S	13	Roya-2	1 Richview Road	North	14	MFR
S	14	Roya-3	30 Fontenay Court	South	18	MFR
S	15	Roya-4	20 Fontenay Court	South	11	MFR
S	16	Roya-5	25 Richview Road	North	16.5	MFR

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	#	ID	Nearest Address	Side	Height (m)	Land Use*
S	17	Roya-6	39 Richview Road	North	11	MFR
S	18	Roya-7	55 Lemonwood Drive	South	4.5	SFR
S	19	Roya-8	61 Richview Road	North	17	MFR
S	20	Roya-9	81 Lemonwood Drive	South	7	MFR
S	21	Roya-10	60 Richview Road	North	11	Nursing Home
S	22	Roya-11	87 Lemonwood Drive	South	7	MFR
S	23	Roya-12	4005 Eglinton Avenue West	South	14	Nursing Home
S	24	Roya-13	125 La Rose Avenue	North	40	MFR
S	25	Roya-14	144 La Rose Avenue	North	32	MFR
S	26	Roya-15	35 Swordbill Drive	South	1.5	MFR
S	27	Roya-16	165 La Rose Avenue	North	31	MFR
S	28	Roya-17	1403 Royal York Road	North	21	MFR
S	29	Roya-18	1387 Royal York Road	South	4.5	MFR
S	30	Isli-1	185 La Rose Avenue	North	1.5	MFR
S	31	Isli-2	27 Edenvale Crescent	South	4.5	SFR
S	32	Isli-3	4400 Eglinton Avenue West	North	1.5	SFR
S	33	Isli-4	25 Hamptonbrook Drive	North	4.5	SFR
C	34	Isli-5	118 Poplar Heights Drive	South	4.5	SFR
S	35	Isli-6	104 Poplar Heights Drive	South	4.5	SFR
S	36	Kipl-1	1738 Islington Avenue	South	1.5	School
S	37	Kipl-2	58 Waterford Drive	North	4.5	MFR
S	38	Kipl-3	6 Evesham Court	South	1.5	SFR
S	39	Kipl-4	79 Waterford Drive	North	1.5	SFR
S	40	Kipl-5	57 Oldham Road	South	4.5	SFR
C	41	Kipl-6	265 Wincott Road	North	1.5	Commercial
C	42	Kipl-7	250 Wincott Road	North	1.5	Commercial
S	43	Kipl-8	7 Winterbourne Court	South	4.5	SFR
S	44	Kipl-9	4650 Eglinton Avenue West	North	7	Nursing Home
C	45	Kipl-10	177 Princess Anne Cres	South	4.5	SFR
S	46	Kipl-11	4620 Eglinton Avenue West	North	16	MFR
S	47	Kipl-12	5 Cheviot Place	South	1.5	MFR
S	48	Kipl-13	43 Dryden Way	North	7	MFR
S	49	Mart-1	53 Widdicombe Place	North	44	MFR
S	50	Mart-2	57 Widdicombe Place	North	46	MFR
S	51	Mart-3	4704 Eglinton Avenue West	South	17	MFR
S	52	Mart-4	4702 Eglinton Avenue West	South	17	MFR
S	53	Mart-5	4700 Eglinton Avenue West	North	4.5	MFR
C	54	Mart-6	230 Lloyd Manor Road	South	4.5	Commercial
C	55	Mart-7	142 Widdicombe Hill Blvd	North	4.5	MFR
S	56	Mart-8	226 Lloyd Manor Road	South	4.5	SFR

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	#	ID	Nearest Address	Side	Height (m)	Land Use*
S	57	Mart-9	4679 Eglinton Avenue West	North	7	MFR
S	58	Mart-10	50 Winterton Drive	South	4.5	School
S	59	427-1	620 Martin Grove Road	North	37	MFR
S	60	427-2	99 Dalegrove Crescent	South	1.5	SFR
S	61	427-3	95 Decarie Circle	South	4.5	MFR
S	62	427-4	940 The East Mall	South	1.5	MFR
S	63	Renf-1	151 Rangoon Road	South	1.5	SFR
S	64	Renf-2	132 Rangoon Road	South	1.5	SFR
S	65	Renf-3	27 Hardwick Court	South	1.5	SFR
S	66	Renf-4	36 Sagamore Crescent	South	1.5	SFR
S	67	Comm-1	720 Renforth Drive	South	1.5	School
S	68	Comm-2	71 Bingham Crescent	South	4.5	SFR
S	69	Comm-3	29 Garbutt Crescent	South	4.5	SFR
C	70	Comm-4	5080 Commerce Blvd	South	1.5	Commercial

* SFR - Single Family Residence; MFR - Multi-Family Residence



Figure 3-3: Noise and Vibration Sensitive Representative Receptors

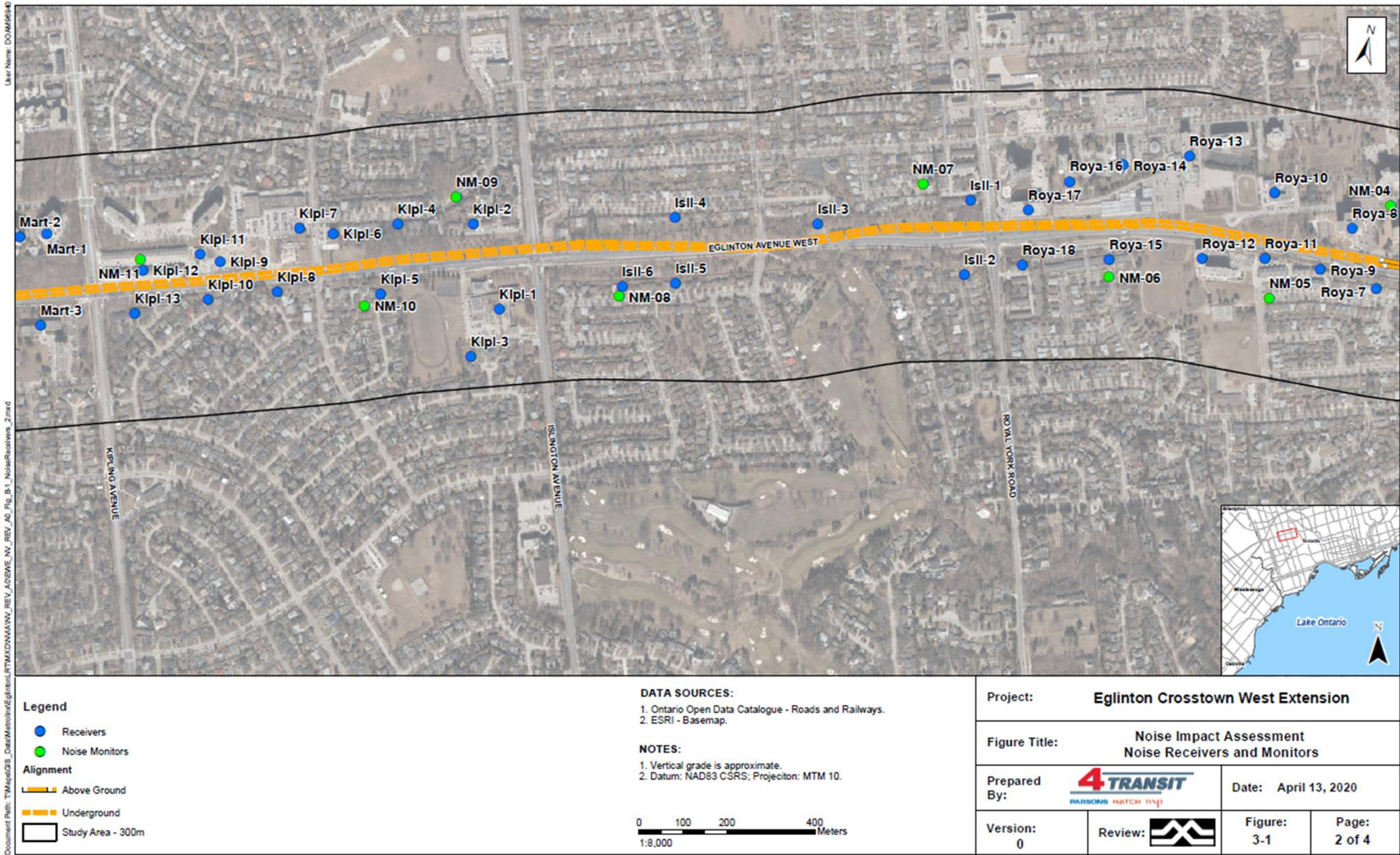


Figure 3-3: Noise and Vibration Sensitive Representative Receptors



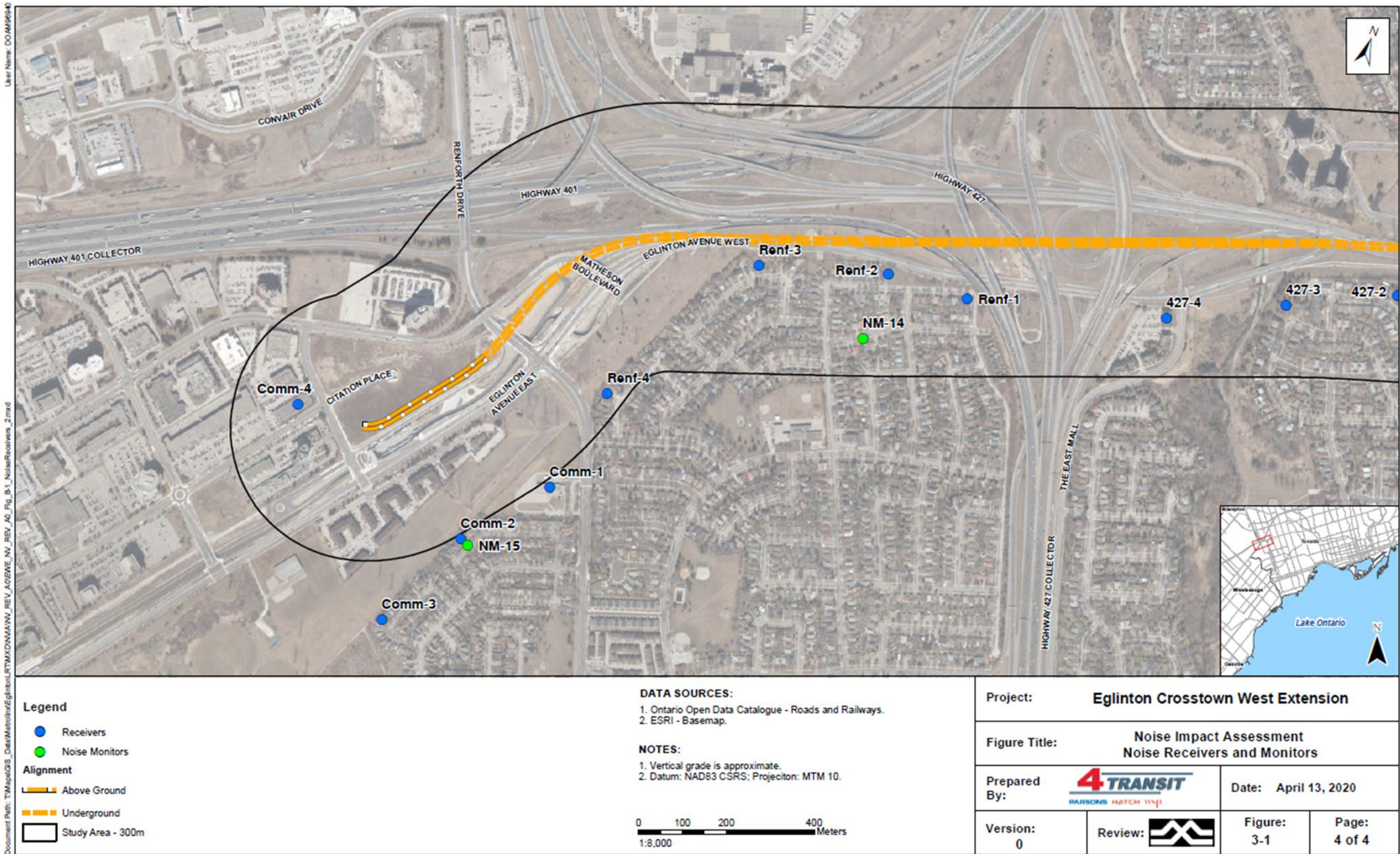


Figure 3-3: Noise and Vibration Sensitive Representative Receptors

The Project within the study area will consist of partially at-grade, tunnel, and elevated sections. The alignment follows Eglinton Avenue West, extending approximately 9.2 km west from the future Mount Dennis ECLRT Station to Renforth Drive. The alignment has been revised to be primarily below-grade (underground) except for the elevated track between east of Jane Station and Scarlett Station, and at-grade track near Renforth Station.

Within the study area of this assessment, the receptors are predominantly residential buildings. Several institutional and commercial receptors are present within the study area as listed in Table 3-7. These receptors are assessed as necessary on an individual basis. For all receptors, noise is assessed at the worst-case location.

High-sensitivity vibration receptors are buildings that require additional considerations for vibrations and ground-borne noise (e.g., concert halls, TV studios, hospitals with MRIs, etc.). Category I type receptors typically contain vibration sensitive equipment or conduct ground borne noise or vibration sensitive activity where the conventional MECP/TTC Protocol vibration impact criteria would impede commercial activities within these facilities. A desktop review of the Eglinton Corridor concluded no high-sensitivity vibration receptors are present within the United States Federal Transit Administration (FTA) recommended 137 m(450-ft) screening distance of the alignment for this project.

3.1.9.2 *Ambient Noise and Vibrations*

The ambient noise characteristics in the study area are typical of the general “urban hum” of a major population centre. NPC-300 defines “urban hum” as the “...aggregate sound of many unidentifiable noise sources due to the activities of people and primarily composed of road traffic related sound sources”.

To determine the impact of the project on noise and vibrations in the community, pre-project levels have been evaluated through modelling and validated against baseline measurements. The baseline noise measurements are provided in Table 3-7. The most significant source of ambient noise and vibration is from road traffic along Eglinton Avenue West and the Highway 401/Highway 427 interchange.

The noise data was filtered to include only data acquired during the moderate weather conditions (i.e., no precipitation or high winds). At least 48-hours of data was collected at each noise monitor. From the collected data, the one-hour minimum equivalent noise level, $L_{eq(1hr)}$ at both daytime and nighttime were determined. Following the MECP Environmental Noise Guideline NPC-300, the one-hour minimum equivalent noise level was used to conservatively represent baseline levels with the quietest measured noise level at each monitoring location.

Since no existing rail operations are present, no significant sources of pre-project vibrations are present. In addition, no highly sensitive receivers were identified within 137 m of the proposed alignment (137 m is the FTA screening distance for Category I vibration sensitive receivers). Therefore, baseline vibration is assumed to be negligible so measurements were not taken to validate the vibration model nor establish a background vibration level that is higher than the guideline limits. Appendix D contains more details on noise monitoring.

Table 3-7: Noise Monitor Locations and Measured Baseline Noise

Monitored Location ID	Address Nearest to Monitor	Baseline Measurements (dBA)	
		Day ($L_{eq(1hr)}$)	Night ($L_{eq(1hr)}$)
NM-01	30 Somerville Avenue	50.3	42.8
NM-02	120 Emmett Avenue	51.4	42.9
NM-03	SE Scarlett Heights Park	59.9	49.7
NM-04	39 Richview Road	55.8	46.6
NM-05	62 Lemonwood Drive	52.2	42.1
NM-06	26 Swordbill Drive	49.4	42.2
NM-07	25 Crestridge Heights Road	46.6	36.6
NM-08	102 Poplar Heights Drive	53.6	39.9
NM-09	58 Waterford Drive	55.7	39.8
NM-10	46 Oldham Road	51.4	42.7
NM-11	43 Dryden Way	53.8	43.3
NM-12	18 Dewsbury Crescent	38.2	39.9
NM-13	134 Widdicombe Hill Blvd	51.9	43.0
NM-14	9 Courtwright Road	54.7	47.5
NM-15	71 Bingham Crescent	49.1	41.5

3.2 Socio-Economic Environment

3.2.1 Urban Structure and Land Use Policy

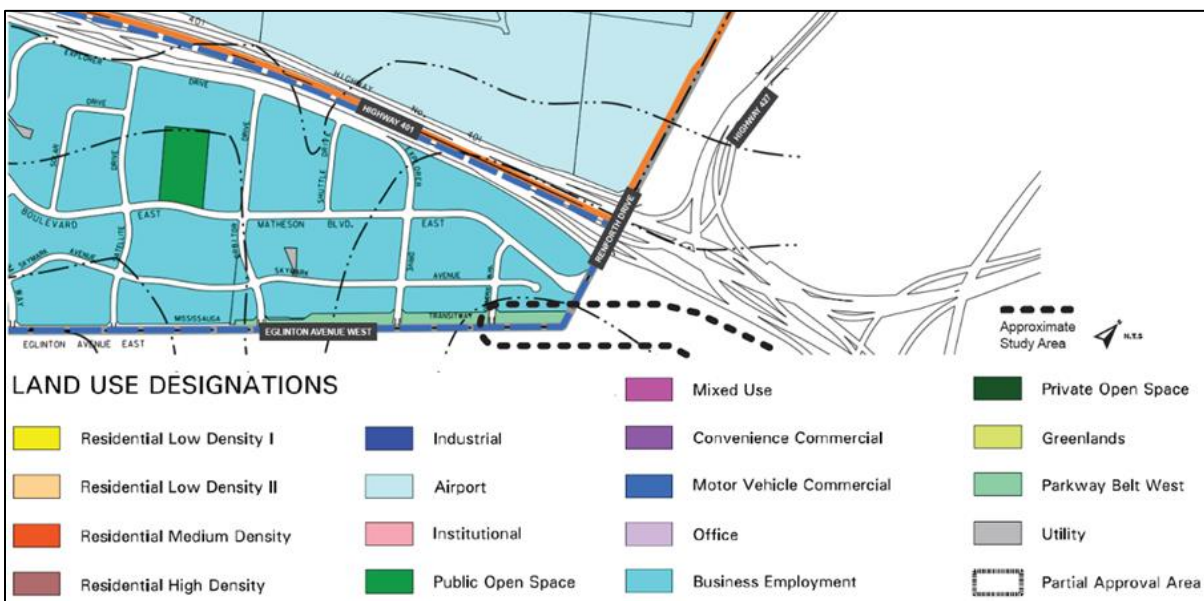
The City of Toronto *Official Plan* (2019) establishes a series of land uses which are present within the Project's study limits. The Official Plan land use designations within the station areas are summarized in Figure 3-4 and further described for each station area in Appendix E. The majority of Eglinton Avenue West within the study area is also designated as Avenues within the *Official Plan* Map 2 - Urban Structure. Avenues are intended to serve as areas where the City's growth will be directed.



Source: City of Toronto Official Plan (2019)

Figure 3-4: City of Toronto Official Plan Land Use Designations

Specific to the proposed Renforth Station area and as shown in Figure 3-5, within areas designated as part of the City of Mississauga *Official Plan* (2015), lands on the north side of Eglinton Avenue West and west of Renforth Drive are designated as Business Employment, with the Parkway West Belt designation consisting of the existing Bus Rapid Transit (BRT) facility along the north side of Eglinton Avenue West. On the north side of Highway 401, the lands are designated as Airport.



Source: City of Mississauga Official Plan- Schedule 10 (2019)

Figure 3-5: City of Mississauga Official Plan Land Use Designations

3.2.2 Existing Land Use/Community Features

A detailed overview of the existing land use surrounding each station area is detailed in Appendix E. A summary of existing community amenities within the Project area is summarized in Table 3-8. The proposed stations will service a number of schools, parks, places of worship, libraries and other facilities within a close proximity of the stations. The table below generally covers the entire alignment, with the exception of the Highway 427 interchange where the Richview Memorial Cemetery is located on the south side of Eglinton Avenue West.

Table 3-8: Existing Community Amenities

Name	Address	Type
Mount Dennis Station Area		
Dennis Avenue Community School	17 Dennis Avenue	School
Our Lady of Victory Catholic School	70 Guestville Avenue	School
York Recreation Centre	115 Black Creek Drive	Recreation Centre
Toronto Public Library - Mount Dennis Branch	1123 Weston Road	Library
Toronto Fire Station 421	6 Lambton Avenue	Emergency Services
The Salvation Army York Community	1100 Weston Road	Place of Worship

Name	Address	Type
Church		
Iglesia Ni Cristo - Locale of Midtown Toronto	71 Guestville Avenue	Place of Worship
Church of St Mary and St Martha	1149 Weston Road	Place of Worship
Fellowships Redeemed Church of God	1146 Weston Road	Place of Worship
Bethel Born Again Church	1182 Weston Road	Place of Worship
Moment Of Grace Church	1192 Weston Road	Place of Worship
Pearen Park	30 Pearen Street	Park
North Keelesdale Park	415 Black Creek Drive	Park
Jane Station Area		
Roselands Junior Public School	990 Jane Street	School
Eglinton Flats	101 Emmett Avenue	Park
Fergy Brown Park	3700 Eglinton Avenue West	Park
Scarlett Woods Golf Course	1000 Jane Street	Public Golf Course
Gladhurst Park	2 Elhurst Court	Park
Scarlett Station Area		
West Park Healthcare Centre	82 Buttonwood Avenue	Healthcare
Vedanta Society Of Toronto	120 Emmett Avenue	Place of Worship
York-Humber High School	100 Emmett Avenue	School
La Rose Park	65 La Rose Avenue	Park
Scarlett Heights Park	24 Fontenay Court	Park
Canadian Ukrainian Memorial Park	425 Scarlett Road	Park
Scarlett Bridge Parkette	South-east corner of the intersection Scarlett Road and Eglinton Avenue West	Park
Royal York Station Area		
Hilltop Chapel	243 La Rose Avenue	Place of Worship
All Saints Roman Catholic Church	1415 Royal York Road	Place of Worship
St. Matthias' Anglican Church Etobicoke	1428 Royal York Road	Place of Worship
All Saints Catholic Elementary School	1435 Royal York Road	School
Buttonwood Park	30 Mulham Place	Park
Allanhurst Park	1336 Royal York Road	Park
Islington Station Area		
Richview Collegiate Institute	1738 Islington Avenue	School
Toronto Fire Station 443	1724 Islington Avenue	Emergency Services
Toronto Public Library - Richview Branch	1806 Islington Avenue	Library
Christian Science Church	4480 Eglinton Avenue West	Place of Worship
Silver Creek Park	44 Strathdee Drive	Park
Lion's Gate Park	58 Waterford Drive	Park
Eden Valley Park	10 Eden Valley Drive	Park
Kipling Station Area		
Central Etobicoke High School	10 Denfield Street	School
St Marcellus Catholic School	15 Denfield Street	School
Richview Church	1548 Kipling Avenue	Place of Worship
Denfield Park	1496 Kipling Avenue	Park
Warrender Park	63 Warrender Avenue	Park

Name	Address	Type
Widdicombe Hill Park	31 Widdicombe Hill	Park
Martin Grove Station Area		
Martingrove Collegiate Institute	50 Winterton Drive	School
Princess Margaret Junior School	65 Tromley Drive	School
Toronto Emergency Medical Service Station 13	555 Martin Grove Road	Emergency Services
Richview Park	59 Clement Road	Park
Renforth Station Area		
Mother Cabrini Catholic School	720 Renforth Drive	School
Briar Crest Park	60 Wellesworth Drive	Park
Centennial Park	256 Centennial Park Road	Park

3.2.3 *Corridor Wide Population and Employment*

Demographic information for the Project was obtained through a review of the CoTs Neighbourhood Profiles, which includes a summary of key information from the 2011 and 2016 Canadian Census. An assessment of employment characterises within the study area was completed based on data provided from the CoTs 2018 Employment Survey and accessible information from the CoMs 2019 Employment Profile.

There is a high concentration of residential neighbourhoods between the Martin Grove Station and Mount Dennis Station areas. East of Islington Station, neighbourhoods generally have a higher use of public transit compared to neighbourhoods along the west limit of the project area (CoT Neighbourhood Profiles). A detailed overview of existing population characteristics within the study limits is provided in Appendix E.

Based on the CoTs 2018 Employment Data provided, the study area features clusters of higher employment around Renforth, Kipling, Royal York and Mount Dennis station areas. There are higher concentrations of employment establishments surrounding the Renforth, Kipling, Royal York and Mount Dennis station areas. Renforth Station features a high amount of office employment, which is consistent with the Employment Area land use designation within the station area. Royal York and Mount Dennis Stations feature a more varied mix of employment uses, with higher concentrations of retail uses compared to other station locations.

Based on information available from the CoMs 2019 Employment Profile Mapping, the area surrounding the proposed Renforth Station contains a range of employment uses including Professional, Scientific and Technical Services Areas, Transportation and Warehousing Areas, Manufacturing Areas and Wholesale Trade Areas. Several businesses in close proximity to the proposed station area include those containing 300-499 employees (CoM 2019 Employment Profile).

3.3 Cultural Environment

3.3.1 *Archaeology*

Stage 1 and 2 Archaeological Assessment Reports were prepared in 2009 as part of the 2010 EPR. Table 3-9 outlines the recommendations provided in each of these reports. The Stage 1 identified areas of archaeological potential that would be impacted by the alignment.

The Stage 2 completed a test pit survey for the impacted areas, and no archaeological materials were found. Based on the results of the Stage 2 assessment, it was determined that no additional archaeological assessment was required for the areas assessed and the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) (formerly Ministry of Culture) concurred with the findings of the reports.

A subsequent Stage 1-2 Archaeological Assessment was carried out in 2012 by New Directions Archaeology, in support of the 2013 EPR Addendum to address areas within the revised study area not previously assessed. Table 3-9 outlines the recommendations provided in this report. The majority of the study corridor was determined to lie within the existing ROW and is disturbed due to roadway construction and surrounding residential and commercial land uses and utilities. The 2012 assessment determined that no further archaeological assessment was required, and the Ministry of Tourism, Culture and Sport (now the MHSTCI) concurred with the findings of the report.

A Stage 1-2 Archaeological Assessment was completed by 4Transit in 2019 under PIF number P1078-0066-2019 in support of the current 2020 EPR Addendum for the entirety of the new alignment as well as a 150 m buffer around the alignment. A copy of that report can be found in Appendix F.

As part of the Stage 1-2 assessment, a property inspection was completed for the corridor and 150 m buffer study area by a licensed archaeologist to determine current conditions of the study area and identify areas of archaeological potential. Additionally, a Stage 2 Archaeological Assessment was completed by test pit survey at a 5 m interval for two small areas within the study area that were to be affected by borehole excavation. The 2020 Stage 1-2 archaeological assessment results are presented in Figure 3-6.

Table 3-9: Summary of 2010 EPR Stage 1 and Stage 2 Archaeological Assessment Results

Archaeological Assessment Report Title	Recommendations
<p>Stage 1 Archaeological Assessment of: Proposed Eglinton Crosstown Light Rail Transit Corridor & Pearson Airport Surface Connection Study Area, City of Toronto, Ontario.</p> <p>CIF#: P029-661-2009</p>	<ol style="list-style-type: none"> 1. Due to the assessed undisturbed condition of specified sections within the ECLRT study corridor; along with the established high potential for the recovery of Aboriginal and/or Euro-Canadian remains within its limits, a Stage 2 archaeological field assessment of the identified undisturbed areas within this route should be undertaken prior to any construction activities, to minimize impacts to heritage resources. Should significant archaeological resources be encountered, additional background research or fieldwork may be required by the Ministry of Culture; 2. Due to the assessed undisturbed condition of specified sections within Lester B. Pearson International Airport Surface Connection study area; along with the established high potential for the recovery of Aboriginal and/or Euro-Canadian remains within its limits, a Stage 2 archaeological field assessment of the proposed connection alignment should be undertaken prior to any construction activities, to minimize impacts to heritage resources. Should significant archaeological resources be encountered, additional background research or fieldwork may be required by the Ministry of Culture; 3. Should previously unknown or unassessed deeply buried archaeological resources be uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act (OHA). The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the OHA. The office of the Heritage Operations Unit, Ministry of Culture (416-314-7143) should be contacted immediately; 4. This report is filed with the Minister of Culture in compliance with Section 65 (1) of the OHA. The ministry reviews reports to ensure that the licensee has met the terms and conditions of the licence and archaeological resources have been identified and documented according to the standards and guidelines set by the ministry, ensuring the conservation, protection and preservation of the heritage of Ontario. It is recommended that development not proceed before receiving confirmation that the Ministry of Culture has entered the report into the provincial register of reports; and 5. Any person discovering human remains must immediately notify the office of the Heritage Operations Unit, Ministry of Culture (416-314-7143), the police or coroner, and the Registrar of Cemeteries, Cemeteries Regulation Unit, Ministry of Government Services (416-326-8404). Under Section 6 of Regulation 881 of the OHA, Archeoworks Inc. will, "keep in safekeeping all objects of archaeological significance that are found and all field records that are made."
<p>Stage 2 Archaeological Assessment of: Proposed Eglinton Crosstown Light Rail Transit</p>	<ol style="list-style-type: none"> 1. Due to the high archaeological potential classification of the unassessed sections running from north of STA 53+180 to 53+340, and STA 53+520 to 53+600, Stage 2 test-pit survey of these

Archaeological Assessment Report Title	Recommendations
<p>Corridor & Pearson Airport Surface Connection Study Area, City of Toronto Ontario.</p> <p>PIF#: P029-660-2009</p>	<p>areas will be required once access within these lands are granted;</p> <ol style="list-style-type: none"> 2. The remainder of the subject lands can be considered clear of further archaeological concern; 3. This report is filed with the Ministry of Culture in compliance with Section 65 (1) of the OHA. The ministry reviews reports to ensure that the licensee has met the terms and conditions of the licence and archaeological resources have been identified and documented according to the standards and guidelines set by the ministry, ensuring the conservation, protection and preservation of the heritage of Ontario. It is recommended that development not proceed before receiving confirmation that the Ministry of Culture has entered the report into the provincial register of reports; 4. Should previously unknown or unassessed deeply buried archaeological resources be uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the OHA. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the OHA. The office of the Heritage Operations Unit, Ministry of Culture (416-314-7146) should be contacted immediately; and 5. Any person discovering human remains must immediately notify the office of the Heritage Operations Unit, Ministry of Culture (416-314-7146), the police or coroner, and the Registrar of Cemeteries, Cemeteries Regulation Unit, Ministry of Government Services (416-326-8404). Under Section 6 of Regulation 881 of the OHA, Archeoworks Inc. will, "keep in safekeeping all objects of archaeological significance that are found and all field records that are made."
<p>Stage 1-2 Archaeological Assessment of the Eglinton Crosstown Light Rail Transit Corridor, Eglinton Avenue from Jane Street to Bricknell Street, Concession 5, Lot 11, Concession 6, Lot 41, York Township, City of Toronto, York County.</p> <p>PIF #P018-403-2012</p>	<ol style="list-style-type: none"> 1. No cultural material was recovered during the assessment for the Eglinton Crosstown Light Rail Transit Corridor, from Jane Street to Bricknell Street, Concession 5, Lot 11, Concession 6, Lot 41, York Township, City of Toronto, York County. Given this, it is recommended to the Ministry of Tourism, Culture, and Sport that no further archaeological assessment is required for this corridor; 2. Should the subject corridor require more property outside of the current plan, an archaeological assessment will be required; 3. This report is filed with the Ministry of Tourism, Culture and Sport in compliance with sec. 65 (1) of the OHA. The ministry reviews reports to ensure that the licensee has met the terms and conditions of the licence and archaeological resources have been identified and documented according to the standards and guidelines set by the ministry, ensuring the conservation, protection and preservation of the heritage of Ontario. Development should not proceed before receiving confirmation that the Ministry of Tourism, Culture and Sport has entered the report into the provincial register of reports; 4. Should previously unknown or unassessed deeply buried archaeological resources be uncovered

Archaeological Assessment Report Title	Recommendations
	<p>during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the OHA. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the OHA; and</p> <p>5. Any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services. Contacts: Culture Unit, Programs and Services, Ministry of Tourism, Culture and Sport: (416) 212-4019 Registrar of Cemeteries, Cemeteries Regulation Unit: Michael D'Mello (416) 326-8404 or (416) 326-8393.</p>

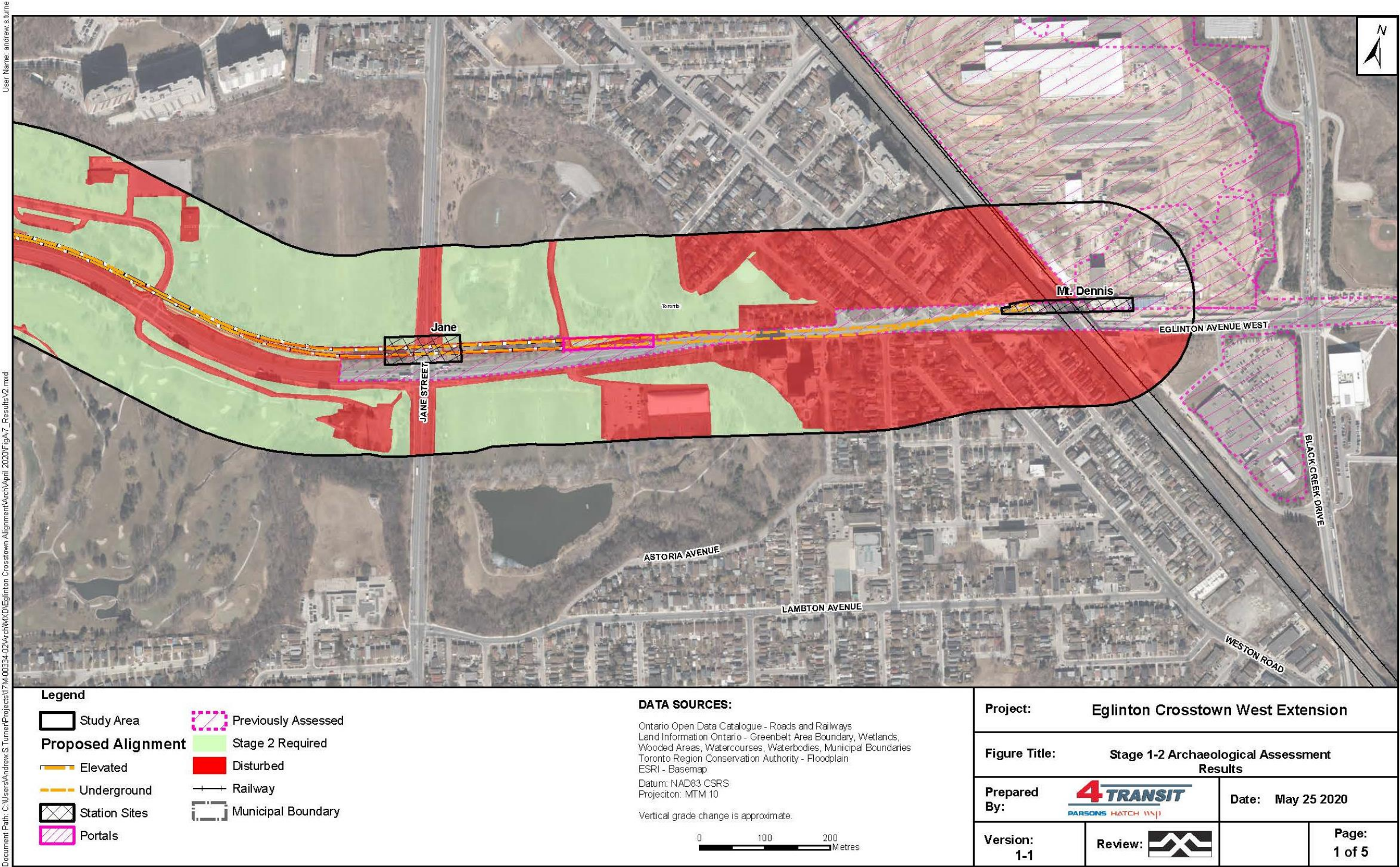


Figure 3-6: Archaeological Assessment Results

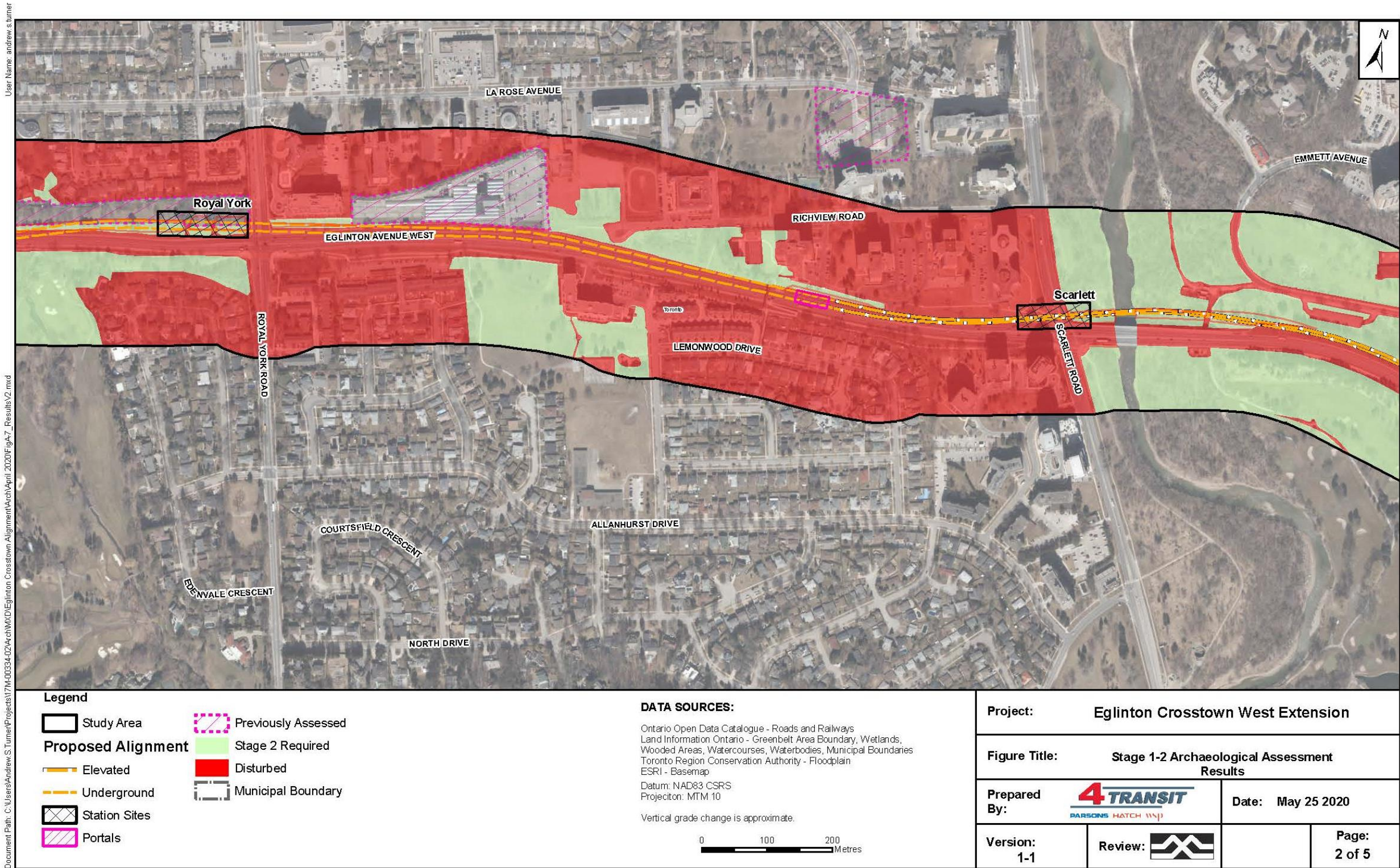


Figure 3-6: Archaeological Assessment Results

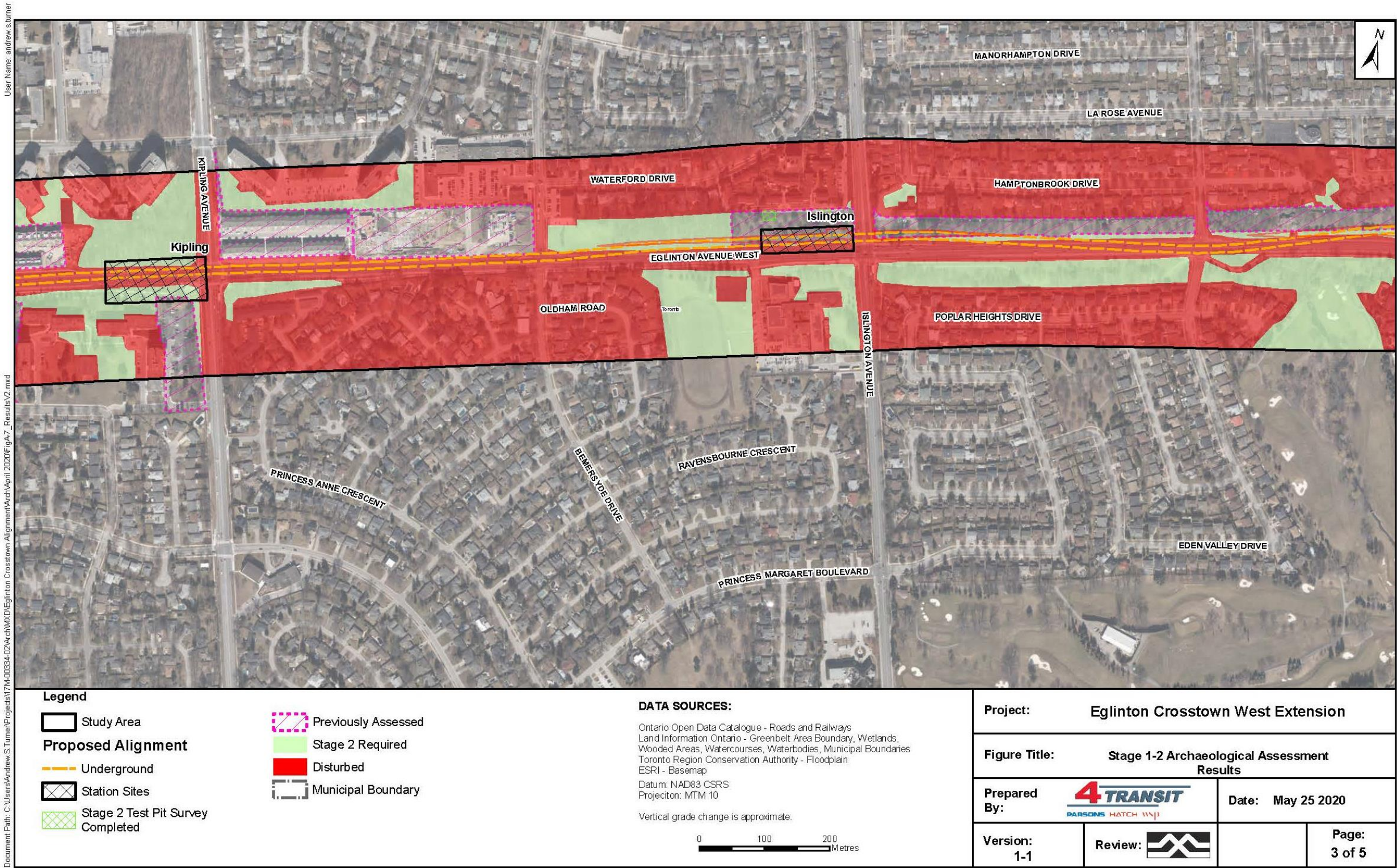


Figure 3-6: Archaeological Assessment Results

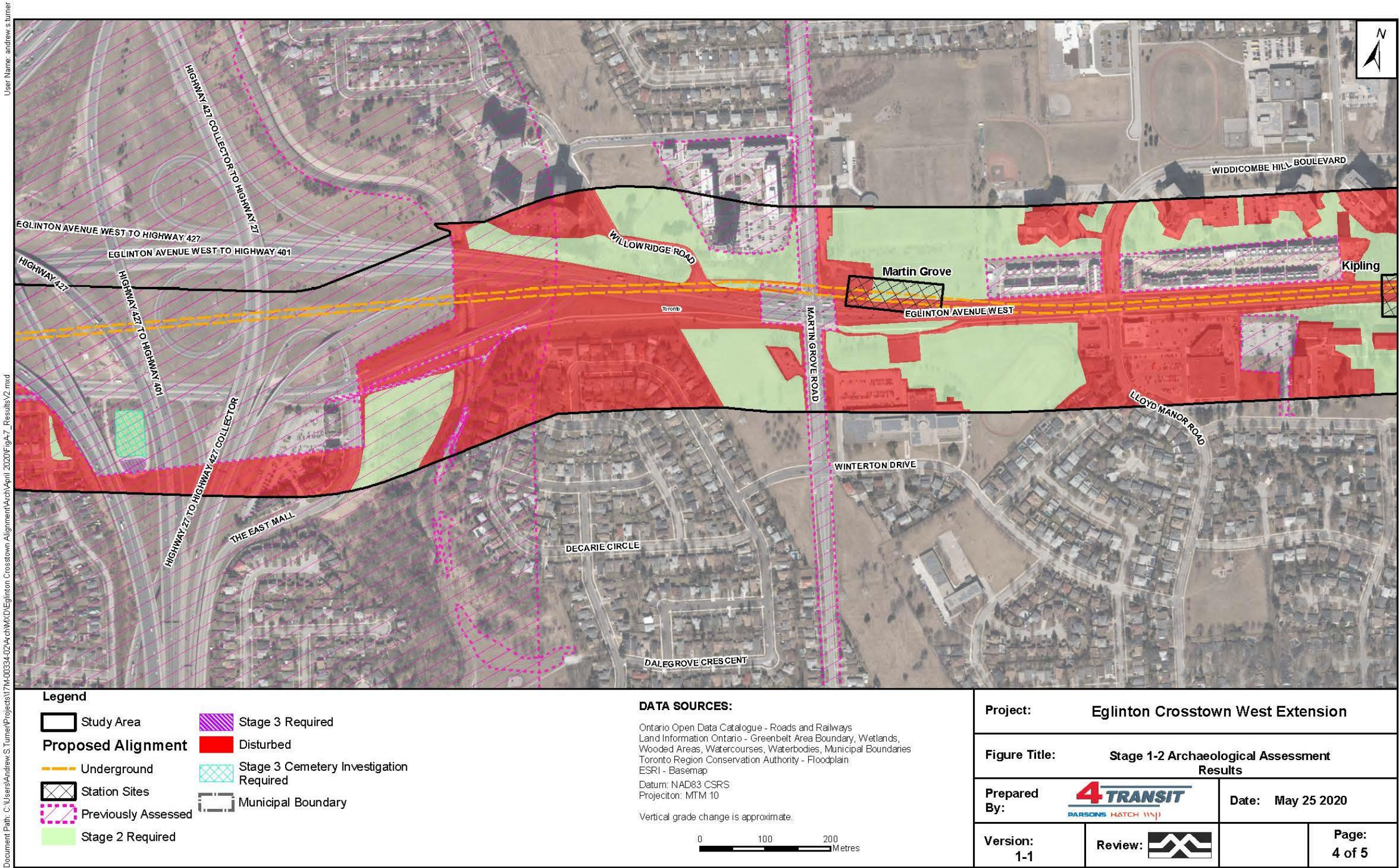


Figure 3-6: Archaeological Assessment Results

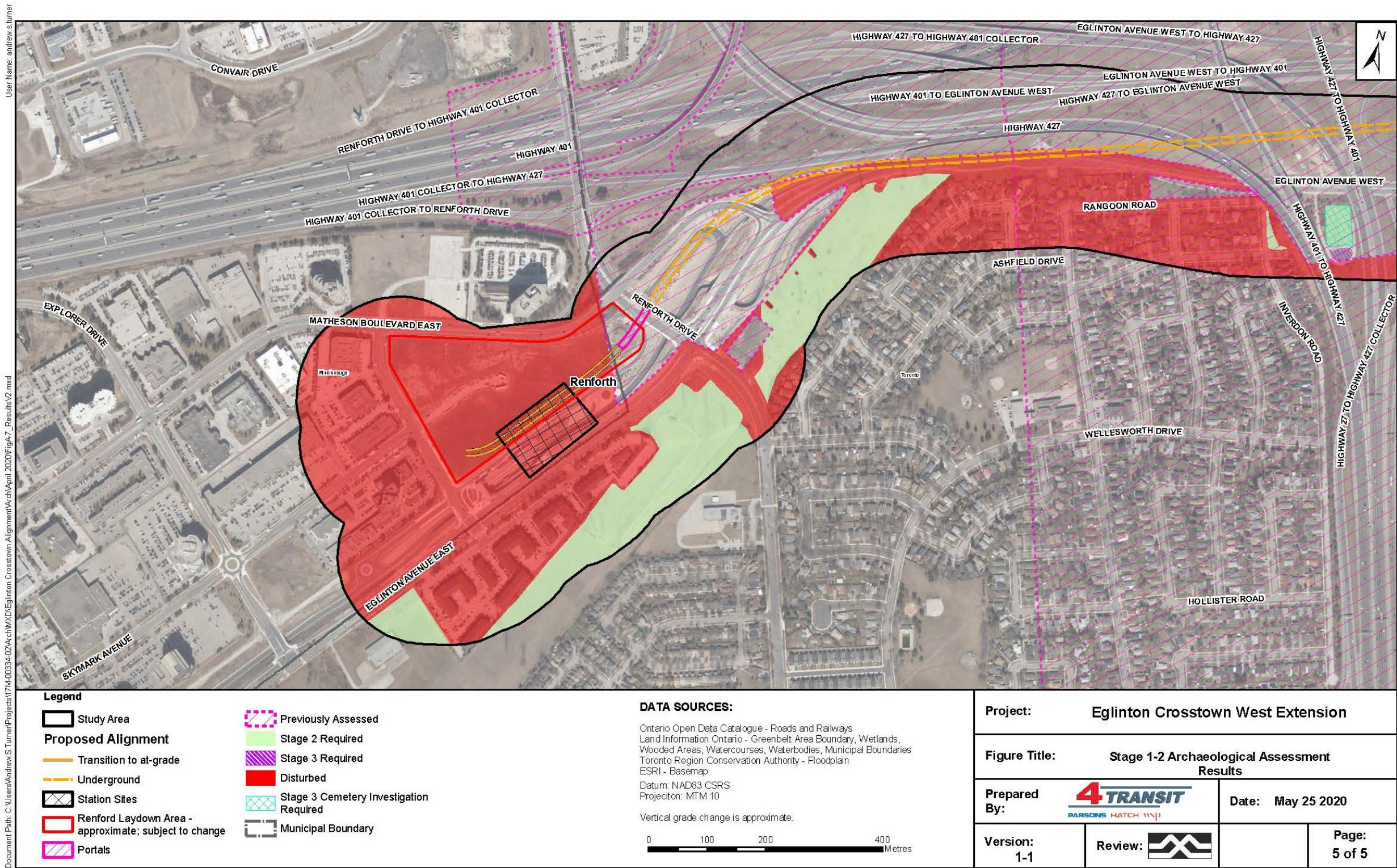


Figure 3-6: Archaeological Assessment Results

3.3.2 Built Heritage and Cultural Heritage Landscapes

3.3.2.1 Previous Studies

A Cultural Heritage Resource Assessment Report: *Built Heritage Resources and Cultural Heritage Landscapes - Eglinton Crosstown Light Rail Transit (ECLRT) Martin Grove Road to Kennedy TTC Station Lester B. Pearson International Airport Extension* was completed in 2010 by Unterman McPhail Associates (UMcA) as part of the 2010 ECLRT TPAP. The study area was located within the CoT and the CoM. The cultural heritage assessment completed in 2010 identified seven Cultural Heritage Resources (CHRs) within the current study area, which consists of the most westerly end of the LRT proposed in 2010. The 2010 EPR recommended further heritage work including Cultural Heritage Evaluation Reports (CHERs), Heritage Impact Assessments (HIAs) and Streetscape Documentation for CHRs impacted by the EPR designs. The following limitations were in the 2010 EPR for the proposed alignment:

- As the EPR was completed in 2010, additional properties may now meet the 40 year threshold as required by the 2013 Metrolinx Interim Cultural Heritage Management Process;
- Additional Listed or Designated properties may have been added to the Municipal Heritage Register for the CoT; and
- The recommendations of the 2010 EPR may not accurately reflect the impacts of the proposed alignment.

While undertaking subsequent preliminary design, significant changes to the proposed alignment were recommended and a 2013 EPR Addendum was prepared. In 2013, McCormick Rankin, a member of MMM Group, on behalf of Metrolinx, retained UMcA to complete a Cultural Heritage Assessment Report (CHAR) as part of the 2013 EPR Addendum for the ECLRT West Section from Jane Street to Keele Street in the CoT, Ontario. The 2013 EPR Addendum documented the existing and potential CHRs, provided a preliminary impact assessment to identify negative impacts to CHRs, and provided preliminary mitigation recommendations to the CHRs.

3.3.2.2 2020 Cultural Heritage Resources

Since the completion of the 2010 EPR and 2013 EPR Addendum, a number of changes have been proposed for this Project. The 2020 Addendum confirms existing and potential Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs) and provides a preliminary impact assessment to identify negative impacts to BHRs and CHLs and preliminary mitigation recommendations.

Property visits were conducted on November 5, 2019 and January 10, 2020, to confirm properties with known or potential Cultural Heritage Value or Interest (CHVI) within the study area. Five BHRs and six CHLs were identified, as outlined in Table 3-10. The following provides a summary of the existing CHRs within the study area, as further detailed in Appendix G:

- One is Part IV Designated (BHR - 2);
- Two are listed on the City of Toronto's Municipal Heritage Register (BHR - 1 , CHL - 5);

- One is designated as a Canadian Heritage River (CHL - 4); and
- Seven were identified in previously completed assessments (CHR-3, CHR-4, CHR-5, CHR-8, CHR-9, CHR-10, CHR-11).

The locations of the built and cultural heritage resources are shown in Figure 4-1 (A-E).

Table 3-10: Cultural Heritage Resources within ECWE Study Area

BHR/CHL #	Address/ Location*	Heritage Status	Description of Known or Potential CHVI
BHR - 1	1151 Weston Road, Bank of Nova Scotia	Listed on the City of Toronto Inventory of Heritage Properties (Added in 2013).	<p>Design/Physical: 1151 Weston Road, Scotiabank building in Modern design with a distinctive and corporate “Bluenose” carving on front elevation.</p> <p>Historical/Associative: A post-World War II bank branch designed by the notable Toronto architect Gordon S. Adamson that has served as a branch for the Bank of Nova Scotia (now Scotiabank) since 1949. Selected in 1950 by the Journal of the Royal Architectural Institute of Canada as one of fourteen branch banks in Canada representing social and architectural changes after World War II.</p> <p>Contextual: Associated with the historic settlement centre of Mount Dennis. In 1965 when Metro Council authorized the acquisition of land, the purchase and expropriation of properties and the funding of the relocation of the bank due to the widening of Eglinton Avenue West. Originally in close proximity to the corner of the street, following its relocation it is now set back from the intersection in a long lawn with pathways which is designated as public open space in the Toronto's Official Plan.</p>
CHL - 1	Mount Dennis Road - Eglinton Avenue West at Weston Road	Identified in 2010 UMCA Report.	<p>Design/Physical: Mount Dennis Road contains numerous residences dating from the 19th and 20th century on both sides of the Eglinton Avenue West, Weston Road and Locust and Holly Street in the study area. At Weston Road, Eglinton Avenue West is comprised of some commercial development including a c1950s Bank of Nova Scotia building on the northeast corner of the intersection.</p> <p>Historical/Associative: Mount Dennis, former hamlet in York Township, developed in the late 19th century and early 20th century.</p> <p>Contextual: Associated with 19th and 20th century suburban growth west of Toronto.</p>
CHL - 2	3700 Eglinton Avenue West, Fergy Brown Park	Identified in 2013 UMCA Report.	<p>Design/Physical: The subject park property consists of low lying flood plains along the Humber River. It contains a cricket field with two regulation premier fields and a clubhouse.</p> <p>Historical/Associative: Known as Fergy Brown Park, this park was named for Fergy Brown, a former City of York Mayor. Prior to Hurricane Hazel in 1954, this area supported several markets on the flood plains along the Humber River. Following the hurricane, the property was acquired by the TRCA and then the CoT.</p> <p>Contextual: Associated with 19th and 20th century suburban growth west of Toronto.</p>

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BHR/CHL #	Address/ Location*	Heritage Status	Description of Known or Potential CHVI
CHL - 3	3601 Eglinton Avenue West, Eglinton Flats Park	Identified in 2013 UMCA Report.	<p>Design/Physical: The subject park property consists of low lying flood plains along the Humber River. It includes a dozen tennis courts and several soccer fields as well as both field hockey and cricket pitches.</p> <p>Historical/Associative: Known as Eglinton Flats Park. Prior to Hurricane Hazel in 1954, this area supported several markets on the flood plains along the Humber River. Following the hurricane, the property was acquired by the TRCA and then the CoT.</p> <p>Contextual: Associated with 19th and 20th century suburban growth west of Toronto.</p>
CHL - 4	Humber River and Valley at Eglinton Avenue West	Designated as a Canadian Heritage River in 1999.	<p>Design/Physical: Eglinton Flats, open flats in river valley and Humber River. It flows through a rich mosaic of Carolinian forests, meadows, farms and abandoned mills and finally through the largest urban area in Canada, Metropolitan Toronto.</p> <p>Historical/Associative: Extensive archeological evidence indicates the Humber River has experienced human settlement for almost 10,000 years. First Nations peoples developed the Carrying Place Trail, which connects Lake Ontario to the upper Great Lakes. This trade route made the area attractive to European traders and explorers upon their arrival in the 17th century and led to its designation as a national historic site. Toronto's first European settlers were French traders and missionaries, who remained in the area until 1793 when British settlement began. However, it wasn't until after the War of 1812 that major settlement of the watershed began.</p> <p>Contextual: A system of greenways along the river's shores maintains the spirit of the historic Toronto Carrying Place Trail and provides an urban oasis in this city of 5 million people.</p>
BHR - 2	4200 Eglinton Avenue West, Mary Reid House	Part IV Designation, By-Law No. 221-2016, Municipal Easement Agreement.	<p>Design/Physical: 2.5-storey Period Revival style house with a mix of elements drawn from English medieval architecture. It is distinguished by its asymmetrical plan and application of corbelled brickwork and clinker bricks.</p> <p>Historical/Associative: Mary Reid House, built 1939. Born in Yorkshire, England in 1874, Mary "May" Jane Todd immigrated in 1880 to Canada with her parents, James and Mary Todd in 1880. Her husband, Randolph "Ralph" Reid was born in Bedford, England and came to Canada in 1881 with his parents, Thomas and Anne Reid. The two families bought adjacent land for market gardening in the Humber Bay area. The Todd's owned land on the southwest and southeast corners of Park Lawn and Berry Roads.</p>

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BHR/CHL #	Address/ Location*	Heritage Status	Description of Known or Potential CHVI
			<p>In 1925, Mary Reid bought the 4200 Eglinton Avenue West property for \$3,000 as an investment to give in future to her son. In 1937, she transferred half the land to her son, Randolph Calvin. In 1939, an unfinished house valued at \$1,300 stood there. In 1941, she transferred the rest of the lot to Calvin, and the entire east half to her other son, Leonard Roger. Calvin bought out Leonard's half in 1950. Calvin cultivated all the land north and east of his house and had several large greenhouses. Mary Jane Todd Reid died in 1957. Both she and her husband, and many other family members, are buried in Park Lawn Cemetery.</p> <p>Contextual: A country house that is historically and visually linked to its surroundings and reflects the historical character of the area adjoining the northwest corner of Eglinton and Royal York Road.</p>
BHR - 3	4400 Eglinton Avenue West	Identified in 2010 UMCA Report.	<p>Design/Physical: 1 ½ storey residence with stone exterior, gable dormer, garage.</p> <p>Historical/Associative: Built in the mid-20th century.</p> <p>Contextual: One of a few residential homes oriented towards Eglinton Avenue West.</p>
BHR - 4	4480 Eglinton Avenue West, Church of Christian Science	Identified in 2010 UMCA Report.	<p>Design/Physical: Church of Christian Science; 2 storey, multi-gable roof, building designed in Tudor Revival style of the Home Smith Kingsway development to south using Humberstone exterior cladding.</p> <p>Historical/Associative: Built mid-20th century. The first Christian Science church in Canada.</p> <p>Contextual: Associated with the international growth of the Christian Science Church.</p>
BHR - 5	1738 Islington Ave at Eglinton Avenue West, Richview Collegiate Institute	Identified in 2010 UMCA Report.	<p>Design/Physical: 2 storey Modernist style is typical of school design of the time.</p> <p>Historical/Associative: Richview Collegiate Institute is a Toronto District School Board secondary school in Etobicoke built in 1958.</p> <p>Contextual: Associated with post-war Central Etobicoke neighborhoods of Princess Gardens, Royal York Gardens, and Richmond Gardens.</p>
BHR - 6	50 Winterton Drive, Martin Grove Collegiate Institute	Identified in 2010 UMCA Report.	<p>Design/Physical: Martin Grove Collegiate Institute is located at the intersection of Eglinton Avenue West and Martin Grove Road. 1 storey Modernist style is typical of school design of the time.</p>

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BHR/CHL #	Address/ Location*	Heritage Status	Description of Known or Potential CHVI
			<p>Historical/Associative: The school opened on May 27, 1966.</p> <p>Contextual: Associated with post-war Central Etobicoke neighborhoods of Princess Gardens, Willowridge, and Richmond Gardens.</p>
CHL - 5	South of Eglinton Avenue West, Intersection of Highway 427 and 401, Willow Grove Burying Ground and the Richview Cemetery	Listed on the CoT Inventory of Heritage Properties.	<p>Design/Physical: Located on the south side of Eglinton Avenue West between the lanes of Highway 427 and ramps of Highway 401 and Highway 27, accessible from an unmarked road on the south side of Eglinton Avenue West.</p> <p>Historical/Associative: The cemetery was opened in 1853, extended in 1886 and amalgamated with two other pioneer cemeteries in the 1970s. The last burial was in 2005. It is the gravesite of many of Etobicoke's settlement families.</p> <p>Contextual: Associated with the Willow Grove Bury Ground and the Richview historic settlement center. There are two commemorative plaques within the fenced burial ground for the Willow Grove Burying Ground and the Richview Cemetery.</p>

3.4 Transportation

3.4.1 Road Network

Major arterials, minor arterials and collector roads within the Project study area are shown in Figure 3-7. As per CoT Road Classification System, the primary function of a major arterial is traffic movement having capacity of more than 20,000 vehicles per day. The classification system defines minor arterials as typically having a capacity of 8,000 to 20,000 vehicles per day with limited property access. A collector road connects local roads to arterials and has capacity of 2,500 to 8,000 vehicles per day, per the CoT Road Classification System. Property access is also possible from collector roads.

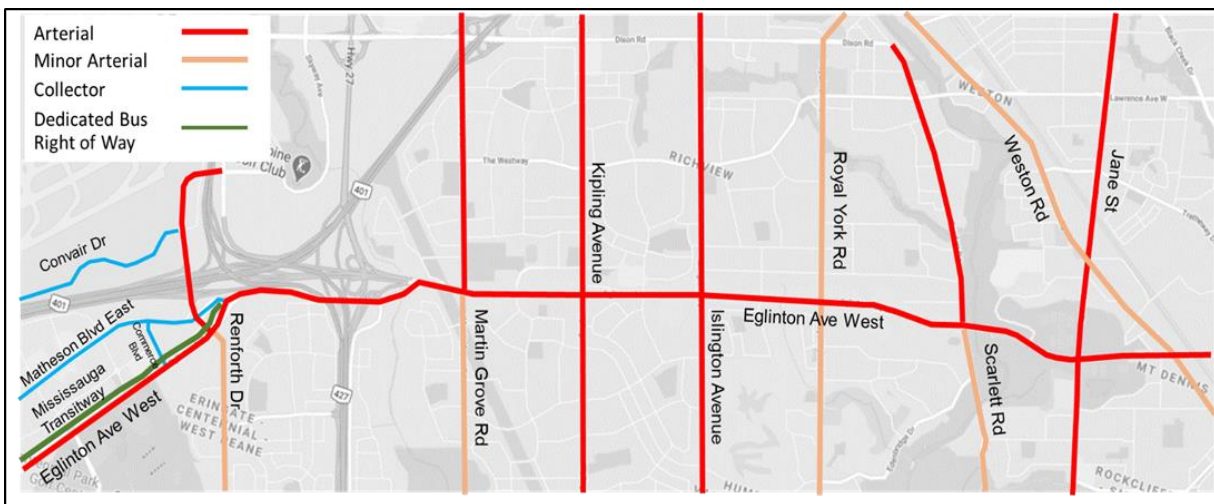


Figure 3-7: Road Network and Classification

Eglinton Avenue West is a major east-west arterial extending between 9th Line in the CoM to the west and Yonge Street in the CoT to the east. It provides connections to Highway 401, Highway 403, Highway 427 and Highway 27. Eglinton Avenue provides bus-only connections to/from Renforth Station. Within the study area, Eglinton Avenue West generally operates with two lanes in both directions.

Kipling Avenue, Islington Avenue, and Jane Street are major arterials intersecting with Eglinton Avenue West. Royal York Road and Weston Road are minor arterials intersecting with Eglinton Avenue West. Renforth Drive, Martin Grove Road, and Scarlett Road are classified as major arterials north of Eglinton Avenue West, and as minor arterials south of Eglinton Avenue West.

All intersections with major and minor arterials have exclusive left turn lanes and some exclusive or channelized right-turn lanes except at the Emmett Avenue and Eglinton Avenue West intersection which has shared through-turn lanes to side streets.

Matheson Boulevard East is a major east-west collector. It originates from Eglinton Avenue West just east of Renforth Drive and then runs parallel to Eglinton Avenue West within the study area.

Renforth Drive is a major arterial north of Eglinton Avenue West and a minor arterial south of Eglinton Avenue West. It is bounded by Carlingview Drive to the north and Bloor Street West to the south. Within the study area it has a four lane cross section with auxiliary left turn lanes. At Eglinton Avenue West, it also has a southbound right turn lane. Renforth Drive provides a connection to Highway 401, however there is no westbound off-ramp at Renforth Drive. Renforth Drive also provides bus-only connections with the Renforth Terminal.

Commerce Boulevard is a north-south collector road connecting Eglinton Avenue West and Matheson Boulevard East. It also provides direct connections to/from Renforth Station. It has two lanes cross section with auxiliary left turn lanes at Eglinton Avenue West and Matheson Boulevard East.

3.4.2 *Traffic*

The 2010 EPR had proposed a fully at-grade LRT running in the median of Eglinton Avenue West from Mount Dennis Station to Commerce Boulevard. The Traffic Study conducted as part of the 2010 EPR identified the following significant impacts to traffic due to surface and within the median alignment.

- Prohibited left-turns at existing unsignalized side-streets;
- East-west left turns at signalized intersections required protected phases to prevent collision with LRT, thus reducing the east-west left-turn capacity; and
- Reduction in east-west through capacity due to removal of one travel lane in each direction.

To mitigate these impacts, the 2010 EPR proposed restricting east-west left turns at all major intersections along Eglinton Avenue West including Kipling Avenue, Islington Avenue, Royal York Road, Scarlett Road and Jane Street. Mid-block U-turns were proposed downstream of the intersections to facilitate left turning traffic. At Martin Grove Road, intersection jug-handles were proposed for the east-west left turning and right turning traffic.

The current 2020 Addendum to the 2010 EPR proposes a mostly underground alignment with a small portion being elevated over Eglinton Avenue West. Therefore, the traffic impacts and mitigation measures proposed in the 2010 EPR Traffic Study are no longer applicable to the Project. The following provides a summary of assumptions, analysis methodology and the existing traffic conditions from the Traffic Study conducted for the Project. The Traffic Study is attached as Appendix H.

Two study horizons have been used as part of this study's analysis including:

- **Existing Conditions:** Existing 2019 traffic conditions using existing roadway lane configurations, Signal Timing Plans (STP) and Traffic Movement Counts (TMC); and
- **Future Conditions:** Future implementation date when the Project is expected to be operational in 2031. Future TMCs were estimated by adding the traffic demand from the planned developments within the study area as well as 0.5% conservative annual corridor growth along Eglinton Avenue West.

The evaluation focuses on weekday AM and PM peak hours. The data pertaining to TMC and STP were obtained from the CoT and the following 16 signalized intersections were assessed:

- Eglinton Avenue West and Weston Road;
- Eglinton Avenue West and Jane Street;
- Eglinton Avenue West and Emmett Avenue;
- Eglinton Avenue West and Scarlett Road;
- Eglinton Avenue West and Royal York Road;
- Eglinton Avenue West and Russell Road/Eden Valley Drive;
- Eglinton Avenue West and Islington Avenue;
- Eglinton Avenue West and Wincott Drive/Bemersyde Drive;
- Eglinton Avenue West and Kipling Avenue;
- Eglinton Avenue West and Widdicombe Hill Boulevard/Lloyd Manor Road;
- Eglinton Avenue West and Martin Grove Road;
- Eglinton Avenue West and Highway 401/427 Interchange;
- Eglinton Avenue West and The East Mall;
- Eglinton Avenue West and Matheson Boulevard East;
- Eglinton Avenue West and Renforth Drive; and
- Eglinton Avenue West and Commerce Boulevard.

Intersection capacity analysis was conducted using intersection capacity analysis software package Synchro version 10. The analysis was based on the CoT Guidelines for Using Synchro 9 and Highway Capacity Manual (HCM).

An intersection's overall operating conditions are established through two Measures of Effectiveness (MOE): the Volume to Capacity ratio (V/C) and the Level of Service (LOS).

The V/C ratio is a measure of the vehicular demand relative to the theoretical carrying capacity of the roadway, based on known relationships with road geometry, signal timings, and driver behaviour. A V/C ratio of 1.0 indicates the intersection or movement is operating at its theoretical capacity.

The LOS is an indicator of intersection performance based on the average delay per vehicle. A lower LOS such as an "A", "B" or "C" indicates a shorter delay and better performance. LOS "E" and "F" represent poorer performance with unacceptable range of delays.

The HCM describes the following LOS ratings, as presented in Table 3-11, related to average vehicular delay occurring at signalized intersection.

Table 3-11: HCM LOS Criteria, Signalized Intersection

Average Delay (seconds/vehicle)	Level of Service (LOS)
≤ 10	A
> 10 - 20	B
> 20 - 35	C
> 35 - 55	D
> 55 - 80	E
> 80	F

The following thresholds were applied to classify critical movements and identify mitigation measures:

- Movements with V/C ratio of 0.9 or above; and
- Movements with Level of Service (“LOS”) as “E” or worse.

Table 3-12 summarizes the intersections MOEs and critical movements. Intersections and movements having LOS “F” or V/C as 1 or higher have been highlighted in pink. Queue lengths for respective movement directions have also been shown. Queue length is a measure of estimated number of queued vehicles on a given intersection approach. The 50th percentile queue is the maximum (typical) queue during a typical traffic signal cycle. The 95th percentile queue is the queue length during a typical traffic cycle with 95th percentile approach traffic volume. Detailed discussion on existing (2019) traffic conditions can be found in Appendix H.

All major arterial intersections are near capacity during both AM and PM peak hours. Both eastbound and westbound movements are at or overcapacity in most cases during AM peak hour. During PM peak hour eastbound movements are at or overcapacity as well, while westbound movements are near capacity in most cases.

The Eglinton Avenue West and Martin Grove Road intersection adjacent to the Highway 401/ Highway 427 interchange is over capacity during both AM and PM peak hours and acting as a bottleneck in both directions. Review of existing traffic operations suggest a nearing or at capacity for Eglinton Avenue West.

Table 3-12: Existing (2019) Signalized Intersection Capacity Analysis

Intersection	AM Peak Hour									PM Peak Hour								
	Overall			Critical Movements						Overall			Critical Movements					
	V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th								50 th	95 th
1: Eglinton Avenue West & Weston Road	0.68	23	C	NBL	0.89	62	E	38	83	0.70	25	C	-	-	-	-	-	-
2: Eglinton Avenue West & Jane Street	0.91	42	D	NBL	0.92	66	E	38	82	0.93	38	D	EBL	1.03	98	F	27	74
				SBT	0.90	53	D	112	149									
3: Eglinton Avenue West & Emmett Avenue	0.63	11	B	SBT	0.66	59	E	23	47	0.74	9	A	-	-	-	-	-	-
4: Eglinton Avenue West & Scarlett Road	0.87	29	C	EBT	0.98	31	C	164	151	0.87	35	D	EBT	0.93	51	D	124	165
				-	-	-	-	-	-				WBL	0.86	55	E	22	56
5: Eglinton Avenue West & Royal York Road	0.85	58	E	EBT	1.10	95	F	208	261	0.87	56	E	EBT	1.12	104	F	209	274
				WBT	0.92	47	D	116	150				-	-	-	-	-	-
6: Eglinton Avenue West & Russell Road/Eden Valley Drive	0.54	10	A	EBR	0.01	93	F	0	0	0.51	8	A	-	-	-	-	-	-
7: Eglinton Avenue West & Islington Avenue	1.00	73	E	EBL	1.16	155	F	38	89	1.17	57	E	EBL	1.42	261	F	61	118
				EBT	1.20	129	F	234	271				EBT	1.02	55	D	186	236
				WBL	1.00	112	F	22	68				WBL	0.83	60	E	14	52
				WBT	1.02	50	D	169	218				WBT	0.99	46	D	176	223
													NBT	0.90	50	D	127	170
8: Eglinton Avenue West & Wincott Drive/Bemersyde Drive	0.60	15	B	-	-	-	-	-	-	0.62	15	B	-	-	-	-	-	-
9: Eglinton Avenue West & Kipling Avenue	0.99	55	E	EBL	1.03	77	E	41	35	1.21	53	D	EBL	1.40	272	F	60	72
				EBT	1.03	52	D	272	240				EBT	0.98	25	C	237	290
				WBL	0.87	75	E	30	69				WBL	0.95	100	F	24	66
				WBT	0.96	50	D	214	269				WBT	0.98	50	D	232	290
				NBT	0.95	74	E	113	153				NBT	0.88	62	E	112	149
10: Eglinton Avenue West & Widdicombe Hill Boulevard/Lloyd Manor Road	0.96	46	D	EBT	1.11	66	E	351	234	0.82	44	D	EBT	0.92	53	D	282	209
11: Eglinton Avenue West & Martin	1.16	150	F	EBL	1.41	249	F	145	211	1.28	143	F	EBL	1.89	459	F	237	310

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Intersection	AM Peak Hour									PM Peak Hour								
	Overall			Critical Movements						Overall			Critical Movements					
	V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th								50 th	95 th
Grove Road				EBT	1.38	213	F	439	478				EBT	1.35	195	F	448	487
				WBL	0.21	56	E	2	4				WBL	0.45	59	E	6	10
				WBT	1.30	196	F	251	281				WBT	1.08	94	F	195	226
				SBL	0.71	69	E	29	60				-	-	-	-	-	-
12: Eglinton Avenue West & Highway 401/427 Interchange	0.86	35	D	NBR	0.94	65	E	122	165	0.95	47	D	NBR	1.02	66	E	222	269
13: Eglinton Avenue West & The East Mall	0.96	40	D	SBR	1.12	93	F	144	236	0.76	37	D	EBT	1.03	53	D	110	167
14: Eglinton Avenue West & Matheson Boulevard East	0.84	11	B	-	-	-	-	-	-	0.74	25	C	SBL	1.12	122	F	122	184
15: Eglinton Avenue West & Renforth Drive	0.89	39	D	EBL	0.81	58	E	49	66	0.86	40	D	EBL	1.05	92	F	123	162
				SBL	0.56	55	E	12	30				WBL	0.58	63	E	14	29
				SBR	0.96	55	D	127	220				-	-	-	-	-	-
16: Eglinton Avenue West & Commerce Boulevard	0.59	11	B	-	-	-	-	-	-	0.91	36	D	SBL	1.00	62	E	111	185

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound;
L - Left Turn Movement; T - Through Movement; R - Right Turn Movement

3.4.3 Transit Services

The majority of transit services along Eglinton Avenue West are operated by the TTC, with connections to existing GO Transit and MiWay services at the existing Renforth Station. MiWay services Eglinton Avenue West between Highway 427 and Commerce Boulevard as shown in Figure 3-8.

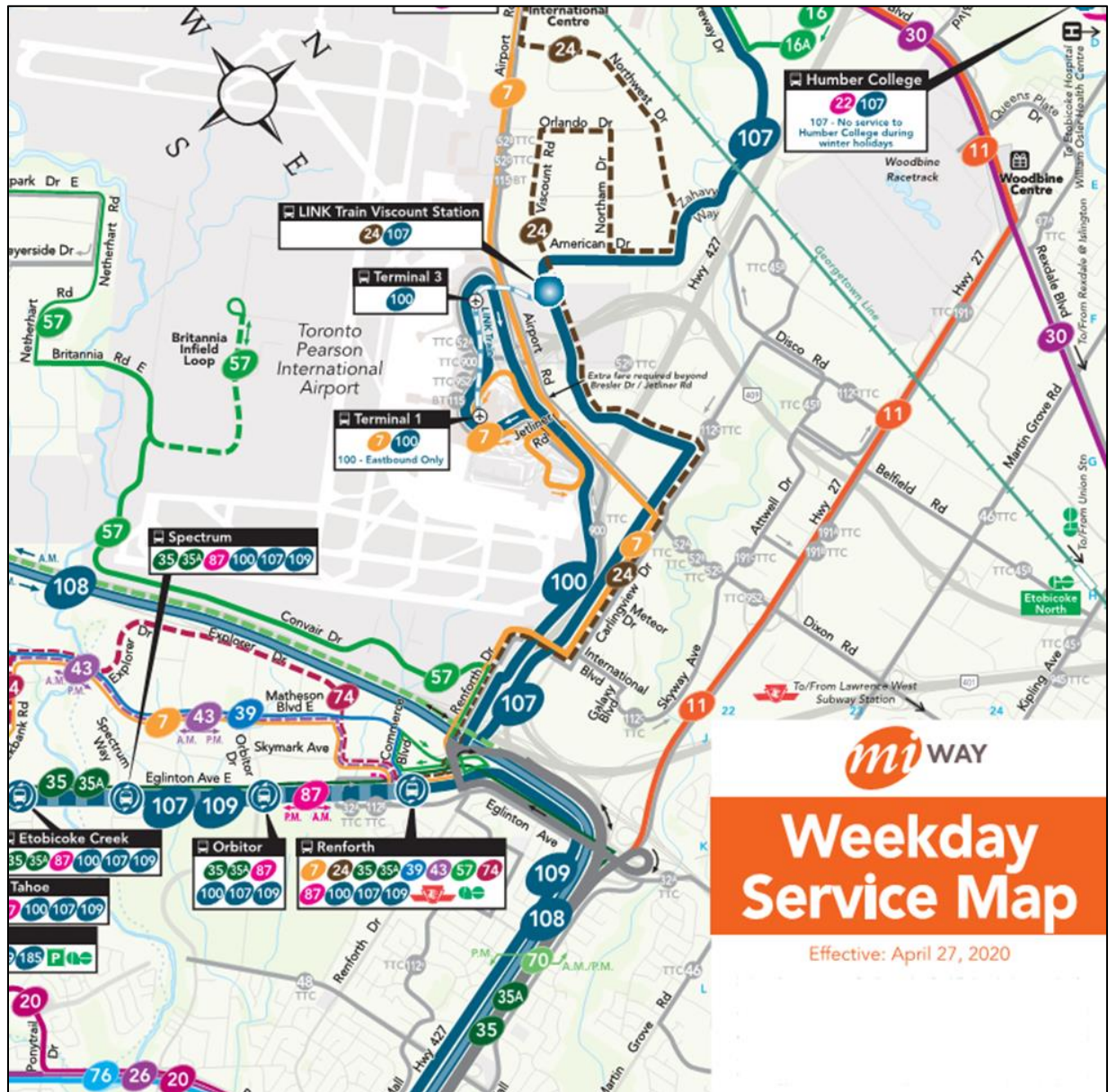
Figure 3-9 shows the existing TTC routes along Eglinton Avenue West between Mount Dennis Station and Renforth Drive. The figure also shows intersecting routes running on major arterial roads in the north-south direction.

TTC Route 32 originates at Eglinton Subway Station at Yonge Street, in the CoT and extends to the existing Renforth Station within the Airport Corporate Centre employment district (Route 32A). Branch 32C extends north-westerly along Trethewey Drive terminating in the Jane Street/Lawrence Avenue West area. Branch 32D originates at Eglinton West Subway Station on the University branch of the Line 1 subway and terminates at Emmett Avenue west of Jane Street.

The proposed Renforth Station will connect with TTC bus routes 32A, 112 and 112C. At the existing Renforth Transitway Station it will connect to GO Transit bus routes 19 and 40 and TTC routes 32A and 112B. It will also connect to MiWay Routes 35 and 35A on Eglinton Avenue West; Routes 7, 74 and 87 on Skymark Avenue; Routes 24, 39, 43, 57 and 74 at Commerce Boulevard; Routes 7, 39 and 43 on Matheson Boulevard; and Routes 100, 107 and 109 along the Transitway.

Mount Dennis Station, currently under construction, will serve as the western limit of the current ECLRT project and will include a new GO Transit/UP Express rail station on the existing Kitchener Corridor.

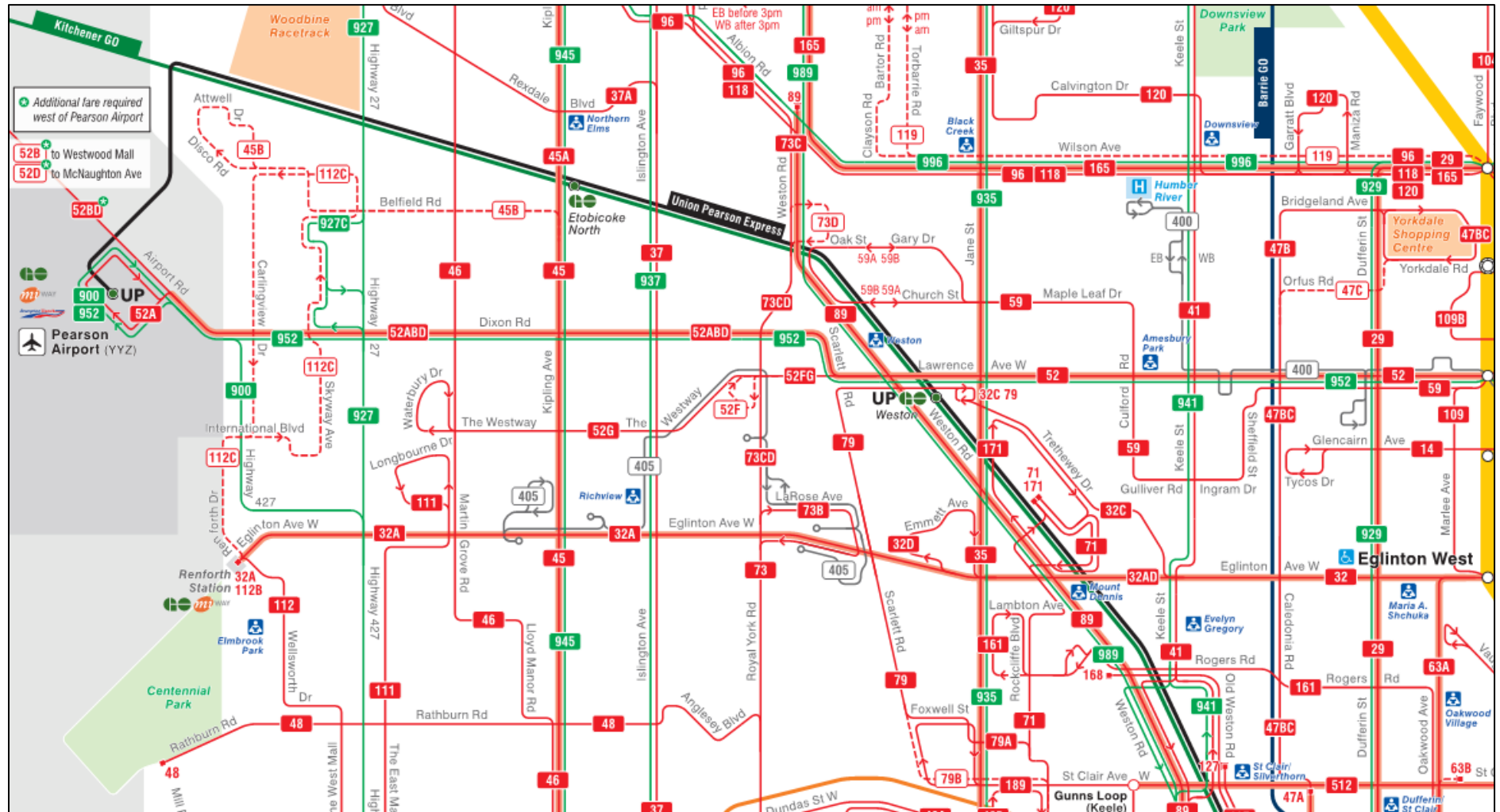
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Source MiWay 2020

Figure 3-8: MiWay Weekday Service Map within Study Area

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Source TTC 2020

Figure 3-9: TTC Bus Routes along Eglinton Avenue West within Study Area

3.4.4 Pedestrian and Cycling Network

An existing Multi-Use-Pathway (MUP) runs primarily along the south side of Eglinton Avenue West and is accompanied by a parallel sidewalk. The MUP connects with the Humber River Recreational Trail at the intersection of Eglinton Avenue West and Scarlett Road. The MUP is located on the north side of Eglinton Avenue West, west of Renforth Drive. As identified under the CoTs Cycling Network Plan Update (2019), opportunities for improvements to the existing multi-use trail may be considered under the Project. The Eglinton Connects Study Streetscape and Cycle Track Preliminary Design is currently underway, see Section 1.6.3.1.3.

Portions of Renforth Drive, Martin Grove Road and Royal York Road include on-road bicycle lanes.

Other existing pedestrian facilities along Eglinton Avenue West include sidewalks and pedestrian crossing facilities with traffic signals at major intersections. There is an existing pedestrian bridge providing a mid-block crossing of Eglinton Avenue West approximately 450 m west of Scarlett Road.

3.4.5 Navigable Watercourses

While the *Navigation Protection Act* has been amended and renamed the *Canadian Navigable Waters Act* following the 2010 EPR, there remain no navigable watercourses in the study area.

3.4.6 Rail Network

The study area includes a rail corridor crossing Eglinton Avenue West, east of Weston Road. The rail corridor is comprised of Metrolinx and CPR tracks and work in the corridor is underway to accommodate the future Mount Dennis GO Transit/UP Express Station.

3.5 Municipal Service and Utilities

A preliminary assessment of existing utilities within the project area are provided below.

3.5.1 Summary of Existing Utilities

Based on the Subsurface Utility Engineering (SUE) investigations completed for the Project corridor, major utilities to consider as part of the design process will include, but are not limited to, an oil pipeline corridor crossing Eglinton Avenue West (approximately 500 m east of Renforth Drive), two hydro corridors crossing Eglinton Avenue West within the vicinity of Highway 401/Highway 427, aerial hydro lines mostly located on the south side of Eglinton Avenue West, a 760 mm Enbridge Vital Gas Main on the South side of Eglinton Avenue West, a 900 mm storm sewer at Renforth Drive, twin storm boxes (1.5 m x 3 mm) and 2000 mm Oil Grit Separator within at MiWay area and a 1200 mm Transmission Watermain on the west side of the proposed Martin Grove Station.

Detailed information on additional utility considerations as part of the design are outlined in Table 4-17.

3.5.2 Underway and Planned Utility Work

Based on a review of the CoTs T.O. IN-View program, it is identified that Imperial Oil's Sarnia Products Pipeline will be replaced with a new pipe from Imperial's Waterdown pump station in

rural Hamilton to the company's terminal storage facility in Toronto's North York area within the 2020 to 2021 horizon year. The pipeline follows the east-west hydro corridor and crosses Eglinton Avenue West approximately 500 m east of Renforth Drive.

Cable Pulling by Rogers is identified along Eglinton Avenue West from Renforth Drive to The East Mall in 2019, Widdicombe Hill Boulevard to Kipling Avenue in 2019, Wincott Drive from Eglinton Avenue West to Strathdee Drive in 2019-2020 and in the laneway east of BiJou Walk in 2019.

General underground and overhead infrastructure work by Toronto Hydro that is planned or underway is identified at the following locations:

- Underground Electrical (2020) - Willowridge Road north of Eglinton Avenue West;
- Overhead and Underground Civil and Electrical (2019) - Martin Grove Road from Winterton Drive to Eglinton Avenue West;
- Underground Civil and Electrical (2019) - Widdicombe Hill Boulevard from Kipling Avenue to Eglinton Avenue West;
- Overhead and Underground Civil and Electrical (2019) - Lloyd Manor Road from Eglinton Avenue West to Winterton Drive;
- Underground Civil and Electrical (2020) - Bemersyde Drive from Oldham Road to Eglinton Avenue West;
- Underground Civil and Electrical (2020) - Eglinton Avenue West from Bemersyde Drive to Islington Avenue;
- Underground Electrical (2019) - Jane Street from Woolner Avenue to Trethewey Drive;
- Overhead and Underground Civil and Electrical (2021) - Jane Street from Weston Road to Woolner Avenue; and
- Underground Civil (2020) - Eglinton Avenue West from Bicknell Avenue to Weston Road.

Structure Work by Bell Canada is proposed at Scarlett Road near Eglinton Avenue West related to manholes, hand wells and non-linear projects (2020) and installation of new buried cables on Eglinton Avenue West near Guestville Avenue (2020). A gas main extension by Enbridge is proposed along Eglinton Avenue West from Kipling Avenue to Lloyd Manor Road in 2020.

Information on all additional planned utility work, including public utilities, will be coordinated with utility companies during further stages of design work and prior to construction.

4. Impact Assessment, Mitigation and Monitoring

Section 15 (1) of the *Transit Project Assessment Process* (O. Reg. 231/08) requires that if, after submitting a statement of completion of the TPAP, the proponent wishes to make a change to the transit project that is inconsistent with the EPR referred to in that statement, the proponent shall prepare an addendum to the EPR that contains the following information:

1. A description of the changes (Section 2) and rationale for these changes (Table 1-1);
2. The proponent's assessment and evaluation of any impacts that the change might have on the environment (Sections 3 and 4);
3. A description of any measures proposed by the proponent for mitigating any negative impacts that the change might have on the environment (Sections 4 and 5.6); and
4. A statement of whether the proponent is of the opinion that the change is a significant change to the transit project, and the reasons for the opinion (see Section 1.3.1).

The purpose of this section is to document the review of anticipated impacts, proposed mitigation measures, and recommended monitoring activities as presented in the 2010 EPR and 2013 EPR Addendum and identify changes to the potential impacts, mitigation, and monitoring that result from the revised configuration of the Project. The information presented herein contains a summary of the impact assessment, mitigation and monitoring specific to the changes proposed for the Project alignment, for public review and comment.

4.1 Range of Potential Impacts

The environmental effects of the Project can be classified under two categories:

1. **Construction Impacts** - The runningway will be largely tunnelled through underground sections. As a result, impacts are predicted to be negligible in these locations. Stations and special track work areas will be constructed by C&C method which entails the digging of a trench, the construction of a tunnel, and then returning the surface to its original state. Station entrances, ventilation shafts, and TPSSs will be constructed following standard at surface construction methods with excavation activities for connection to the underground sections. Partially at-grade and elevated sections of the runningway will be constructed at or above grade. Bridge modifications are not anticipated to involve in-water construction work; and
2. **Operational Impacts** - The operation and maintenance of the Project will result in impacts that will be experienced over the life of the project. These impacts are associated with emissions during facility operations such as air pollution, noise, vibration, electromagnetic interference and stray current. The Project may also have long term effects on traffic and transit operations.

The subsequent sections will discuss for each of the environmental effects identified in the following topics:

1. Potential impacts; and
2. Mitigation measures and monitoring.

4.2 Natural Environment

4.2.1 Hydrogeology/Groundwater

4.2.1.1 Potential Impacts

Construction

In the 2010 EPR and 2013 EPR Addendum, it was anticipated that the ECLRT facilities would not interrupt long-term existing groundwater migration pathways, as permanent groundwater dewatering systems will not be required. This is anticipated to remain the case in the 2020 EPR Addendum. The potential for groundwater impacts will be further reviewed and documented in the Soil and Groundwater Management Strategy developed prior to construction.

As mentioned in the 2013 EPR Addendum, during construction, the groundwater table is likely to be above the base of the proposed depth of alignment within the underground sections of the Project from Mount Dennis westward. Therefore, there is potential to encounter contaminated groundwater. Seepage cut-off and depressurization of aquifers will be required to control groundwater and stabilize the base of excavations. It can be expected that groundwater will need to be controlled by methods such as pumping from sumps, educators or well points or in some cases, by deep well dewatering systems. Care must be taken to prevent the removal of fine soil particles during pumping.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-1.

Operations

At this time on-going dewatering is not anticipated, however, if it is necessary, long term localized groundwater drawdown can be expected and will be monitored and mitigated as appropriate (see Table 4-1).

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-1.

4.2.1.2 Recommended Mitigation Measures and Monitoring

Table 4-1 presents proposed mitigation and monitoring measures to address potential impacts associated with hydrogeology/groundwater.

Table 4-1: Summary of Potential Impacts, Mitigation Measures and Monitoring: Hydrogeology and Groundwater

Factor	Environmental Issue/Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Hydrogeology/ Groundwater	Potential impact to local groundwater levels. Potential to encounter contaminated groundwater.	<p><u>During Construction</u></p> <ul style="list-style-type: none">Dewatering efforts associated with construction of station infrastructure, tunnelling, the portals, etc., may cause local drawdown of the water table;If extensive dewatering is required drawdown has the potential to impact the recharge of local wetlands;There is a potential for structures to have foundations built below the local water table which may be affected by dewatering; andThere is a potential to encounter contaminated groundwater. <p><u>During Operation</u></p> <ul style="list-style-type: none">At this time, on-going dewatering is not anticipated, however, if it is necessary, long term localized groundwater drawdown can be expected.	<p><u>Prior to Construction</u></p> <ul style="list-style-type: none">Further hydrogeologic assessments will be conducted at locations requiring dewatering to estimate groundwater flow rates, predict impacts (such as lowering groundwater table), and evaluate treatment/discharge options. These studies are also needed to support potentially required watering taking permits from MECP, including registration under MECPs Environmental Activity Sector Register (EASR) or Permit to Take Water (PTTW) applications;Additional investigations to determine the Zone of Influence (ZOI) of any required dewatering will be necessary to fully consider the impacts to nearby structures and infrastructure. Further mitigation plans will be developed prior to construction;Monitoring Wells will be installed and monitored and a baseline established prior to construction;A Groundwater Management and Dewatering Plan will be developed to guide the handling, management, and disposal of groundwater encountered during the works. The Groundwater Management and Dewatering Plan will be overseen by a Qualified Person (QP) and will comply with O. Reg. 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 <i>Ontario Water Resources Act</i>;The Groundwater Management and Dewatering Plan will describe the handling, transfer, testing, monitoring, disposal of groundwater generated as part of the works and in accordance with applicable regulatory requirements. The Groundwater Management and Dewatering Plan will outline general groundwater monitoring considerations during the works and provide guidance for groundwater monitoring following the works where considered applicable;The Groundwater Management and Dewatering Plan will describe the anticipated groundwater quantity and dewatering ZOI that will be encountered during the works, and if approvals are needed for the water taking, such as a PTTW or an 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; andThe Groundwater Management and Dewatering Plan will be reviewed and approved by the Metrolinx prior to construction. <p><u>During Construction</u></p> <ul style="list-style-type: none">Best Management Practices (BMPs) will be implemented for managing groundwater. Contaminated groundwater will be managed in accordance with provincial legislation and regulations including the Ministry of Environment, Conservation and Park's (<i>formerly the Ministry of Environment</i>) (MECP) <i>Guidelines for Use at Contaminated Sites in Ontario</i> (1997).	<p><u>During Construction</u></p> <ul style="list-style-type: none">BMPs will be implemented for managing groundwater, including establishing a baseline and monitoring during construction;Groundwater disposal is anticipated to be to an existing storm or sanitary sewer. The conditions and resulting monitoring and reporting requirements will be the subject of a water disposal permit and monitoring will include sampling and analysis. Water treatment may be necessary prior to disposal;Groundwater disposal is anticipated to be to an existing storm or sanitary sewer. The conditions and resulting monitoring and reporting requirements will be the subject of a water disposal permit and monitoring will include sampling and analysis. Water treatment may be necessary prior to disposal;Upon completion of the work, the Contractor will submit a Groundwater Management and Dewatering Implementation Report to Metrolinx; andA Groundwater Management Monthly Dashboard Report will be developed by the Contractor for Metrolinx review to document performance monitoring data/results and any corrective actions implemented during the previous month. <p><u>During Operation</u></p> <ul style="list-style-type: none">If long term dewatering is required, long term groundwater monitoring will be performed. If permit requirements require it, long term water quality sampling and testing will also be performed.

4.2.2 Surface Water/Drainage

4.2.2.1 Potential Impacts

Construction

In the 2010 EPR and 2013 EPR Addendum, it was anticipated that the ECLRT facilities would increase the pavement area by 15% as a result of proposed Eglinton Avenue West widening. Hydraulic capacity assessment may be needed to ensure that the capacity of receiving storm sewers are not compromised. While the general direction of roadway flow was not to be altered and drainage pattern was to be maintained, catch basins/storm sewers may require relocation. In the 2020 EPR Addendum, with majority of the alignment is being underground, surface drainage impacts have been limited to the alignment section from Scarlett Road to Weston Road and Renforth Portal. In addition, a new elevated guideway structure is proposed crossing the Humber River floodplain. Flood elevation is to be re-assessed to confirm impacts to the portals by the 100-year storm event as discussed in following sections.

Urban construction that disturbs top soil and removes surface vegetation, if uncontrolled, could result in increased rates of erosion and sedimentation within and adjacent to the site area and tributaries to major watersheds. The potential environmental impacts from increased erosion and sedimentation include: degradation of water quality in receiving waterbodies due to displacement of disturbed top soil; destruction of fish habitat; and increased flooding potential. Erosion and sedimentation processes are typically accelerated due to construction activities.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-2.

Operations

Scarlett Road to Weston Road

The proposed alignment exits the tunnel approximately 200 m west of Scarlett Road crossing the Humber River floodplain through 1.5 km elevated guideway. The high point of this segment is at an elevation of 123.77 m over the Scarlett Road. Assuming an elevated guideway width of 12 m, a 1.8 ha increase in impervious area will need to be managed to minimize the impact from increased stormwater runoff to downstream receivers. Drainage and stormwater management for this Project will be achieved through a combination of deck rains, down drains, overland sheet flow, and existing ditch and storm sewers.

Watercourse Crossing

Water Surface Elevations obtained from the hydraulic modelling exercise indicate that the elevated guideway and portal elevations on the north side of Eglinton Avenue West crossing the Humber River are well above the Regional Flood Elevation. An increase in 100-year flood elevation is negligible, however, the increase in regional flood elevation on the Humber River indicates a floodplain impact assessment is required in the next design phase following TRCA guidelines to evaluate the flood risks to infrastructure within the floodplain area. Notably, the

calculated channel velocity increased by around 21% due to the addition of railway bridge indicating scour protection needs to be re-evaluated for the existing bridge structure.

Renforth Portal

The Renforth portal enters into a partially underground tunnel at approximately 100 m southwest of Renforth Drive. Around 200 m of the corridor is uncovered and open to rain and snow around the portal area. Assuming a typical corridor width of 12 m, approximately 0.24 ha new development areas are to be serviced by the existing storm drainage infrastructure. Drainage of the proposed corridor is achieved through portal drains and storm sewers to be developed in later design stages. No additional Stormwater Management (SWM) facilities are proposed.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-2.

4.2.2.2 *Recommended Mitigation Measures and Monitoring*

Table 4-2 presents proposed mitigation and monitoring measures to address potential impacts associated with surface water and drainage.

Table 4-2: Summary of Potential Impacts, Mitigation Measures and Monitoring: Surface Water and Drainage

Factor	Environmental Issue/Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Surface Water/Stormwater and Drainage	<p>Above grade elevated guideway and auxiliary facilities add new impervious surface that impacts stormwater runoff peak flow, volume and contaminants loading.</p> <p>Additional piers in floodway from the new bridge adds obstruction in floodway, which impacts floodline elevation, flood extent and erosion within regulated floodplain.</p> <p>Urban construction that removes vegetative cover and destabilizes topsoil impacts sediment loading discharged to receiving water bodies.</p>	<p><u>During Construction</u></p> <p>Removal of vegetative cover and stripping away of stable topsoil may alter natural drainage pathways leading to erosion of exposed soil, degradation of water quality in receiving waterbodies, destruction of fish habitat, and increased flooding potential.</p> <p><u>During Operation</u></p> <p>Stormwater drainage of above grade runningway and facilities increases stormwater runoff peak flow, volume and contaminants loading, which impacts the natural receiving water bodies as well as operation of the receiving municipal stormwater drainage system.</p> <p>Flood elevation may be increased and flood extent may expand as the additional piers obstruct floodway reducing the cross-sectional area.</p>	<p><u>Prior to Construction</u></p> <ul style="list-style-type: none">Floodplain impact assessment will be conducted in the next design phase following TRCA guidelines once details on the pier configuration and detail design drawings are available to evaluate potential impacts from the new bridge when more details on pier arrangement is available. Creek bed and banks design will include geomorphological input for scour and erosion prevention, and creation of appropriate fish habitat;Landscape based SWM measures have been sized and evaluated to mitigate the impacts. SWM facilities design will be completed during the detail design stage;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 the TRCA;The Drainage and SWM team will work with track engineers, architects and landscape architects on climate change adaptation and considering Low Impact Development;During the design process, an Erosion and Sediment Control (ESC) plan will be developed utilizing BMPs;A number of proposed studies will be completed as part of the next design phase, including:<ul style="list-style-type: none">Floodplain Impact Study and Crossing Analysis for the proposed elevated guideway structure crossing Humber River Floodplain;Fluvial Geomorphic Assessment for the Humber River floodplain at the crossing location; andStormwater Management Report in accordance with the MECP <i>Stormwater Management Planning and Design Manual</i> (2003), the <i>Greater Golden Horseshoe's Erosion and Sediment Control Guideline for Urban Construction</i> (2006), as amended, and the guidelines and regulatory requirements of the TRCA. <p><u>During Construction</u></p> <ul style="list-style-type: none">ESC plans are to be developed at detailed design stage following TRCA, CoT, and CoM guidelines (e.g., TRCAs <i>Guidelines for Erosion and Sediment Control for Urban Construction Sites</i> (2006));The Contractor will develop and implement a Spill Prevention and Response Plan in accordance with applicable regulatory requirements;Any required structure work will be isolated from the open watercourse and conducted “in the dry”;Any required dewatering operations for structure work should be outlet onto a grassed area at least 30 m from the watercourse, a settling pond, and/or wetland filter bag. Based on the dewatering assessment to be completed as the design progresses, the Contractor will either register the project under MECPs EASR to undertake dewatering requirements under 50,000 L/day, or submit a PTTW application to the MECP to undertake any dewatering that is over 50,000 L/day;Any effluents derived from concrete cutting/grinding/forming will be collected and managed in	<p><u>During Construction</u></p> <ul style="list-style-type: none">On-site inspection and maintenance is needed during construction. Proper record will be kept for field inspection, maintenance and reporting activities;Regular inspection will be conducted to ensure the ESC plan is functioning as intended and enforced; andMonitoring will be conducted for potential oil spills and containment of spills to be conducted as per provincial requirements. <p><u>During Operation</u></p> <ul style="list-style-type: none">SWM facilities need to be inspected and monitored in accordance with MECP guidelines.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<p>accordance to provincial standard specifications;</p> <ul style="list-style-type: none">Following the completion of final site grading and topsoil application, a roadside seed mixture and perennial rye grass nurse crop seed should be applied to all exposed soils. For exposed soils located adjacent to watercourses, immediately following seed application a straw erosion control blanket should also be installed along the embankment slopes;In order to mitigate the potential impacts associated with excess material storage (pocket), no stockpiles shall be located closer than 30 m from water features. Waste and excess materials will be dealt with in accordance with Metrolinx's standard construction practises for the management and disposal of excess materials;Waste generated on-site, which requires off-site removal will be completed in accordance with <i>O. Reg. 347</i> under the Ontario <i>Environmental Protection Act</i> which provides for the transportation and processing of hazardous and non-hazardous waste;To prevent surface water contamination during construction, care will be taken to avoid accidental spillage or discharge of chemical contaminants (i.e., gasoline, oils and lubricants). Refuelling should take place no closer than 30 m from surface water features. Furthermore, proper containment, clean up and reporting, in accordance with provincial requirements, should be completed in the event of a spill;All exposed slopes shall be treated with topsoil and seeding, mulching or sodding;A significant step towards controlling erosion during construction is to minimize the amount of disturbed ground cover particularly near watercourses; andExposed areas should not be left uncovered longer than necessary and ground cover should be re-established as quickly as possible. <p><u>During Operation</u></p> <ul style="list-style-type: none">A mitigation plan to minimize effects of road salt application on the Humber River water quality will be developed and implemented; andA de-icing operation plan will be developed and implemented.	

4.2.3 Fish and Fish Habitat

4.2.3.1 Potential Impacts

Construction

The 2010 EPR documents the potential impacts to the watercourses along the ECLRT, while the 2013 EPR Addendum documents the potential impacts to Black Creek. However, only the Humber River, Silver Creek, and Mimico Creek are within the study area assessed for the 2020 EPR Addendum.

Impacts to fish and fish habitat associated with the proposed alignment design changes are inconsistent with those discussed for the Humber River, Silver Creek, and Mimico Creek identified in the 2010 EPR.

In-stream works are not proposed for any of the watercourses, limiting the potential impacts to fish and fish habitat during construction. Tunnelling is proposed under Mimico Creek and Silver Creek, therefore, no direct or indirect impacts to fish and fish habitat are anticipated with the proper implementation of Best Management Practices (BMPs).

Work proposed at the Humber River includes erecting a guideway crossing, north of Eglinton Avenue West. All work is proposed above the high-water mark of the Humber River. A clear span bridge will be constructed over the Humber River preventing encroachment into the watercourse, minimizing the impacts of the proposed work; thus, no direct effects are anticipated during construction with the proper implementation of BMPs. However, potential indirect effects may impact fish and fish habitat in the Humber River due to construction of the bridge works. Riparian vegetation that functions as fish habitat by providing shade, cover, areas for spawning, and sources of food may be removed in preparation for construction. There is also the potential for deleterious substances to be released into the watercourse during construction activities. These impacts can be avoided by implementing appropriate mitigation measures provided in Table 4-3.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-3.

Operations

The Project has the potential to affect the surface water quality at the Humber River due to spills of fuel or through the application of other hazardous materials (e.g., de-icing substances during winter months) as part of maintenance activities.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-3.

4.2.3.2 Recommended Mitigation Measures and Monitoring

Table 4-3 presents proposed mitigation and monitoring measures to address potential impacts associated with fish and fish habitat.

Table 4-3: Summary of Potential Impacts, Mitigation Measures and Monitoring: Fish and Fish Habitat

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Fish and Fish Habitat	Potential impacts to fish and fish habitat.	<p><u>During Construction</u></p> <p>Given the proposed bridge structure will span the Humber River, the watercourse and will not encroach into the watercourse and direct impacts to fish and fish habitat are not anticipated during construction.</p> <p>Potential indirect impacts may occur to fish and fish habitat in the Humber River due to construction of the stations, alignment and bridge works, which include:</p> <ul style="list-style-type: none">Removal of riparian vegetation adjacent to the watercourse that functions as fish habitat by providing shade, cover and areas for spawning and food production; andStormwater run-off and the use of machinery adjacent to the watercourse can introduce deleterious substances (e.g., debris, oil, fuel, and grease) to the Humber River and result in erosion and sedimentation. <p><u>During Operation</u></p> <p>Potential operational and maintenance impacts include spills of fuel and/or application of other hazardous materials (e.g., de-icing substances during winter months) have the potential to affect surface water quality at the Humber River.</p>	<p><u>During Construction</u></p> <ul style="list-style-type: none">All requirements of the <i>Fisheries Act</i> and the <i>ESA</i> will be met;Implement BMPs for near-water works;Avoid in-water work or work below the High-Water;Schedule construction to avoid wet and rainy periods;Prohibit the use of heavy equipment in the watercourse or on watercourse banks;Delineate work areas with construction fencing to minimize the area of disturbance;Construction activities will maintain the buffers established during the design phase to minimize potential negative impacts to wetlands and waterbodies;Ensure equipment and materials storage, maintenance, and refueling are located in designated and properly contained areas at least 30 m away from watercourses;Implement a SWM plan to maintain pre-construction drainage patterns and flows;Implement an ESC Plan throughout construction (e.g., install silt fencing along margins of watercourse) to minimize erosion and prevent off-site sedimentation, encompassing all areas of soil disturbance, particularly in the vicinity of the Humber River;Locate all salvaged or stockpiled materials a safe distance from the edge of the watercourse and stabilize to prevent migration of any sediment or other material to the watercourse;Shorelines or banks disturbed by construction activities will be immediately stabilized by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site;Stabilize and re-vegetate all work areas or other disturbed surfaces draining to the watercourse and/or in the floodplains as soon as feasible following construction;Retain and protect as much of the natural vegetation as reasonably possible to help ensure bank stability and control erosion;Ensure that cleared areas are restored to pre-construction conditions or better through planting of native trees and vegetation;Control all activity to prevent entry of any petroleum products, debris or other potential contaminants/deleterious substances to the watercourse;Report any spills to the MECP Spills Action Centre (SAC) hotline (1-800-268-6060) and Fisheries and Oceans Canada. In addition, the construction contractor should maintain a spill kit on-site at all times during construction;If aquatic SAR is present, design and construction will occur in accordance with MECP requirements and all requirements of the <i>Fisheries Act</i> and the <i>Endangered Species Act</i> will be met;In the event that in-water and/or near water construction works are required, the restricted construction activity timing windows and appropriate mitigation measures will be followed, as identified in Applicable Law and through consultation with the relevant authorities including the	<p><u>During Construction</u></p> <ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. <p><u>During Operation</u></p> <ul style="list-style-type: none">Contractors and rail staff will be responsible for monitoring the effects of operations and maintenance activities. Any significant concerns will be reported to superiors for timely resolution.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<p>Conservation Authority, MECP, MNRF and Fisheries and Oceans Canada (DFO). In water works will be planned to respect timing windows (to be confirmed by MNRF) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed;</p> <ul style="list-style-type: none">Isolate work areas within the watercourse from flow (i.e.; coffer dam) prior to construction ensuring work below the High-Water mark is carried out under dry conditions; andPrior 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. <p><u>During Operation</u></p> <ul style="list-style-type: none">Implement an emergency and response management plan to address the potential for spills;Ensure all on-site hazardous materials are properly stored and located at least 30 m away from watercourses and other sensitive natural features, such as wetlands, including all handling and refueling activities;All on-site materials should be self-contained, maintained according to manufacturer's instructions and disposed of appropriately;Spill kits should be kept on-site and accessible at all times; andReport any spills to the MECP SAC hotline (1-800-268-6060) and DFO.	

4.2.4 Vegetation and Vegetation Communities

None of the vegetation communities documented as part of the Project are considered provincially or locally rare; all are considered common to the area. However, 26 regionally and/or locally rare plant species have the potential to occur in the study area. Habitat for most of these species are limited to natural heritage systems surrounding Mimico Creek, Silver Creek, and the Humber River, as well as woodlands.

4.2.4.1 Potential Impacts

Construction

The Project will consist of underground, elevated and partially at-grade alignments predominately within the ROW of Eglinton Avenue West. Underground alignments will limit the amount of required above grade infrastructure, reducing impacts to vegetation and vegetation communities within the study area.

The underground alignment west of Scarlett Road to Renforth Drive will include tunnelling, however it is not expected to impact the natural environment. Impacts to vegetation and vegetation communities are anticipated for partially at-grade and elevated alignments, stations and portals.

Impacts to vegetation and vegetation communities located outside of the natural heritage features are anticipated to be low, with potential impacts limited to typical ground vegetation disturbance and clearing, and individual tree removal.

Project works that are directly (or potentially) within a natural heritage feature have a high potential to impact vegetation and vegetation communities through direct encroachment. This includes the stations and elevated guideway alignment from east of Jane Street to west of Scarlett Road, which have the potential to result in the permanent loss of vegetation through clearing. Natural heritage features are shown in Figure 3-1.

The permanent or temporary loss of vegetation may alter the vegetation community structure, species composition, and quality of habitat in this area, as well as damage adjacent trees, through: soil compaction, changes in moisture regime, introduction and spread of invasive species, fugitive dust, erosion and sedimentation, accidental spills.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-4.

Operations

Operation of the Project has the potential to affect vegetation and vegetation communities due to spills of fuel or through the application of other hazardous materials (e.g., de-icing substances during winter months) as part of maintenance activities.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-4.

4.2.4.2 *Recommended Mitigation Measures and Monitoring*

Table 4-4 presents proposed mitigation and monitoring measures to address potential impacts associated with vegetation and vegetation communities.

Table 4-4: Summary of Potential Impacts Mitigation Measures and Monitoring: Vegetation and Vegetation Communities

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Vegetation and Vegetation Communities	Direct and indirect impacts to woodlands, wetlands and general vegetation through vegetation removal.	<u>During Construction</u> Permanent and temporary habitat loss.	<u>During Construction</u> <ul style="list-style-type: none">• Implement BMPs;• Minimize encroachment of vegetated areas to the extent possible;• Limit construction activities to the work area, and if necessary, sensitive features should be demarcated if they are located immediately adjacent to the work zone;• Where feasible, maintain vegetated buffers;• Implement an ESC Plan to minimize erosion and prevent off-site sedimentation;• Implement a SWM Plan designed to meet water balance targets, and provide the framework for safe conveyance of storm runoff from the site, to mitigate the increase in runoff from the impervious areas and the potential impact to natural features;• Minimize the extent and duration of exposed soil and re-vegetate as soon as possible to help re-stabilize soils. Vegetation plantings should include a seed mix that is appropriate to the area and similar to or better than pre-construction conditions;• Vegetation removals will also consider and mitigate potential impacts to sensitive species, e.g., migratory birds and SAR, and features, e.g., Designated Natural Areas and Significant Wildlife Habitat;• In the event of a spill, implement an emergency and response control plan. Spill kits should be kept on-site and accessible at all times; and• Provide compensation for the removal of woodlands and loss of habitat in accordance with Metrolinx's Vegetation Guideline (2020) and Integrated Vegetation Management (IVM) approach.	<u>During Construction</u> <ul style="list-style-type: none">• On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts; and• The success of vegetation compensation activities will be monitored in accordance with Metrolinx's Vegetation Guideline. The approach to compensation monitoring will be determined by property ownership, applicable governing bylaws/regulations and location with respect to ecological functioning.
	Direct and indirect impacts to trees.	<u>During Construction</u> Loss and injury to trees.	<u>During Construction</u> <ul style="list-style-type: none">• Establish Tree Protection Zone fencing to protect and prevent tree injuries in accordance with local by-law requirements. Where feasible, a setback from the dripline of adjacent trees will be maintained to protect the rooting zone of edge trees;• If a tree requires removal or injury, compensation and permitting/approvals (as required) will be undertaken in accordance with Metrolinx's Vegetation Guideline (2020);• Pruning of branches will be conducted through the implementation of proper arboricultural techniques; and• 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.	<u>During Construction</u> <ul style="list-style-type: none">• On-site inspection will be undertaken as required during construction to ensure that only specified trees are removed, fencing is intact and there is no damage caused to the remaining trees and adjacent vegetation communities. Construction and/or ESC fencing will be repaired if it is damaged. Any damaged trees will be pruned through the implementation of proper arboricultural techniques, under supervision of an Arborist or Forester; and• Metrolinx will obtain all necessary permits and approvals and meet applicable monitoring and compensation requirements, as needed.
	Alteration to community structure, edge effects, and changes in species composition. Change in the quality of	<u>During Construction</u> Introduction/spread of invasive species. Potential for the spread of emerald ash borer associated with removal,	<u>During Construction</u> <ul style="list-style-type: none">• Implement the <i>Clean Equipment Protocol for Industry</i> (Halloran et al., 2013) to minimize the introduction and spread of invasive species;• 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: <i>Phytosanitary Requirements to</i>	<u>During Construction</u> <ul style="list-style-type: none">• On-site inspection to ensure vehicles are being cleaned in accordance with the <i>Clean Equipment Protocol for Industry</i> (Halloran et al., 2013) and confirm implementation of the mitigation measures;

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
	habitat.	<p>handing and transport of ash trees.</p> <p>Soil compaction.</p> <p>Changes in moisture regime.</p> <p>Fugitive dust.</p> <p>Erosion and sedimentation.</p> <p><u>During Construction and Operation</u></p> <p>Accidental spills of fuel and/or application of other hazardous materials (e.g., de-icing substances during winter months) have the potential to affect vegetation and vegetation communities.</p>	<p><i>Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, Agrilus planipennis (Fairmaire)</i> (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;</p> <ul style="list-style-type: none">• Implement surface protection measures to minimize soil compaction;• Where feasible, maintain a setback from the dripline of adjacent trees to protect the rooting zone of edge trees and install tree protection fencing;• Where feasible, maintain vegetated buffers;• Implement a dust management plan for the suppression of fugitive dust;• Implement an ESC plan to minimize erosion and prevent off-site sedimentation;• Ensure heavy equipment and all on-site hazardous materials are properly stored and located at least 30 m away from watercourses and other sensitive natural features, such as wetlands, including all handling and refueling activities;• Shorelines or banks disturbed by construction activities will be immediately stabilized by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site;• Minimize the extent and duration of exposed soil and re-vegetate as soon as possible to help re-stabilize soils. Vegetation plantings should include a seed mix that is appropriate to the area and similar to or better than pre-construction conditions; and• Timing of vegetation removal should consider rainfall and other weather conditions that could increase the likelihood of erosion and sedimentation. For example, if feasible, avoid vegetation and earthworks in the spring. <p><u>During Operation</u></p> <ul style="list-style-type: none">• Implement an emergency and response management plan to address the potential for spills;• Ensure all on-site hazardous materials are properly stored and located at least 30 m away from sensitive natural features, such as wetlands, including all handling and refueling activities;• All on-site materials should be self-contained, maintained according to manufacturer's instructions and disposed of appropriately;• Spill kits should be kept on-site and accessible at all times; and• Report any spills to the MECP SAC hotline (1-800-268-6060).	<ul style="list-style-type: none">• Ensure precautions are being taken to minimize the spread of invasive species by cleaning equipment prior to moving sites; and• Construction monitoring should be completed to ensure Erosion and Sedimentation (E&S) measures are in place and working effectively. E&S controls should be checked weekly and after major rain events (>10 mm) to ensure it is installed and functioning properly. Daily monitoring should be completed by the Contractor. Any deficiencies should be repaired immediately. A construction monitoring log should be maintained to ensure any deficiencies and corrective actions are documented.

4.2.5 Wildlife and Wildlife Habitat

4.2.5.1 Potential Impacts

Construction

Naturalized areas located within the study area are predominantly associated with the Humber River, Silver Creek, Mimico Creek, and lands associated with the CoTs Natural Heritage System. Wildlife, candidate Significant Wildlife Habitat, and potential SAR habitat are primarily limited to these naturalized areas, as well as woodlands within the study area. These naturalized areas and woodlands are shown in Figure 3-1. As noted previously, the underground alignments will limit the amount of required above ground infrastructure, which will reduce the potential impacts to wildlife and wildlife habitat.

The majority of the alignment is underground and is not expected to impact wildlife and wildlife habitat. However, there is potential for some encroachment and disturbance of wildlife and wildlife habitat near the elevated guideway (east of Jane Street to west of Scarlett Road). Proposed works include vegetation removal, including woodlands, which may impact wildlife and wildlife habitat. Direct impacts are also anticipated at the station locations.

The Project also has the potential to reduce the quality of wildlife habitat within the study area. These impacts may alter community structure due to soil compaction, changes in moisture regimes, the introduction and spread of invasive species, fugitive dust, erosion and sedimentation, and accidental spills. These impacts are expected to be temporary during construction and can be avoided or minimized through appropriate mitigation.

Habitat avoidance is also possible during construction with wildlife avoiding the area due to increased noise, lighting and human presence. Incidental take due to collisions with vehicles and machinery, as well as the accidental removal of bird nests and eggs, and damage to, or the permanent removal of, bat roosting trees, are also possible during construction.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-5.

Operations

During operations, transit service associated with the elevated segment of the Project will result in noise, which may affect and possibly displace wildlife. Injury and incidental take to general wildlife and migratory birds may also result from wildlife collisions with transit (e.g., birds flying into the path of a moving train) along the elevated segment of the Project, during operations. However, wildlife present within the study area are likely somewhat adapted to these effects (e.g., noise) given the urban nature of the site, and these effects are anticipated to be minor.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-5.

4.2.5.2 *Recommended Mitigation Measures and Monitoring*

Table 4-5 presents proposed mitigation and monitoring measures to address potential impacts associated with wildlife and wildlife habitat.

Table 4-5: Summary of Potential Impacts, Mitigation Measures and Monitoring: Wildlife and Wildlife Habitat

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Wildlife and Wildlife Habitat	Impacts to general wildlife due to vegetation removal. Disturbance and changes in behaviour to general wildlife.	<u>During Construction</u> Permanent and temporary habitat loss and/or alteration. Increase noise during construction. Increased lighting. Increased human presence. <u>During Operation</u> Increased noise during operations.	<u>During Construction</u> <ul style="list-style-type: none">Prior to construction, investigation of the Project for wildlife and wildlife habitat that may have established following the completion of previous surveys will be undertaken, as appropriate;If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced and wildlife will be encouraged to move off-site and away from the construction area on its own. A qualified biologist will be contacted to define the appropriate buffer required from wildlife;Construction activities will be restricted to specified work areas;Naturalized plantings to enhance connectivity within the Humber River corridor are recommended;Avoid idling and ensure construction vehicles and machinery are kept in good repair; andWhere feasible, minimize the extent and duration of construction noise and lighting during sensitive seasons and to daylight hours. <u>During Operation</u> <ul style="list-style-type: none">Wildlife present within the study area are likely somewhat adapted to the effects of noise associated with transit service for the partially at-grade section of the project given the urban nature of the study area. These effects are anticipated to be minor.	<u>During Construction</u> <ul style="list-style-type: none">Conduct visual inspections for wildlife prior to the start of construction each day and regularly throughout the day during the active season. This will include a thorough walk-through of the work area and searching any brush piles, logs or rock piles and equipment. Inspections shall be completed by a Qualified Biologist trained in the verification and relocation of SAR; andOn-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.
	Injury and incidental take to general wildlife and migratory birds.	<u>During Construction</u> Collision with vehicles/machinery. Loss of individuals. Removal of nest and eggs. <u>During Operation</u> Collision with transit.	<u>During Construction</u> <ul style="list-style-type: none">Vegetation removal and site preparation shall occur within the winter months (e.g., November to early March), outside of active wildlife periods, including spring and fall migration. The active periods for wildlife are provided below:<ul style="list-style-type: none">Birds: April 1 - August 31.Turtles: late March/early April - late October.Bats: April 1 - September 30.Exclusionary fencing shall be installed to prevent wildlife from entering the construction site, ensuring they do not prohibit access to necessary habitats;Any wildlife incidentally encountered during construction will not be knowingly harmed and will be allowed to move away from the construction area on its own if at all possible;If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced and wildlife will be encouraged to move off-site and away from the construction area on its own. A qualified biologist will be contacted to define the appropriate buffer required for wildlife;Wildlife relocations will only be performed if an animal is in danger and if field staff can do so safely. Relocations will be completed by a qualified ecologist following the techniques outlined in the MNRF Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders. The manual includes measures for safe handling, relocation, and transportation of live, injured, and dead animals. Injured wildlife will be captured and relocated to the nearest appropriate authorized wildlife rehabilitator (https://learningcompass.learnflex.net/Upload/Public/WildlifeRehabilitatorsPublicList.htm);	<u>During Construction</u> <ul style="list-style-type: none">Conduct visual inspections for wildlife prior to the start of construction each day and regularly throughout the day during the active season. This will include a thorough walk-through of the work area and searching any brush piles, logs or rock piles and equipment. Inspections shall be completed by a Qualified Biologist trained in the verification and relocation of SAR;Monitoring will be completed to ensure mitigation and contingency measures are implemented and performance objectives are being met. Construction monitoring should be completed to ensure wildlife exclusionary and ESC measures are in place and working effectively. ESC measures should be checked weekly and after major rain events (>10 mm) to ensure proper installation and functioning. Daily monitoring should be completed and any deficiencies should be repaired immediately. A construction monitoring log should be maintained to ensure any deficiencies and corrective actions are documented; monitoring requirements will be undertaken in accordance with conditions of permits and approvals. Monitoring shall include:<ul style="list-style-type: none">Survey exclusionary fencing installation prior to

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<ul style="list-style-type: none">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 .Preventative measures to minimize encounters, injury and incidental take should also be provided;All on-site materials should be self-contained, maintained according to manufacturer’s instructions and disposed of appropriately;All works must comply with the <i>Migratory Birds Convention Act</i> (MBCA), including timing windows for the nesting period (i.e., April 1 - August 31);If activities are proposed during the general bird nesting period for breeding birds (i.e., April 1 - August 31), the following is recommended:<ul style="list-style-type: none">A nest sweep shall be completed by a qualified biologist prior to construction to verify nesting activity. Any vegetation removal occurring during the general bird besting period must take place within 48 hours of the inspection; andBird nesting preventative measures (e.g., tarps) shall be installed at structures (e.g. bridge/culvert) prior to April 1 to inhibit birds from nesting within the structures.If an active bird nest is found within the work area, at any time (including times outside of the typical nesting season), construction in the vicinity must cease until the young birds have fledged or the nest is otherwise abandoned. A setback from the nest (e.g., 30 m) should be identified and the area demarcated to ensure work does not occur within the setback limits. A qualified biologist should be consulted to determine the setback limits. <p><i>Turtles and Snakes</i></p> <ul style="list-style-type: none">If turtles or snakes are encountered during construction, whenever possible, work should be temporarily suspended until the species is out of harm’s way;The active turtle nesting window is between late May to early July. If a turtle is observed actively nesting, all work in the area shall cease that is within the line of site of the turtle, to allow the female to finish laying eggs. Startling a nesting female could lead to abandonment of the partially laid nest before the eggs are concealed. MECP should be consulted immediately to discuss mitigation options, including measures to take if relocation of hatchlings or egg salvage is needed; andInstall exclusionary fencing to prevent wildlife from entering the construction site. This also includes areas where potential nesting (e.g., upland communities) and overwintering habitat (open water and marsh communities) may be present. Exclusionary fencing should not prohibit access to nearby habitats. Where required, redirect species to areas where they can avoid the potential for incidental take and still have access to habitats. If ESC measures are used on-site, mesh backing is not permitted. If wire-backed fencing is necessary, the openings should be large (such as 2" by 4"). Snakes can become entangled in mesh openings that are ¼ ". ESC measures shall be monitored twice daily at the beginning of work and end of day. <p><u>During Operation</u></p> <ul style="list-style-type: none">Wildlife present within the study area are likely somewhat adapted to these effects given the urban nature of the study area. These effects are anticipated to be minor.	<p>construction and carry out regular monitoring during construction to survey for snakes potentially trapped within exclusionary areas; and</p> <ul style="list-style-type: none">Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.Regular inspection of the structures during the nesting season should be completed to ensure the exclusion measures have been effective and no nests are present.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
	Impacts to SAR.	<p><u>During Construction</u></p> <p>Habitat loss, disturbance and/or mortality to SAR.</p>	<p><u>During Construction</u></p> <ul style="list-style-type: none">A permit/registration under the ESA shall be obtained for any impacted SAR, in consultation with MECP to fulfil requirements the ESA and its associated regulations;All requirements of the ESA will be met and species-specific mitigation measures will be implemented based on any recommended surveys undertaken prior to construction, and in consultation with MECP;If SAR is present and conservation strategies have been developed by MNR/MECP, the Contractor will follow the commitments in the recover strategy;All observations of SAR will be reported directly to the MECP and the MNR Natural Heritage Information Centre using the online rare species reporting form, or will be emailed to them in spreadsheet format in the event of multiple observations; andOn-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. <p>SAR Bats</p> <ul style="list-style-type: none">Disturbance to bat roosting habitat will be avoided during the bat roosting period of April 1 to September 30, with emphasis on avoiding potential effects during the maternity period of June 1st to July 31st and in accordance with MECP requirements;Additional mitigation and compensation may be required if removal of suitable cavity trees is required, based on the results of additional surveys and consultation with the MECP; andWhere feasible, minimize the extent and duration of construction noise and lighting during sensitive seasons and to daylight hours, particularly near woodlands. <p>SAR Birds (Barn Swallow, Bank Swallow, and Chimney Swift)</p> <ul style="list-style-type: none">Same as those identified for migratory birds under incidental take and including the following:<ul style="list-style-type: none">Field surveys will be undertaken prior to construction to confirm the number of nests present at the known locations and whether the nests remain active;Where loss or disturbance cannot be avoided (e.g., due to work on bridges or banks), all requirements under the ESA will be met, including any registration, compensation, replacement structures and/or permitting requirements;If construction activities are scheduled during the nesting season for Barn and/or Bank Swallow (April 1st to August 31st), a nest search will be undertaken to confirm that no Barn and/or Bank Swallow are nesting on structures or banks that may be affected by construction activities on or near these areas. If possible, the area will be netted prior to nesting season to dissuade use of these areas for nesting;If repair, maintenance or demolition of buildings/structures with suitable roosting/nesting habitat (e.g., chimneys) is to take place, targeted surveys for Chimney Swift will be completed as per the <i>Bird Studies Canada Chimney Swift Monitoring Protocol</i> (2009); andRepair, maintenance, or demolition of an identified roosting/nesting structure may constitute destruction of critical habitat and would be discussed in advance with the MECP and requirements of the ESA will be met.	<p><u>During Construction</u></p> <ul style="list-style-type: none">On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts;A construction monitoring log should be maintained to ensure any deficiencies and corrective actions are documented;Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA; andAdditional monitoring, mitigation and compensation for removal of suitable cavity trees may be required based on the results of additional surveys and consultation with the MECP.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<p>SAR Turtles</p> <ul style="list-style-type: none">• If potential turtle nest sites (i.e., areas of fresh digging in loose gravel or sandy material) are found within the work areas, work shall temporarily cease in the immediate area and the project biologist should be consulted to discuss appropriate mitigation options. If the nest is confirmed to be a SAR or has the potential to be a SAR, MECP should also be consulted. The nests should be left undisturbed, flagged and a 5 m buffer (unless otherwise directed by MECP, where applicable) applied to protect against construction activities;• If turtles or snakes are encountered during construction, whenever possible, work should be temporarily suspended until the species is out of harm’s way;• In areas identified as being potential turtle habitat (including SAR), an inspection for turtles will be conducted. If a nesting turtle is found, the MECP will be notified immediately, a suitable buffer zone will be flagged around the site, and that area will be protected from harm during the nesting season; and• In-water works are not currently anticipated. However, should in-water works be required In areas identified as being potential SAR turtle habitat, works will be scheduled to occur outside of the turtle overwintering period of October 1st to April 30th in any given year and in accordance with MECP requirements. <p>SAR Snakes</p> <ul style="list-style-type: none">• If reptile hibernacula or an egg-laying site is discovered during construction, all work shall cease in that area and MECP shall be contacted to discuss mitigation measures;• Where project activity occurs adjacent to suitable snake hibernacula, exclusionary fencing will be erected along the activity area to fully isolate the area of activity during the active snake season. In the event that exclusionary fencing cannot be installed, follow-up discussions with the MECP and the MNRF will be required to determine adequate alternative mitigation measure(s); and• For areas where the hibernacula feature requires removal to facilitate development, the exclusion fencing is to be installed during the active snake season and prior to any construction activities commencing to prevent snakes from entering the feature pre-removal. Any snakes encountered within the exclusion fencing will be relocated outside the fencing and within suitable habitat containing suitable vegetation cover/refuge by a qualified biologist in accordance with the required permit(s) in accordance with the MNRF’s <i>Reptile and Amphibian Exclusion Fencing</i> (2013).	
	Alteration to community structure, edge effects changes in species composition, and quality of habitat due to unplanned events.	<p><u>During Construction and Operation</u></p> <p>E&S.</p> <p>Accidental spills of fuel and/or application of other hazardous materials (e.g., de-icing substances during winter months) have the potential to affect surface water quality.</p>	<ul style="list-style-type: none">• Same as those identified for vegetation and vegetation communities.	<ul style="list-style-type: none">• Same as those identified for vegetation and vegetation communities.

4.2.6 Designated Natural Areas and Parks

4.2.6.1 Potential Impacts

Construction

All work within the Silver Creek and Mimico Creek Natural Heritage System is proposed below ground; thus, no direct or indirect effects to these features are anticipated. However, direct encroachment of the Humber River Natural Heritage System is anticipated, primarily north of Eglinton Avenue West, due to the construction of the elevated stations at Jane Street and Scarlett Road, and the elevated guideway extending from east of Jane street to Scarlett Road. Scarlett Station and the bridge crossing proposed at the Humber River, are also proposed within Greenbelt Plan Area, designated as an Urban River Valley, and have the potential to impact this natural area. The potential impacts noted in Section 4.2.4 and 4.2.5 are also anticipated for the Humber River Valley.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are similar to those presented in Table 4-3, Table 4-4 and Table 4-5.

Operations

During operations, the Project may potentially affect natural areas due to spills of fuel or through the application of other hazardous materials (e.g., de-icing substances during winter months) as part of maintenance activities.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are similar to those presented in Table 4-3, Table 4-4 and Table 4-5.

4.2.6.2 Recommended Mitigation Measures and Monitoring

Table 4-3, Table 4-4 and Table 4-5 present proposed mitigation and monitoring measures to address potential impacts associated with designated natural areas and parks.

4.2.7 Air Quality

The AQIAs, completed as part of the 2010 EPR and 2013 EPR Addendum, show that most of the impacts on air quality will be generated during the construction phase of the project rather than its operational phase. In fact, the assessments showed that there were improvements on air quality associated with the project's completion, mainly due to cleaner fuels and advance control technologies that are expected in the transportation field. The findings also demonstrated that the impacts on air quality during construction will be of short duration and spatially constrained to where the works take place along the Eglinton Avenue West corridor. Mitigation measures, such as dust suppression techniques, as well as the monitoring of certain contaminants during construction activities are also proposed as part of those assessments.

The AQIA completed as part of the 2020 EPR Addendum considered how the project components could potentially affect air quality in the study area. It documents the potential effects that may occur due to the change in traffic patterns associated with the Project as well

as the mitigation measures and monitoring activities (as applicable) identified to minimize the predicted effects on air quality.

4.2.7.1 *Potential Impacts*

Construction

The construction activities associated with the Project consist of the construction of new underground tunnels, structures, platforms, walkways and landscaped areas. Therefore, air emissions associated with Project construction will typically include fugitive dust emissions (Total Suspended Particles (TSP), inhalable particulate matter (PM₁₀) and (PM_{2.5})) resulting from:

- Clearing and grubbing of the Project site, where surface infrastructure is planned;
- Soil excavation and filling activities required to facilitate the site layout for the new stations;
- Cutting of existing pavement;
- Stockpiling of soil and other friable construction materials;
- Granular (i.e., aggregate) material loading and unloading activities;
- Transport of soils and other friable construction materials to/from the Project site via dump trucks;
- Movement of heavy and light vehicles on paved and unpaved roads;
- TBM, LSs and ESs, and soil tipping area; and
- Emissions resulting from the use of combustion engines associated within mobile and stationary construction equipment and machinery on-site.

In addition, construction activities will result in temporary traffic disruption and detours. This can lead to increased traffic congestion, thereby increasing motor vehicle exhaust emissions on nearby roadways, which could result in elevated localized pollutant levels (or concentrations). However, compared with emissions from other motor vehicle sources in the study area, emissions from construction equipment and machinery are temporary and generally insignificant with respect to compliance with Provincial and Federal ambient air quality standards.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-6.

Operations

The major sources of air emissions considered in this analysis are generated by fugitive dust emissions generated from vehicles travelling on the paved surfaces and adjacent driveways: the combustion engines of buses, passenger vehicles and heavy vehicles travelling in the vicinity of the Project on nearby paved surfaces, such as adjacent municipal roadways and on-site driveways. The only road segments included in this analysis are the ones considered to be the most affected by the Project.

The potential effect on local air quality during the operations of the Future Case scenario is predicted to be negligible for most of the contaminants. All sensitive and critical receptors located along the Project most impacted sectors have predicted concentrations for the Future case scenario that are lower than the Existing Case scenario.

This can be explained by the fact that the traffic growth due to the Project's completion is not significant enough to counteract the decreasing emission rates of the different vehicles being modelled.

It is noted that the background levels for B(a)P and PM_{2.5} are already high in the study area and that the Future Case scenario exceedances are not caused by the Project.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-6.

4.2.7.2 *Recommended Mitigation Measures and Monitoring*

Table 4-6 presents proposed mitigation and monitoring measures to address potential impacts associated with air quality.

Table 4-6: Summary of Potential Impacts, Mitigation Measures and Monitoring: Air Quality

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Air Quality	Potential reduction of air quality in the vicinity of the Project's construction site.	<p><u>During Construction</u></p> <p>Fugitive dust emissions: TSP, inhalable particulate matter (PM₁₀) and (PM_{2.5}).</p> <p>Emissions resulting from the use of combustion engines within mobile and stationary construction equipment and machinery on-site.</p> <p>Temporary traffic disruption and detours. This can lead to increased traffic congestion, thereby increasing motor vehicle exhaust emissions on nearby roadways, which could result in elevated localized pollutant levels (or concentrations).</p>	<p><u>Prior to and During Construction</u></p> <ul style="list-style-type: none">BMPs will be implemented to mitigate potential air quality effects associated with the construction activities, which will be included in an Air Quality Management Plan (AQMP). Prior to commencement of construction, the Contractor will develop and submit a detailed Construction AQMP to Metrolinx. The AQMP will:<ul style="list-style-type: none">Demonstrate compliance with the specific air quality criteria and limits in the Metrolinx <i>Environmental Guide for Air Quality and Greenhouse Gas Emissions Assessment</i> (2019);Define the Project's air quality impact zone and identify all sensitive receptors within this area;Assess the baseline air quality by continuous measurement of local ambient concentrations of PM_{2.5} and PM₁₀ over a minimum period of one week, where large local sources of pollution, such as highways, directly affect the ZOI of the Project;Estimate and document the predictable worst-case air quality impacts of the Project on sensitive receptors within the air quality impact zone, develop appropriate mitigation measures, demonstrate their effectiveness, and commit to their timely implementation; andInclude explicit commitment to the implementation of all applicable best practices identified in Environment Canada's <i>Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities</i> (2005).Implementation of dust suppression measures (i.e., application of water wherever appropriate, or the use of approved non-chloride chemical dust suppressants, where the application of water is not suitable) as needed to control fugitive dust emissions in accordance with the (Cheminfo Services Inc., 2005) publication <i>Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities</i>;Stockpiling of soil and other friable materials in locations that are less exposed to wind (i.e., protected from the wind by suitable barriers or wind fences/screens) and far from sensitive receptors;Seeding, paving, covering, wetting, or otherwise treating disturbed soil surfaces as soon as reasonably possible after disturbance. Permanently stabilizing exposed soil areas with non-erodible material (i.e., stone or vegetation) as soon as reasonably possible after construction in the affected area is complete;Modifying work schedules when weather conditions could lead to adverse impacts (i.e., very dry soil and high winds);Removing all loose or unsecured debris or materials from empty trucks prior to leaving the Project site;Covering all truckloads of dust-producing material, including use of dump trucks with retractable covers for the transport of soils and other friable materials;Minimizing the number of loading and unloading of friable materials;Minimizing drop heights, using enclosed chutes, and covering debris bins used for deconstruction of affected structures;	<p><u>During Construction</u></p> <ul style="list-style-type: none">Development and implementation of Weekly AQMPs, submitted to Metrolinx that document how air quality monitoring has been conducted and compliance assessed to effectively prevent unacceptable rates of air emissions in accordance with the following guidelines:<ul style="list-style-type: none">The construction related air contaminants of primary concern are in the form of particulate matter, with the principal construction related fractions of PM_{2.5} and PM₁₀ - particulate matter of less than 2.5 and 10 micron in diameter, respectively. Other contaminants of concern include crystalline silica and oxides of nitrogen. The list of contaminants will be expanded with any and all air pollutants that may be produced as a result of the work;The criteria for PM_{2.5}, PM₁₀ and crystalline silica are provided in Metrolinx's <i>Environmental Guide for Air Quality and Greenhouse Gas Emissions Assessment</i> (2019). The applicable criteria for all other air contaminants of concern are to be found in the various schedules of O. Reg. 419/05; andSiting of the monitors should generally follow the guidelines provided in the MECP <i>Operations Manual for Air Quality Monitoring in Ontario</i> (2018).Construction activities will be monitored by a qualified Environmental Inspector who will frequently review the effectiveness of the mitigation measures and construction BMPs to confirm that they are functioning as intended;Monitor continuously any contaminant, in addition to PM_{2.5} and PM₁₀, which is predicted to exceed its relevant air quality exposure criterion during any phase of the Project and at any receptor;In the event that mitigation measures and/or construction BMPs are not functioning as intended (or are ineffective), revised mitigation measures/BMPs designed to improve their overall effectiveness will be implemented;Dust levels will be monitored to assess the effectiveness of dust suppression measures and will be adjusted, if necessary; andA complaint response protocol for nuisance effects, such as dust, will be established.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<ul style="list-style-type: none">Reducing unnecessary traffic and implementation of speed limits on any unpaved surfaces;Vacuum sweeping or watering of all paved surfaces and roadways on which equipment and truck traffic enter and leave the construction areas;Washing of equipment and machinery, and use of wheel washes or mud mats where practical at construction site exits to limit the migration of soil and dust off-site;Ensuring that all construction vehicles, machinery, and equipment is equipped with current emission controls, which are in a state of good repair, that equipment is properly and regularly maintained, and compliant with applicable federal and provincial regulations for off-road diesel engines;Site supervisors during the construction phase should monitor the site for wind direction and weather conditions to ensure that high-impact activities be reduced when the wind is blowing consistently towards nearby sensitive receptors. The site supervisor should also monitor for visible fugitive dust and take action to determine the root-cause in order to counteract this. Specific details to this effect should be included in the construction site's Dust Management Plan;Use fuel with ultra-low sulphur content; andA Communications Protocol and a Complaints Protocol will be developed in accordance with applicable regulatory requirements. <p><u>During Operation</u></p> <ul style="list-style-type: none">Operations of the stations along the Project alignment will be carried out in accordance with applicable regulations and standards, including Ontario's Ambient Air Quality Criteria (PIBS#6570e01) (MOE, 2012).	

4.2.8 Contamination

The management of contaminated soil and groundwater is required and may affect detailed design; property acquisitions; soil management and disposal; dewatering; construction activities; and other aspects related to the Project.

4.2.8.1 Potential Impacts

Construction

Waste and Excess Soil

Tunnelling and excavation of shafts will generate excess soil. Management of soils generated from the Project (including tunnelling muck) will be governed by *O. Reg. 406/19*, which regulates excess soils and waste generated from excavations, including from infrastructure projects. These regulations will come into effect (in part or in whole) by the time of construction of the project and define what soils generated can be re-used on-site, sent off-site for beneficial reuse, or disposed at a licensed soil treatment or disposal facility.

The additives introduced during tunnelling to stabilize muck can be a source of contamination. According to *O. Reg. 406/19*: “if the material contains a natural or synthetic polymer, the excavated soil is designated as waste” unless a qualified person has deemed the additive safe to use.

Construction Dewatering

Dewatering during construction may draw in contaminated groundwater from adjacent lands. Contaminated groundwater may require treatment before discharge into the local sewer, storm system or to the environment, subject to approval by the applicable municipality and the MECP.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-7.

Operations

The Project is not expected to result in any significant operational or maintenance-related contamination impacts.

4.2.8.2 Recommended Mitigation Measures and Monitoring

Table 4-7 presents proposed mitigation and monitoring measures to address potential impacts associated with contamination.

Table 4-7: Summary of Potential Impacts, Mitigation Measures and Monitoring: Contamination

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Potential Soil and Groundwater Contamination	Contaminated soils encountered or generated during earthworks (tunnelling and excavation).	<p><u>During Construction</u></p> <p>Escalation of cost for disposal of contamination to waste disposal sites, or transporting of excess fill to alternate reuse sites.</p> <p>Risk of contamination to environment, health and safety of workers, end-users of the project and public health.</p> <p>Discharge of contamination to environment causing adverse effect.</p> <p>Financial loss due to contaminated soil management, remediation of contaminated properties and treatment of contaminated groundwater; and</p> <p>Construction activities (e.g., excavation) could expose contaminated materials and/or result in the spreading of contaminated materials.</p>	<p><u>Prior to Construction</u></p> <ul style="list-style-type: none">Soil and groundwater investigations will be considered along project alignment, including Phase II ESA for property acquisitions. <p><u>During Construction</u></p> <ul style="list-style-type: none">Remedial action plans, risk assessment and risk mitigations plans for encountering contamination, as necessary;Identification of re-use and waste disposal sites prior to tender;Develop a Soil and Excavated Materials Management Plan for the handling, management and disposal of all excavated material (i.e., soil, rock and waste) that is generated or encountered during the work. The plan will be overseen by a QP pursuant to <i>O. Reg. 153/04</i> under the <i>Environmental Protection Act</i> and will comply with <i>O. Reg. 406/19</i> (On-Site and Excess Soil Management - to be enacted into law on July 1, 2020), the <i>MECP Management of Excess Soils: A Guide for Best Management Practices</i> (April 2019, as amended) and all applicable law. The plan will describe how to address the management of the excavated materials, imported materials, contaminated materials, and impacted railway ties, including handling, transportation, testing, documentation and reuse and disposal of excavated materials generated as part of the works and in accordance with applicable regulatory requirements;Non-soil materials, including railway bedding, railway ties, or ballast materials encountered during the earthworks will also require waste classification as documented by testing where applicable to determine management and disposal requirements as per <i>O. Reg. 347</i> (as amended) and all applicable laws and regulations; andThe Soil and Excavated Materials Management Plan will be reviewed and approved by Metrolinx prior to construction.	<p><u>During Construction</u></p> <ul style="list-style-type: none">Soil and groundwater sampling and monitoring plans shall be implemented as required by regulations prior to, during, and post construction. Track soil in 406/19 registry as required by <i>O. Reg. 406/19</i>;Monitoring discharge of groundwater; andA Soil and Excavated Material Monthly Dashboard Report will be developed by the Contractor for Metrolinx review that includes monitoring and performance data related to the management of excavated materials for the preceding month.
	Construction dewatering/ Contaminated groundwater encountered.	<p><u>During Construction</u></p> <p>Contamination encountered during dewatering.</p> <p><u>During Operation</u></p> <p>Contamination migrates onto the properties adversely impacting end users.</p> <p>Contamination migrates towards third-party and/or sensitive receptors.</p>	<p><u>During Construction</u></p> <ul style="list-style-type: none">Plan for treatment of groundwater to the appropriate discharge standards; andRemediate source contamination if the source of contamination is within project footprint. <p><u>During Operation</u></p> <ul style="list-style-type: none">Risk Management Groundwater monitoring, if required; andOther Risk Management measures may include barriers, venting or ongoing remediation, if required.	<p><u>During Construction</u></p> <ul style="list-style-type: none">Monitoring of groundwater discharges to the required standards; andA dewatering and discharge plan shall determine the monitoring requirements, subject to approved by the local municipality discharge bylaws and/or an ECA issued by MECP or an EASR under <i>Environmental Protection Act</i> (1990) and the <i>Ontario Water Resources Act</i> (1990). <p><u>During Operation</u></p> <p>Ongoing risk management monitoring including:</p> <ul style="list-style-type: none">Long term groundwater collection and treatment, prohibition of groundwater well for potable drinking purposes;Groundwater and/or soil vapour and/or indoor air sampling;Vapour barrier within building spaces to prevent vapour intrusion; andAdequate indoor air ventilation, and potentially treatment.

4.2.9 Noise and Vibration

A NVIA for the ECLRT was completed in 2010. Along the current 2020 EPR Addendum study area, the 2010 assessment determined a maximum operational noise impact of 2-3 dB above ambient noise. The 2010 vibration assessment determined surface track less than 20 m from sensitive receptors required vibration mitigation. In 2013, a new NVIA was completed to address changes to the ECLRT near Mount Dennis Station. This assessment concluded that no further noise or vibration mitigation was required for surface LRT operations. The study also assessed stationary structures including the MSF and bus station new Mount Dennis Station, and recommended mitigation accordingly. The assessment also recommended construction noise and vibration measures including vibration monitoring and site inspections for properties near construction sites.

A NVIA was prepared as part of the 2020 EPR Addendum. The report documents existing conditions (land use, noise and vibration sensitive points of reception, and baseline noise and vibration levels) and examines the noise and vibration impact of the revised project configuration, and can be found in Appendix D. To determine the impact of the Project on noise and vibrations in the community, pre-project levels have been evaluated through modelling and validated against baseline measurements.

The following provides an overview of the noise and vibration impacts associated with construction and operations in the study area. The full Noise and Vibration Impact Assessment Report including locations of noise sensitive receptors and results of the noise modelling can be found in Appendix D.

4.2.9.1 Potential Impacts

Construction

Noise

The noise impact for construction was based on the worst-case for each site with regards to the construction equipment which may be used simultaneously. For the construction activities associated with EEBs, laydown areas, station construction areas, tunnel portals, receiving shafts, and MSs, clearing activities are considered the loudest during the construction phase. Clearing typically involves removal of vegetation and designated structures, and predominantly includes the operation of:

- Hydraulic hammers;
- Large hydraulic excavators;
- Dump trucks; and
- Backhoe loaders.

For construction of LSs, ESs, and elevated tracks, lifting activities are considered the loudest during the construction phase. Lifting activities include raising and lowering of tunnelling and track construction equipment at LSs, ESs, and elevated tracks. Lifting activities predominantly include the operation of:

- Cranes;
- Hydraulic hammers;
- Large hydraulic excavators;
- Dump trucks; and
- Backhoe loaders.

Sound levels for the above equipment were determined using BSI Standard 5228-1:2009. For both clearing and lifting activities, the worst-case scenario was considered by assessing all listed equipment operating simultaneously. In this case, the sound levels are as shown in Table 4-8.

Table 4-8: Construction Activity Power Level Data (dB re: 10⁻¹² W)

	Frequency (Hz)								Overall
	63	125	250	500	1000	2000	4000	8000	
Lifting	115	115	112	108	107	109	112	105	121
Clearing	114	115	109	105	107	109	112	105	120

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-14.

Operations

Noise

The operational impact of noise resulting from the Project's surface operations and stationary sources is outlined in this section and quantified in Table 4-11. Stationary sources include stationary project infrastructure such as ventilation and traction power substations.

Surface Operations

Surface operations include noise from the Light Rail Vehicle (LRV) on exposed sections of the alignment. For electric LRV configurations, the primary source of noise is from wheel-rail contact of the LRV. Surface operations only apply to above-ground and open segments of the alignment, as LRV noise in underground segments will not produce environmental air-borne noise. Noise from the Project's surface operations in the study area is predicted to meet the requirements of the applicable TTC Protocol limits at all noise sensitive receivers. It is assumed that any future changes to the layout which could have significant impact on this assessment will be investigated as needed.

Ventilation Noise

Based on the conservative "generic" sound power emission and silencer insertion loss data used in the Noise and Vibration Assessment, the tunnel ventilation fans and underground station ventilation fans are predicted to meet the requirements of the applicable TTC Protocol limits at all noise sensitive locations.

Traction Power Substations

Based on the conservative “generic” sound power emission and silencer insertion loss data used in the Noise and Vibration Assessment, the TPSSs are predicted to meet the requirements of the applicable NPC-300 limits for stationary sources at all noise sensitive locations.

The criteria, specified in the TTC Protocol, for daytime and nighttime noise vary depending on pre-project sound levels. For this reason, the pass/fail conditions are designated numbers (e.g., “Pass (1)”, “Fail (2)”, etc.) based on Table 4-9 as applicable to the receptor.

Table 4-9: Operational LRV Pass/Fail Designation

Condition	Condition Passed/Failed	
	Daytime	Nighttime
Pass (1)	Ambient + 5 dB	Ambient + 5 dB
Fail (1)	Ambient + 5 dB	Ambient + 5 dB
Pass (2)	60 dBA	55 dBA
Fail (2)	60 dBA	55 dBA

Stationary sources present during operations for this project include TPSSs and ventilation at underground stations and tunnel portals. Stationary sources use MECPs NPC-300 guideline and thus have more stringent criteria since they constantly operate in a single location. For this reason, stationary sources are evaluated independently of LRV operations against criteria as shown below.

Similar to the LRV assessment, pass/fail conditions are designated numbers (e.g., “Pass (1)”, “Fail (2)”, etc.) based on Table 4-10 as applicable to the receptor.

Table 4-10: Operational Stationary Source Pass/Fail Designation

Condition	Condition Passed/Failed	
	Daytime	Nighttime
Pass (1)	Ambient	Ambient
Fail (1)	Ambient	Ambient
Pass (2)	60 dBA	45 dBA
Fail (2)	60 dBA	45 dBA

Table 4-11: Predicted Operational Air-borne Noise Impact on Significant Receivers after Application of Operational Mitigation

Receiver ID	Nearest Address	Ambient Noise (dBA)		LRV Only (dBA)		LRV		Stationary Sources Only, Mitigated (dBA)		Stationary Sources	
						Pass based on criteria:				Pass based on Criteria:	
				(1) Ambient +5 dB	(2) 60 dB day/55 dB night			(1) Ambient	(2) 50 dB day/45 dB night		
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Jane-4	3561 Eglinton Avenue West	63	54	50	42	Pass (1)	Pass (1)	29	29	Pass (1)	Pass (1)
Jane-5	3580 Eglinton Avenue West	69	59	52	43	Pass (1)	Pass (1)	22	22	Pass (1)	Pass (1)
Jane-6	3593 Eglinton Avenue West	66	56	53	45	Pass (1)	Pass (1)	30	30	Pass (1)	Pass (1)
Jane-7	40 Glenvalley Drive	56	47	53	45	Pass (1)	Pass (2)	31	31	Pass (1)	Pass (1)
Scar-1	75 Emmett Avenue	55	45	55	47	Pass (1)	Pass (1)	43	43	Pass (1)	Pass (1)
Scar-2	85 Emmett Avenue	56	46	55	47	Pass (1)	Pass (1)	43	43	Pass (1)	Pass (1)
Roya-1	38 Fontenay Court	67	57	62	54	Pass (1)	Pass (1)	39	39	Pass (1)	Pass (1)
Roya-2	1 Richview Road	62	53	64	56	Pass (1)	Pass (1)	37	37	Pass (1)	Pass (1)
Roya-3	30 Fontenay Court	65	55	61	53	Pass (1)	Pass (1)	38	38	Pass (1)	Pass (1)
Roya-4	20 Fontenay Court	58	49	57	49	Pass (1)	Pass (2)	34	34	Pass (1)	Pass (1)
Roya-5	25 Richview Road	59	50	59	51	Pass (1)	Pass (2)	27	27	Pass (1)	Pass (1)
Roya-6	39 Richview Road	62	52	60	51	Pass (1)	Pass (1)	39	39	Pass (1)	Pass (1)
Roya-7	55 Lemonwood Drive	63	53	57	49	Pass (1)	Pass (1)	39	39	Pass (1)	Pass (1)
Roya-8	61 Richview Road	64	54	55	46	Pass (1)	Pass (1)	34	34	Pass (1)	Pass (1)
Roya-9	81 Lemonwood Drive	66	57	53	45	Pass (1)	Pass (1)	32	32	Pass (1)	Pass (1)
Roya-11	87 Lemonwood Drive	66	57	50	42	Pass (1)	Pass (1)	35	35	Pass (1)	Pass (1)
Roya-17	1403 Royal York Road	65	56	29	21	Pass (1)	Pass (1)	48	48	Pass (1)	Pass (1)
Isli-1	185 La Rose Avenue	63	54	29	21	Pass (1)	Pass (1)	53	53	Pass (1)	Pass (1)
Isli-2	27 Edenvale Crescent	63	54	28	20	Pass (1)	Pass (1)	49	49	Pass (1)	Pass (1)
Kipl-1	1738 Islington Avenue	59	49	-	-	Pass (1)	Pass (2)	46	46	Pass (1)	Pass (1)

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Receiver ID	Nearest Address	Ambient Noise (dBA)		LRV Only (dBA)		LRV		Stationary Sources Only, Mitigated (dBA)		Stationary Sources	
						Pass based on criteria:				Pass based on Criteria:	
						(1) Ambient +5 dB	(2) 60 dB day/55 dB night	(1) Ambient	(2) 50 dB day/45 dB night		
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Kipl-2	58 Waterford Drive	60	51	-	-	Pass (1)	Pass (1)	47	47	Pass (1)	Pass (1)
Kipl-3	6 Evesham Court	51	42	-	-	Pass (2)	Pass (2)	34	34	Pass (1)	Pass (2)
Kipl-5	57 Oldham Road	61	51	-	-	Pass (1)	Pass (1)	49	49	Pass (1)	Pass (1)
Kipl-13	43 Dryden Way	67	57	-	-	Pass (1)	Pass (1)	55	55	Pass (1)	Pass (1)
Mart-1	53 Widdicombe Place	61	51	-	-	Pass (1)	Pass (1)	47	47	Pass (1)	Pass (1)
Mart-9	4679 Eglinton Avenue West	63	55	-	-	Pass (1)	Pass (1)	55	55	Pass (1)	Pass (1)
Mart-10	50 Winterton Drive	60	52	-	-	Pass (1)	Pass (1)	47	47	Pass (1)	Pass (1)
Grey	indicates criteria that was met as a result of mitigation.										
“-“ levels lower than 0 dB and considered in-audible.											

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-14.

Construction

Vibration

Vibration

Construction vibration is assessed to avoid building damage in compliance with CoT By-Law 514-2008. To ensure compliance with the By-Law, a Zone of Influence (ZOI) of construction equipment was specified based on 5 mm/s vibration peak levels for all buildings with the exception of cultural heritage buildings, which were assessed against 3 mm/s. The ZOI was specified extending from the perimeter of each construction site to identify all structures that may experience vibration levels above the specified peak limits. Where the construction vibration ZOI overlapped a building, continuous vibration monitoring was specified as a requirement. Where the vibration ZOI overlapped a property line, but not a building, pre-construction inspections were specified as shown in Table 4-12. The vibration ZOI shall be confirmed in a future phase of this report as the construction sites are subject to change.

Vibratory roller operation was determined to be the highest emitting vibration source at all surface and above-ground construction sites. The tunnel boring machine was considered the highest emitting vibration source for all underground construction. The vibratory roller and tunnel boring machine are expected to produce vibration damage zones of influence of 8 m and 6.5 m, respectively, for 5 mm/s peak vibration.

Continuous vibration monitoring and pre-construction inspections will be required for specific locations near construction sites. The assessment in Appendix D determined that zero buildings require continuous vibration monitoring, and three buildings requirement pre-construction inspections as shown in Table 4-12.

Table 4-12: Properties Requiring Pre-Construction Inspections

Construction Zone	Intersection	Property Address
Scarlett Station	Scarlett Road	1 Richview Road
Royal York Station	Royal York Road	4200 Eglinton Avenue West
TPSS-3	Islington Avenue	57 Oldham Road

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-14.

Operations

Vibration

Operational vibration was assessed from the LRV applying the General Assessment method outlined by the FTA. Contours were calculated to display the area surrounding the tracks which experiences vibrations above the 0.1 mm/s Root-Mean-Square (RMS) specified in the TTC Protocol. To align with FTA, vibration velocity was converted to VdB (re: 1 µin/sec), such that 72 VdB equals 0.1 mm/s RMS. The vibration calculation spreadsheet and contour plots are presented in Appendix D.

The Project alignment was assessed at 100 m intervals following the designated chainage markers. Much of the Project study area is dense residential space including both single family homes and multi-family homes (e.g., apartments). There are four sections of the alignment where vibrations are expected surpass allowable limits, primarily due to the alignment's proximity to residences. The specific sections of the alignment that surpass the limits are outlined in Table 4-12. The table compares two criteria:

- The source-receptor distance: the distance between project tracks and the closest sensitive receptor within the given chainage, and
- The 0.1 mm/s vibration/noise contours: the distance at which the vibration has attenuated to 0.1 mm/s.

By these criteria, if the source-receptor distance is less than the 0.1 mm/s noise contour distance, then the receptor is within the 0.1 mm/s noise contour. In this case, the receptor experiences vibrations greater than 0.1 mm/s RMS and is therefore out of compliance per the TTC Protocol. These cases are listed in Table 4-13, and mitigation is applied following guidance in the TTC Protocol. Mitigation is described in Table 4-14. A variety of mitigation measures are available to reduce vibration levels at these locations to within regulatory limits. The specific mitigation measures to be implemented will be confirmed during detailed design.

Table 4-13: Chainage Sections that Surpass Vibration Limits of 72 VdB (0.1 mm/s RMS)

Chainage*	Segment Description	Vibration Limit (VdB)	Noise Limit (VdB)	Source-Receptor Distance** (m)	0.1 mm/s Vibration Contour (m)	0.1 mm/s Noise Contour (m)
105+500	Underground, in soil	72	35	13	18	23
105+400	Underground, in soil	72	35	13	18	23
105+300	Underground, in soil	72	35	15	18	23
105+200	Underground, in soil	72	35	14	18	23
102+400	Underground, in soil	72	35	28	25	31
100+900	Underground, in soil	72	35	26	25	31
100+800	Underground, in soil	72	35	25	25	31
99+800	Underground, in soil	72	35	22	17	22
99+700	Underground, in soil	72	35	19	17	22

* Indicates upper-bound chainage (e.g., chainage 99+700 indicates the section between 99+600 and 99+700).

** Considers depth of track, assuming 3 m depth for receptor basements.

4.2.9.2 Recommended Mitigation Measures and Monitoring

Table 4-14 presents proposed mitigation and monitoring measures to address potential impacts associated with noise and vibration.

Table 4-14: Summary of Potential Impacts, Mitigation Measures and Monitoring: Noise and Vibration

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Noise and Vibration	Potential Noise Impacts	<p><u>During Construction</u></p> <p>Excessive noise from construction activities may result in community annoyance during daytime and more significantly during nighttime construction.</p> <p><u>During Operation</u></p> <p>Excessive noise from operations resulting in community annoyance, particularly for 24/7 operations of auxiliary equipment (e.g., station ventilation and TPSSs).</p> <p>If operations of rolling stock are projected to cause a 5-dB increase or greater to the adjusted noise impact relative to the existing noise level or 55 dBA for daytime and 50 dBA for night-time, whichever is higher, then mitigation is required as per TTC Protocol.</p> <p>If operations of stationary sources are projected to exceed the 1-hour average energy equivalent noise (referred to as “Leq_{1hr}”) of the background or 50 dBA for the daytime or 45 dBA for the night-time, whichever is higher, then mitigation is required as per MECP NPC-300.</p>	<p><u>Prior to Construction</u></p> <ul style="list-style-type: none">• The Contractor will develop and submit a detailed Construction Noise Management Plan to Metrolinx. The Construction Noise Management Plan shall:<ul style="list-style-type: none">• Document and commit to all measures to be taken for meeting the noise exposure limits documented in the Metrolinx <i>Guide for Noise and Vibration Assessment</i> (2019) at every directly exposed sensitive receptor and throughout the entire project;• Determine the ZOI for construction related noise based on the noise exposure limits outlined in the Metrolinx <i>Guide for Noise and Vibration Assessment</i> (2019) 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 ZOI 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 ZOI for construction related noise, then the following shall apply:<ul style="list-style-type: none">• Additional mitigation is proposed and subsequently modelled until the sensitive receptor does not fall within the ZOI; or• If mitigation strategies are deemed by Metrolinx to be not viable, receptor based mitigation will be proposed.• Where additional work sites are identified which were not assessed as part of the <i>4Transit Noise and Vibration Impact Assessment</i> or where construction activities at any given site differ from those considered in this report, the Contractor will conduct modelling to evaluate the need for additional noise barriers and submit results and recommendations as part of the Noise Management Plan. <p><u>During Construction</u></p> <ul style="list-style-type: none">• Minimize construction noise by implementing temporary acoustic barriers, specification of quieter equipment, site traffic routing and other site-based and receptor-based controls where necessary;• Comply with the noise impact and assessment criteria outlined in the applicable TTC Protocol and MECP NPC-300 guidelines;• Limiting nighttime activity and scheduling quieter tasks such as welding, inventory, site re-arrangement, to occur at night;• Employing broadband back-up beepers. Designing construction sites to optimize driving in and driving out, to reduce the need to back-up;• Prohibition of engine idling;• Minimizing metal to metal impacts such as dump truck gate slamming, percussion piling, using the bucket of excavators to pile shore panels and alike; and	<p><u>During Construction</u></p> <ul style="list-style-type: none">• The Construction Noise Management Plan will incorporate the following requirements related to monitoring of noise and noise related complaints:<ul style="list-style-type: none">• The Contractor will monitor noise where the Construction Noise Management Plan indicates potential for elevated noise levels. At these locations, the Contractor will 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;• The Contractor will submit weekly reports to the Metrolinx 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 <i>Guide for Noise and Vibration Assessment</i> (2019) were exceeded, the probable cause of each exceedance, the incident-specific measure(s) implemented, the resulting mitigated noise levels and the complaints investigation procedure; and• Establish a Communications Protocol and a Complaints Protocol. <p><u>During Operation</u></p> <ul style="list-style-type: none">• Ensure acoustic mitigation on specified station ventilation and TPSSs are upkept; and• Ensure acoustic barriers are upkept and in good condition.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<ul style="list-style-type: none">Regular maintenance of temporary, underground track used to support tunnelling and underground construction (welding sections, minimizing gaps, reduced speeds) in areas close to anticipated complaint locations. <p><u>During Operation:</u></p> <ul style="list-style-type: none">Minimize operational noise to meet NPC-300 requirements by implementing acoustic mitigation on specified station ventilation and TPSSs; andMeet the ground-borne (vibration induced) noise exposure criteria in the US FTA Report No. 0123, <i>Transit Noise and Vibration Impact Assessment Manual</i> (2018).	
	Potential Vibration Impacts	<p><u>During Construction</u></p> <p>Excessive vibration resulting from construction equipment may result in building damage and/or annoyance. Sources include tunnel boring machine shuttle locomotive, impact piling, impact shoring panel installation, vibrator rollers for grading.</p> <p><u>During Operation</u></p> <p>Excessive vibration resulting from transit operation may result in community annoyance.</p>	<p><u>During Construction</u></p> <ul style="list-style-type: none">A detailed Construction Vibration Management Plan shall be developed and implemented which should consider the following:<ul style="list-style-type: none">Limiting the construction activity timing to periods that would result in lesser disruptions to residences, to the extent possible (e.g., late morning and early afternoon on weekdays);Extending the operation distance of heavy vibratory equipment away from the complaint location and using smaller vibratory equipment in closer proximity;Regular maintenance of temporary track used for tunnelling (welding sections, minimizing gaps, reduced locomotive speeds) in areas close to anticipated complaint locations;Deploy mitigation recommended in the 4Transit NVIA. Review and update the vibration assessment during the design of new infrastructure at relevant representative receptor locations to ensure compliance with the vibration exposure criteria in the MOEE/TTC Protocol;Adhere to the following vibration exposure limits:<ul style="list-style-type: none">Construction vibration, as a human irritant, is assessed in terms of its average level. Vibration velocity should not exceed 0.14 mm/s or current conditions (whichever is higher); andAs a threat to buildings, vibration is assessed in terms of its peak value. The ZOI for vibration shall be the area where structures are expected to experience vibration peak particle velocities that exceed 5 mm/s. Vibration velocity should be limited to 8-22 mm/s, depending on vibration frequency. These limits are prescribed by the CoT By-Law No. 514-2008 for typical structures (not building with special needs). <p><u>During Operation</u></p> <ul style="list-style-type: none">Implement measures to reduce vehicle speed in areas of concern, changes to operational sequence and changes to project layout or access;Special Track Support Systems: floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats;Maintenance measures: optimal maintenance, wheel-flat detectors, and track continuity;Rolling stock specifications: un-sprung vehicle mass, suspension system design, wheel design, brake system design;Adhere to the ground-borne (vibration induced) noise exposure criteria in the US FTA Report No. 0123, <i>Transit Noise and Vibration Impact Assessment Manual</i> (2018); and	<p><u>During Construction</u></p> <ul style="list-style-type: none">Pre-construction building inspection for buildings adjacent to the construction sites are to be undertaken. Where the vibration ZOI overlaps adjacent buildings and structures, continuous vibration monitoring along the construction zone property lines closest to these structures will be initiated;Conduct ground-borne vibration monitoring to check compliance and to inform decisions;Assess vibration performance regularly to check compliance and to inform decisions;The Construction Vibration Management Plan will incorporate the following requirements related to monitoring of vibration and vibration related complaints;The Contractor is to monitor vibration continuously at highly sensitive structures where the Construction Vibration Management Plan deems appropriate or as requested by Metrolinx;The type of vibration monitoring program that is established is based on the extent of the vibration ZOI and the position of the nearest structure in relation to the ZOI;Monitoring can be continuous throughout the project or during the most impactful phases when structures are identified within the ZOI; andEstablish a Communications Protocol and a Complaints Protocol. <p><u>During Operation</u></p> <ul style="list-style-type: none">Up-keep of installed track level vibration controls.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<ul style="list-style-type: none">Develop and implement a detailed Construction Vibration Management Plan for Metrolinx review and approval with minimum requirements outlined below:<ul style="list-style-type: none">Complete a detailed construction related vibration assessment prior to the commencement of construction that includes assessment of the vibration ZOI. The ZOI for vibration shall be established by using the methodology and input data provided in Section 7.2 of the US FTA Report No. 0123 (2018), Transit Noise and Vibration Impact Assessment Manual (2018);Complete pre-construction condition surveys for properties within the vibration ZOI of the planned work to establish their condition and establish a baseline prior to any work beginning;Identify any heritage structures and other sensitive structures, buildings or infrastructure vulnerable to vibration damage, assess requirements and, if necessary, develop mitigation measures;Identify buildings, where vibration sensitive activities such a sound recording or medical image processing take place, assess requirements and, if necessary, develop mitigation measures;Establish a 15 m setback distance between the construction vibration source and nearby buildings, where possible, to minimize impacts. If this is not possible, then monitor the vibration levels associated with the activity;Select construction/maintenance methods and equipment with the least vibration impacts; andIn the presence of persistent complaints and subject to the results of a field investigation, identify alternative vibration control measures, where reasonably available.	

4.3 Socio-Economic Environment

4.3.1 Socio-Economic

4.3.1.1 Potential Impacts

Construction

The Project may potentially impact existing property parcels resulting from the alignment, station and construction activities. Property requirements will be confirmed during the next design phase and affected property owners will be engaged as project planning and design advance.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-15.

Operations

The Project is not expected to result in any significant operational or maintenance-related socio-economic impacts.

4.3.1.2 Recommended Mitigation Measures and Monitoring

Table 4-15 presents proposed mitigation and monitoring measures to address potential socio-economic impacts.

Table 4-15: Summary of Potential Impacts, Mitigation Measures and Monitoring: Socio-Economic

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Socio-Economic	Property Requirements.	<u>During Construction</u> Property will be required to facilitate station construction activities.	<u>Prior to/During Construction</u> <ul style="list-style-type: none">Property requirements will be confirmed during design. Where access to property is required, on-going consultation with affected landowners will identify appropriate site specific mitigation measures;When property purchase is required, standard property purchase procedures will be followed; andSelect construction areas in accordance with Metrolinx procedures. Construction areas should be located in areas that minimize adverse effects to sensitive receptors.	<u>During Construction</u> <ul style="list-style-type: none">Follow Metrolinx guidance with respect to monitoring requirements at construction areas.
	Driveway and Side Street Access.	<u>During Construction</u> Temporary closures of driveways and side streets may be required to facilitate construction. <u>During Operation</u> Permanent alterations to driveway and side streets may be required for elevated and at-grade sections.	<u>During Construction</u> <ul style="list-style-type: none">Access to all driveways will be maintained during construction where possible. When temporary closures of side-streets are required, appropriate detour signage will be installed and all affected property owners shall be consulted. <u>During Operation</u> <ul style="list-style-type: none">Access to driveways and side streets will be restored to the greatest extent possible if changes are required.	<u>During Construction</u> <ul style="list-style-type: none">Temporary access to driveways and sidewalks should be monitored.
	Development Projects.	<u>During Construction</u> Compatibility with on-going and future development sites will require extensive review and coordination. <u>During Operation</u> None anticipated, provided on-going development projects are considered in the design and construction process.	<u>Prior to and During Construction</u> <ul style="list-style-type: none">Detailed review of proposed development applications outlined in Appendix E should be completed during the design process to minimize site impacts and determine feasible methods of design integration where needed; andConsideration should be given to compatibility with on-going and future development sites within the project area. <u>During Operation</u> <ul style="list-style-type: none">None anticipated.	N/A

4.3.2 Existing Land Use/Community Features

4.3.2.1 Potential Impacts

Construction

Implementation of the proposed stations will present impacts to existing land uses and the existing transportation system during construction activities. It is expected that Martin Grove Station, Kipling Station, Islington Station, Royal York Station and Scarlett Station may have the greatest impacts compared to other locations due to nearby sensitive residential land uses and urbanized environments.

Implementation of the Project will require temporary staging areas to facilitate construction of the alignment including stations, tunnels, portals, above ground alignments and supporting infrastructure. Preliminary areas which may be required to facilitate staging activities will be further refined as the design progresses. An overview of the anticipated impacts resulting from overall construction staging activities are discussed below.

Construction activities within a close proximity to Mount Dennis Station will be in a highly urbanized area which may also impact sensitive residential uses and driveway access.

Construction surrounding Jane Station, including the portal to Mount Dennis Station, may include parks and open space areas. Accordingly, there may be temporary disruptions to these uses. Driveways along Eglinton Avenue West that may be impacted by the design include the driveway to Fergy Brown Park and Gladhurst Park/Eglinton Flats Tennis Centre. Coordination with the CoT Parks, Forestry and Recreation division would be required should these land uses be impacted. Access to Scarlett Woods Golf Course and Emmett Avenue will also be a consideration.

Between Martin Grove and Scarlett Station, construction has the potential to be in close proximity to sensitive residential uses and may impact on-going and future development projects. There will be additional considerations to accommodate users of adjacent community amenities including Richview Collegiate Institute and Martin Grove Collegiate Institute including the mitigation of noise, air quality and vibration impacts during construction.

In the western portion of the study area near the Renforth Station, vacant parcels of land would be required for construction areas. Construction would be at a far offset from sensitive residential uses.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-16.

Operations

The elevated guideway between the Scarlett Station area and east of Jane Station will have a permanent impact on the public realm since it will be several metres above ground, particularly around Scarlett Station where there are sensitive residential uses. The proposed guideway will need to be sensitive to existing uses and minimize noise impacts where possible. The underground portal for the west limit of the elevated guideway may also impact

the existing pedestrian bridge west of Scarlett Road which will need to be considered during the design process.

The alignment in the section of the study area surrounding the proposed Renforth Station will be located on mostly vacant land, portions of which have recently been utilized for the addition of the Mississauga Transitway. It is expected the portal and station within this area would have less impacts to sensitive uses, however the alignment through future employment areas may present a longer-term impact on the ability of these lands to be used for intended purposes of the CoT and CoM Official Plans, including the current development application at 2882 Matheson Boulevard East and any future developments at 5015 Commerce Boulevard/2950 Citation Place.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-16.

4.3.2.2 *Recommended Mitigation Measures and Monitoring*

Table 4-16 presents proposed mitigation and monitoring measures to address potential impacts associated with existing land use and community features.

Table 4-16: Summary of Potential Impacts, Mitigation Measures and Monitoring: Land Use and Community Features

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Land Use/ Community Features	Nuisance effects from construction activities.	<u>During Construction</u> Air Quality. Noise and Vibration. Light Pollution. ESC.	<u>During Construction</u> <ul style="list-style-type: none">Implement mitigation measures related to potential nuisance effects associated with Air Quality in Table 4-6 and Noise and Vibration in Table 4-14 outlined above;Develop a plan to reduce the effects of light pollution; andDevelop a Communications and Complaints Protocol, 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.	<u>During Construction</u> <ul style="list-style-type: none">When applicable, monitoring related to potential nuisance effects are outlined in the Air Quality (Table 4-6) and Noise and Vibration (Table 4-14) commitment tables; andNumber and resolution of complaints received.
	Disruption to Institutional Uses, Places of Worship, Community Groups and Resources, including Access.	<u>During Construction</u> Potential for disruption in access during construction. <u>During Operation</u> May experience noise and vibration due to regular operations and maintenance.	<u>During Construction</u> <ul style="list-style-type: none">Ensure access to key land uses such as Richview Collegiate Institute and Martin Grove Collegiate Institute are maintained during construction activities and noise, air quality and vibration impacts are minimized during construction. Consult with area stakeholders including the Toronto District School Board during the development of construction management plans to accommodate users of these facilities;Provide well connected, clearly delineated, and appropriately signed walkways and cycling route options, with clearly marked detours where required;Provide temporary lighting and wayfinding signs and cues for navigation around the construction site; andAccess to businesses during working hours will be maintained, where feasible. Where regular access cannot be maintained, alternative access and signage will be provided. <u>During Operation</u> <ul style="list-style-type: none">Operations to be carried out in accordance with applicable regulations and standards. Identify opportunities for mitigation using best practices where possible.	<u>During Construction</u> <ul style="list-style-type: none">Temporary access paths, walkways, cycling routes and fencing should be monitored; andMonitor the number of complaints received, and the resolutions.
	Impacts to Access of Designated Natural Areas and Parks.	<u>During Construction</u> Potential for disruption in access, particularly for parks on the east side of Jane Street where the eastern portal will be located. <u>During Operation</u> Potential for permanent alteration of the existing road network in areas which feature surface or elevated alignments.	<u>During Construction</u> <ul style="list-style-type: none">Maintain access to all parks and open spaces during construction activities. When temporary closures of access routes or parks and/or open spaces are required, appropriate detour and temporary closure signage will be installed and affected stakeholders shall be consulted. <u>During Operation</u> <ul style="list-style-type: none">Access to parks and open spaces will be restored to the greatest extent possible if changes are required.	<u>During Construction</u> <ul style="list-style-type: none">Temporary access paths, walkways, cycling routes and fencing should be monitored should temporary closures be identified.

4.3.3 Utilities

4.3.3.1 Potential Impacts

Construction

The Project has potential to impact several existing utilities within the study area including both aerial and subsurface utilities such as hydro, gas, water, sanitary, storm and telecommunications. SUE investigations are on-going and will be considered during further stages of design work and coordination with all applicable utility companies. Potential utility impacts at specific segments of the alignment are provided in Table 4-17.

Table 4-17: Summary of Potential Utility Impacts

Location	Description of Potential Utility Impact
Underground Station Locations	The intersections of Eglinton Avenue West and Martin Grove, Kipling, Islington, and Royal York Roads all contain a high density of private and public utilities. As these intersections are planned for underground stations, utility impacts will be highly dependent on station locations with more severe utility impacts occurring with the station(s) placed closer to the center of the intersections. "On road" station placement poses a larger utility impact than "off road" station placement. Station placements are more favorable with off road placements on the NW, NE, SE, SW corners of the intersections. The next most favorable station placements are located "on road" on the N, S, E, W legs of the intersection and the least favorable station placements are at the center of the intersection.
Jane Station	The Jane Street and Eglinton Avenue West intersection contains several public and private utilities including water, storm, gas, telecommunication, traffic signals and hydro. Some potential utility impacts include a 600 mm storm sewer, 450 mm water main, 300 mm Enbridge gas main, overhead and underground Hydro, Street lighting, underground Bell and Aptum services.
Scarlett Station	The Scarlett Road and Eglinton Avenue West intersection contains a high density of public and private utilities including water, sanitary, storm, traffic signals, gas, telecommunications, and hydro. Some potential utility impacts include a 150 mm Enbridge gas main, 200 mm watermain, 250 mm sanitary, 675 mm storm sewers, street lighting and overhead Hydro services.
Scarlett Portal and Extraction Shaft	The Scarlett Portal located along Eglinton Avenue West between the Royal York and Scarlett intersections contains several public and private utilities including water, storm, sanitary, gas, telecommunication, and hydro. Some potential utility impacts include a 675 mm storm sewer, street lighting and underground Rogers services.
Road Re-Alignment at Eglinton Avenue West and Scarlett Road	Considering the construction of the associated infrastructure at this location, several existing utilities will have to be either

Location	Description of Potential Utility Impact
	temporarily or permanently removed, relocated, or protected. Some of the potential utility impacts include a 760 mm Enbridge gas main, 675/750 mm storm sewers, Street lighting, Underground Hydro and Rogers services.
Royal York Station	The Royal York and Eglinton Avenue West intersection contains a high density of public and private utilities including water, storm, traffic signals, gas, telecommunication, and hydro. However, with the location of the station being on the North West corner of the intersection, utility relocations are being avoided and the only foreseen impact at this time would be underground Rogers fibre cable services.
Islington Station and Maintenance Shaft	The Islington and Eglinton Avenue West intersection contains a high density of public and private utilities including water, storm, traffic signals, gas, telecommunication, and hydro. Similar to Royal York Station, the proposed placement of the future station will avoid a dense utility relocation. The foreseen utility impacts at this time are underground and overhead Hydro services.
Kipling Station	The Kipling and Eglinton Avenue West intersection contains a high density of public and private utilities including water, storm, sanitary, traffic signals, gas, telecommunication, and hydro. The proposed location of Kipling station on the West side of the Intersection will have some critical utility impacts including a 762 mm Enbridge vital high-pressure gas main, 750/900 mm storm sewer, 500 mm watermain and buried Hydro and Bell services.
Martin Grove Station	The Martin Grove and Eglinton Avenue West intersection contains a high density of public and private utilities including water, storm, sanitary, traffic signals, gas, telecommunication, and hydro. The proposed location of the station on the north-east side of the intersection will have an impact on a 1200 mm water transmission main.
Renforth Station & Renforth Portal and Launch Shaft	<p>Renforth Station, Portal and LS are located between Renforth Drive and Commerce Boulevard and potential utility impacts include underground Hydro and telecommunications (Rogers, Zayo, and Aptum), 100 mm gas main, streetlighting, 300 mm watermain, 250 mm sanitary, 675 mm storm, 300 mm storm, 925 mm storm on Renforth, overhead Hydro, 900 mm storm, twin storm boxes (1.5 m x 3 m) and a 2000 mm Oil Grit Separator in the MiWay area.</p> <p>Adjacent municipal and private utilities including storm sewers, sanitary sewers, telecommunications, and hydro may require temporary relocation and protection during construction since the portal and LS will require a large temporary construction laydown area (trailers, parking, access road, temporary services, etc.) and will be a highly dense construction activity associated</p>

Location	Description of Potential Utility Impact
	with tunnelling and tunnel boring operations (excavation, dewatering, muck management, equipment, etc.).
Emergency Exit Buildings	<p>The Project alignment specifies up to six EEBs along the twin bore tunnel portion of the track alignment. EEBs may require two headwalls to be constructed, and would be located on either side of the proposed EEB. The presence of the headwalls will create a conflict with existing utilities in the corridor as they will need to be constructed at surface level and extend down to the depth of the tunnel itself. EEBs could have conflicts with existing private and public utilities. Potential public utility conflicts include water mains, storm sewers, and streetlighting. Potential private utilities conflicts include gas mains, telecommunication cables (Bell/Rogers), and underground and above ground hydro (Toronto Hydro Energy Services) These utilities would be subjected to temporary or permanent relocations or be put under temporary or permanent protection to facilitate EEB headwall construction. EEBs may also be located in or near existing roadways as well as require construction areas which may warrant temporary road realignments and require additional areas to be impacted.</p> <p>Anticipated Critical impacts include a 1000 mm transmission watermain at EEB-1 (east of the Eglinton Avenue West and Royal York Intersection) and a 760 mm Vital gas main at EEB-3 (east of the Eglinton Avenue West and Bemersyde intersection). The potential impacts will be during construction and protection will be required.</p>

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-18.

Operations

The Project is not expected to result in any significant operational or maintenance-related utility impacts.

4.3.3.2 Recommended Mitigation Measures and Monitoring

Table 4-18 presents proposed mitigation and monitoring measures to address potential impacts associated with utilities.

Table 4-18: Summary of Potential Impacts, Mitigation Measures and Monitoring: Utilities

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Utilities	Utility serviceability effects due to design requirements and construction. Impacts to Municipal and Private utilities along Eglinton Avenue West between Jane Street and Commerce Boulevard.	<u>During Construction</u> Municipal and private utilities will be impacted by the project. Traffic, roads and ROW will be impacted during construction. Noise and vibration will be encountered during utility relocations and associated construction works. Some temporary services interruption could be expected during utility relocations, new utility connections to the network and utility infrastructure upgrades.	<u>Prior to Construction</u> <ul style="list-style-type: none">Where new utility crossings are proposed, application for a new utility crossing agreement will be required. Where modifications to an existing utility crossing takes place, updates to an existing utility crossing will be needed. <u>During Construction</u> <ul style="list-style-type: none">Utilities located within the underground section will be avoided to the extent possible through design and tunnelling alignment;In areas of C&C construction, utilities in direct conflict will be, in coordination with the respective utility owner, permanently relocated and protected during construction;Utilities that are not in direct conflict will be either be protected, temporarily supported, or temporarily relocated during construction;Trenchless installation methods will be investigated to minimize open cut utility construction;Services will be maintained to the extent possible during relocation and notice of planned service interruptions will be provided to service users prior to interruptions;A detailed Utility Infrastructure Relocation Plan (UIRP) will be developed and implemented. The UIRP shall identify all utilities anticipated to be impacted by the construction works, all relevant utility agencies and authorities, and outlines the approach to the utility relocation process;Additional surveys shall be performed prior to construction to field locate and verify the existing utilities within the project area and document their condition;Perform all work identified in the UIRP to protect, support, safeguard, remove, and relocate all Utility Infrastructure;Obtain permits from applicable Utility Companies with respect to the design, construction, installation, servicing, operation, repair, preservation, relocation, and or commissioning of Utility Infrastructure; andMinimize impact to the traffic, transportation services, and disruption to property owners and customers to the extent possible in consultation with affected utility companies, CoT, CoM, TTC, MiWay, and Metrolinx. <u>Post Construction</u> <ul style="list-style-type: none">Post- construction inspections of the new utility infrastructure shall be undertaken for applicable works upon completion of the construction works to document condition; andObtain as-built plans of the relocated infrastructure from utility agencies per as-built preparation standards Canadian Standard Association S250-11 - <i>Mapping of Underground Utility Infrastructure</i> (2011), as amended from time to time.	<u>During Construction</u> <ul style="list-style-type: none">For all utilities that will be relocated, relocation plans and construction activities will be undertaken in accordance with the <i>Road Rights of Way Act</i> and the City's <i>Requirements for the Installation of Services within the CoT & CoM Road Allowance</i>;As required by the utility companies, critical utility infrastructure will be monitored during the tunnelling and structure construction activities to prevent settlement and damage to assets;Prior to the start of construction, the contractor shall provide Metrolinx with all the necessary detailed design and construction information to pursue the required utility crossing agreements with the affected utility companies;Maintain regular communication and coordination through issuance of regular progress reports and updates to applicable utility agencies;Contractor will record all installation tolerances and how they are to be monitored; andPerform inspection and testing to ensure successful utility relocation and safe and efficient installation; <u>Post Construction</u> <ul style="list-style-type: none">Develop and implement tracking system for as-built deliverables.

4.4 Cultural Environment

4.4.1 Archaeology

4.4.1.1 Potential Impacts

Construction

The Stage 1-2 Archaeological Assessment completed for the 2020 EPR Addendum has identified areas of archaeological potential within the area of impact that will require further Stage 2 archaeological assessment prior to construction impacts, as shown in Figure 3-6 (A-E). The Stage 2 archaeological assessment will be completed by test pit survey, which entails excavation of test pits every 5 m across the area of impact. All soils will be screened and examined for archaeological materials. If archaeological materials are recovered during the Stage 2 assessment, a determination will be made whether they hold sufficient cultural heritage value or interest to require additional (Stage 3) archaeological assessment. If Stage 3 archaeological assessment is required, test units will be excavated at a 5 m interval to identify the limits of the archaeological site.

As part of the Stage 1-2 Assessment, a property inspection was completed for the Project and 150 m buffer study area by a licensed archaeologist to determine current conditions of the study area and identify areas of archaeological potential. Additionally, a Stage 2 Archaeological Assessment was completed by test pit survey at a 5 m interval for two small areas within the study area that were to be affected by borehole excavation.

Of note, the Richview Cemetery is located within the study area limits and project impacts should avoid Richview Cemetery. Should impacts to Richview Cemetery be unavoidable, a Stage 2 archaeological assessment by test pit and a Stage 3 cemetery investigation within the cemetery limits is required to determine the presence or absence of archaeological materials or graves prior to any impacts. Permission from the cemetery owner and an Investigation Authorization from the Bereavement Authority of Ontario should be sought prior to any disturbance to the cemetery. Impacted lands within 10 m of Richview Cemetery shall also be monitored by a licensed archaeologist for the presence of burials and archaeological remains during construction.

Archaeological recommendations have been made based on historical research, locations of known or registered archaeological sites, previous Archaeological Assessments, indicators of archaeological potential, the property inspection, as outlined in Section 1.3.1 of the 2011 *Standards and Guidelines for Consultant Archaeologists* (S&G), as well as the results of the Stage 2 Archaeological Assessment. These recommendations are:

1. Portions of the Project study area hold archaeological potential and areas that will be impacted will require a Stage 2 test pit survey at five metre intervals per Section 2.3.2 of the 2011 S&G (see Figure 3-6);
2. No archaeological materials were recovered during the Stage 2 test pit survey for BH39 and BH40 and therefore no further assessment is required within these areas (see Figure 3-6);

3. The Richview Cemetery is located within the study area limits and should be subject to the following recommendations (see Figure 3-6):
 - A. Project impacts should avoid Richview Cemetery (see Figure 3-6);
 - B. Should impacts to Richview Cemetery be unavoidable, a Stage 2 Archaeological Assessment by test pit survey as per Section 2.3.2 of the 2011 S&G followed by a Stage 3 Cemetery Investigation within the cemetery limits is required to determine the presence or absence of archaeological materials or graves prior to any impacts. Permission from the cemetery owner and an Investigation Authorization from the Bereavement Authority of Ontario should be sought prior to any disturbance to the cemetery; and
 - C. Impacted lands within 10 m of Richview Cemetery must be monitored by a licensed archaeologist for the presence of burials and archaeological remains. An Investigation Authorization from the Bereavement Authority of Ontario should be sought prior to any disturbance adjacent to the cemetery.
4. Areas determined to be disturbed and previously assessed lands that were deemed clear from further assessment do not require further Archaeological Assessment, and
5. If the final limits of the Project study area are altered and fall outside the current study area, an additional Stage 1 Archaeological Assessment is required to assess the new footprint.

No ground disturbing activities shall take place within the study area prior to the receipt of written confirmation from the MHSTCI that all archaeological requirements have been met.

In the event that archaeological remains are discovered during construction activities, the consultant archaeologists, Metrolinx, and the MHSTCI should be notified immediately.

Figure 3-6 (A-E) illustrates the findings of the archaeological assessments completed previously and as part of this Addendum study. Figure 3-6 (A-E) also outlines the areas identified as holding archaeological potential, therefore requiring Stage 2 Archaeological Assessment by test pit survey prior to construction impacts to be completed during, and prior to the completion of, detail design and well in advance of any ground disturbance activities.

The Stage 1-2 Archaeological Assessment Report completed as part of the 2020 EPR Addendum was submitted to the MHSTCI on April 23, 2020 to ensure the Ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licences. Upon the completion of MHSTCI's review, a letter of concurrence will be issued and the Stage 1-2 Archaeological Assessment Report will be entered into the Ontario Heritage Registrar. All impacted areas will be cleared of archaeological potential prior to the start of construction.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-19.

Operations

The Project is not expected to result in any significant operational or maintenance-related archaeological impacts.

4.4.1.2 *Recommended Mitigation Measures and Monitoring*

Table 4-19 presents proposed mitigation and monitoring measures to address potential impacts associated with archaeology.

Table 4-19: Summary of Potential Impacts, Mitigation Measures and Monitoring: Archaeology

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Archaeology	Areas identified as holding archaeological potential within the potential impact area (alignment, shaft access areas).	<u>During Construction</u> <ul style="list-style-type: none">Ground disturbing construction activities (e.g., utility relocation works, staging area preparation and use, tunnelling, machinery crossing areas, machinery parking, storage areas) could disturb or destroy archaeological resources.Potential to impact cemetery located in proximity to the Project footprint.	<u>Prior to/During Construction</u> <ul style="list-style-type: none">Performance of the work will occur within land previously subject to a Stage 1 Archaeological Assessment;Should impacts or additional property be required outside of the study corridor and buffer area, additional Stage 1 archaeological assessment may be required;Outstanding stages of archaeological assessment, including Stage 2 along with any Stage 3 and Stage 4 work arising from the previous stages' recommendations, will be completed for all areas determined to have archaeological potential, as indicated in Figure 3-6 (A-E) as early as possible and prior to the completion of detail design and well in advance of any ground disturbing activities;Based on correspondence between Metrolinx and MHSTCI, and contingent on agreement from engaged Indigenous Communities, the following approach for subsequent Stage 2 archaeological assessment is acceptable (does not apply to any discovery of human remains):<ul style="list-style-type: none">For those areas where the tunnelling alignment occur at a depth of 5 m from the ground surface or below (including a buffer at any of the entry/egress points) and no surface impacts will occur, Stage 2 assessment is only required at the entry/egress points, mid-route access points, and all areas of surface impacts, including machinery set up, parking, access, storage, etc.;Any surface impacts or the extent of the tunnelling that will be less the 5 m below surface will require a Stage 2 assessment;No impacts that is less than 5 m depth shall take place within the "avoided" area during the lifetime of the project/service, which includes but not limited to, emergency works, maintenance, decommissioning, etc.;For any segments where Stage 2 is not completed due to tunnelling, the reporting will require mapping of the crossing (plans and profiles) for the avoided un-surveyed areas, documentation confirming that no impacts will occur within 5 m of the surface of the area being "avoided" through the lifetime of the project/service, documentation of the engagement process for the strategy, the engineer's sign-off regarding the risks of unplanned impacts associated with the tunnelling work, a comment on the contingency plan should unplanned impacts occur and the detailed recommendations for the "avoided area";The two archaeological sites (i.e., Hunter and Roseland) within 50 m from the study area that must be taken into consideration. A Stage 2 assessment will be conducted in areas identified to have potential and strategies for avoidance provisions shall be discussed with MHSTCI and Indigenous Communities, if necessary;The Stage 2 archaeological assessment report shall cover all previously assessed projects that are within 50 m of the study area as well as the Toronto AMP when determining areas of potential. Additional research is required on the two archaeological sites (i.e., Hunter and Roseland) to develop firm evidence on whether there are any potential of the site remaining in the area; andWith variation of soil types and tunnelling methods, to ensure that the risks of slumping and collapses of the archaeological site have been considered and minimized, MHSTCI may request a stamped statement from a qualified engineer that is their opinion that there will be a low risk of alterations to the archaeological site from the installation and presence of the planned infrastructure.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;	<u>Prior to/During Construction</u> <ul style="list-style-type: none">Further Archaeological Assessment may identify the need for monitoring during construction.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<ul style="list-style-type: none">• If archaeological materials are recovered during Stage 2 archaeological assessment, a determination of whether further archaeological work is required (Stage 3) will be made;• 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;• All archaeological assessment reports will be completed in accordance with the MHSTCIs 2011 <i>Standards and Guidelines for Consultant Archaeologists</i> and the terms and conditions of the archaeologist's license. The archaeological assessment reports will be deemed complete only when MHSTCI has issued a letter indicating that the report(s) have been entered into the Ontario Public Register of Archaeological Reports;• If final limits of the Project area are altered and fall outside of the assessed study area, additional Archaeological Assessments will be conducted by a professionally licensed archaeologist prior to the completion of detail design, and prior to construction activities. This will include completing all required Archaeological Assessments resulting from the Stage 1 Archaeological Assessment (Stage 2, Stage 3 and Stage 4, as required) as early as possible, prior to the completion of design, and in advance of any ground disturbance;• All work shall be performed in accordance with applicable law, including but not limited to the <i>OHA</i>, the MHSTCIs <i>Guidelines for Consultant Archaeologists</i> (2011), and <i>Engaging Aboriginal Communities in Archaeology: A Draft Bulletin for Consultant Archaeologists in Ontario</i> (2011);• The Contractor will 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;• Should previously unknown or unassessed deeply buried archaeological resources be uncovered, they may constitute a new archaeological site and therefore be subject to Section 48 (1) of the <i>OHA</i>. The proponent or person discovering the archaeological resources must immediately cease all activities impacting archaeological resources and engage a licensed archaeologist to carry out an archaeological assessment, in compliance with Section 48 (1) of the <i>OHA</i>. Any person discovering human remains must immediately cease ground disturbing activities, and notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services (416-326-8800). Consultation with relevant stakeholders, including any applicable Indigenous communities, will be initiated in the event that archaeological resources or human remains are discovered;• In situations where human remains are associated with archaeological resources, MHSTCI should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the <i>OHA</i>;• All Archaeological Assessment findings will be shared with Indigenous communities, as per Metrolinx's procedures; and• Work in proximity to known cemeteries requires completion of an Archaeological Assessment prior to any proposed ground disturbance in accordance with the MHSTCIs <i>Standards and Guidelines for Consultant Archaeologists</i> (2011) and the <i>Funeral, Burial, and Cremation Services Act and regulations under that Act</i>.	

4.4.2 Built Heritage and Cultural Heritage Landscapes

4.4.2.1 Potential Impacts

Construction

Changes due to transit infrastructure projects have the potential to adversely affect cultural heritage landscapes and built heritage resources through displacement and/or disruption during and after construction. Built heritage and/or cultural heritage landscapes may experience displacement, i.e., removal, or direct effects if they are located within the Project footprint. There may also be potential for disruption or indirect impacts to CHR by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with their character and/or setting. Both direct and indirect effects will occur as a result of the Project.

Potential impacts are outlined in Table 4-20 and identified in Figure 4-1. Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-21.

Operations

The Project is not expected to result in any significant operational or maintenance-related built or cultural heritage impacts.

4.4.2.2 Recommended Mitigation Measures and Monitoring

Table 4-21 presents proposed mitigation and monitoring measures to address potential impacts associated with built and/or cultural heritage.

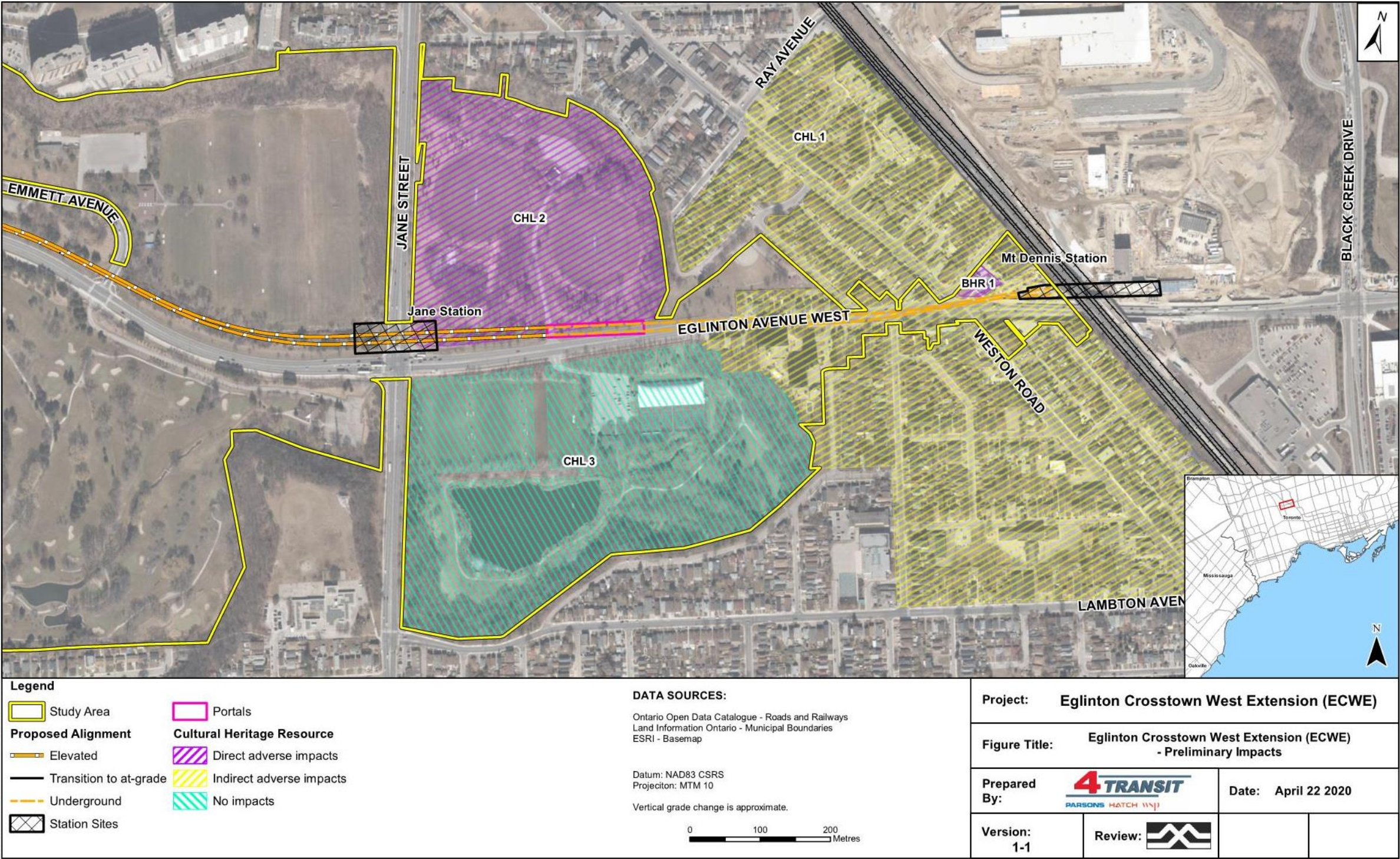


Figure 4-1: Cultural Heritage Preliminary Impacts Overview

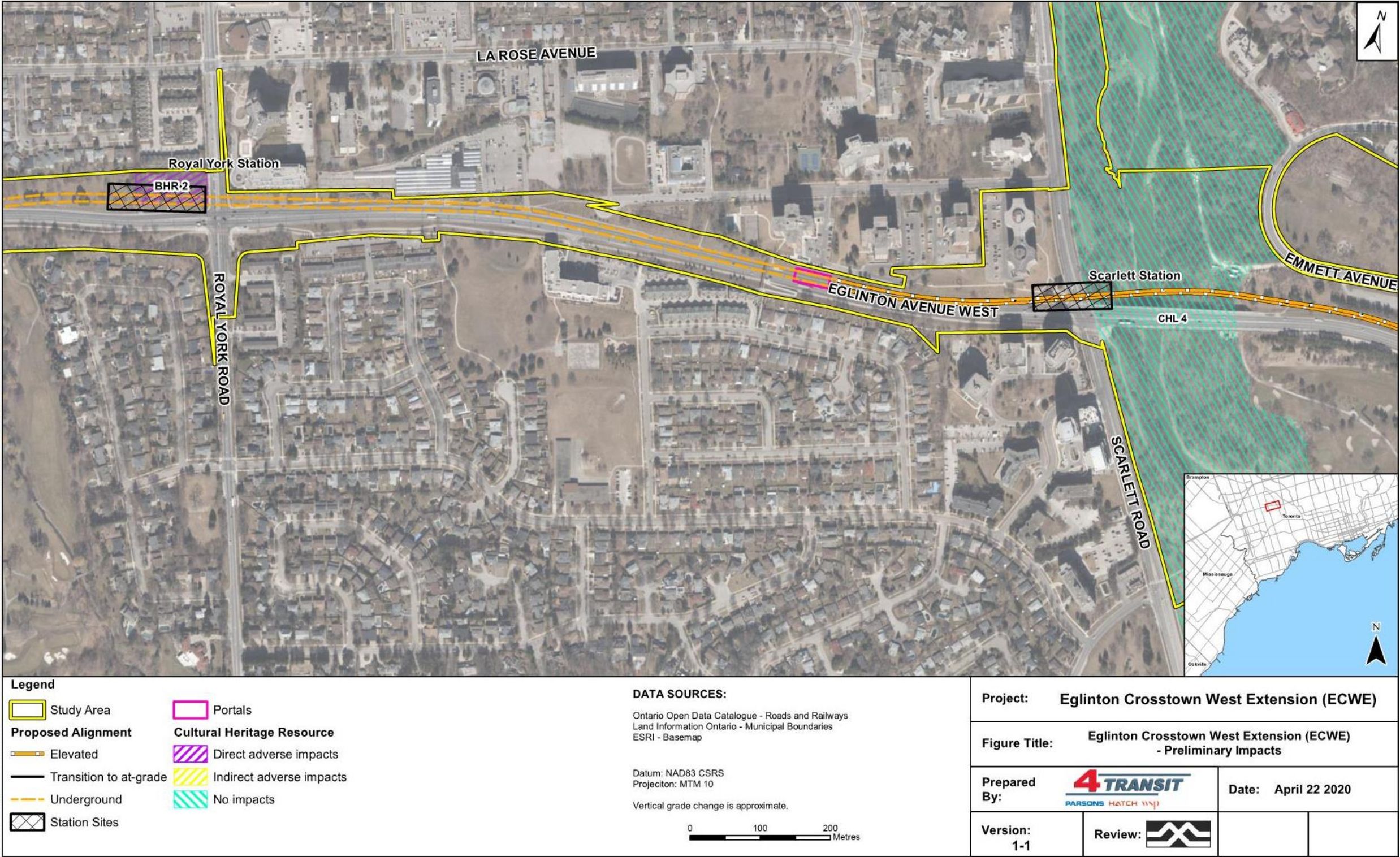


Figure 4-1: Cultural Heritage Preliminary Impacts Overview

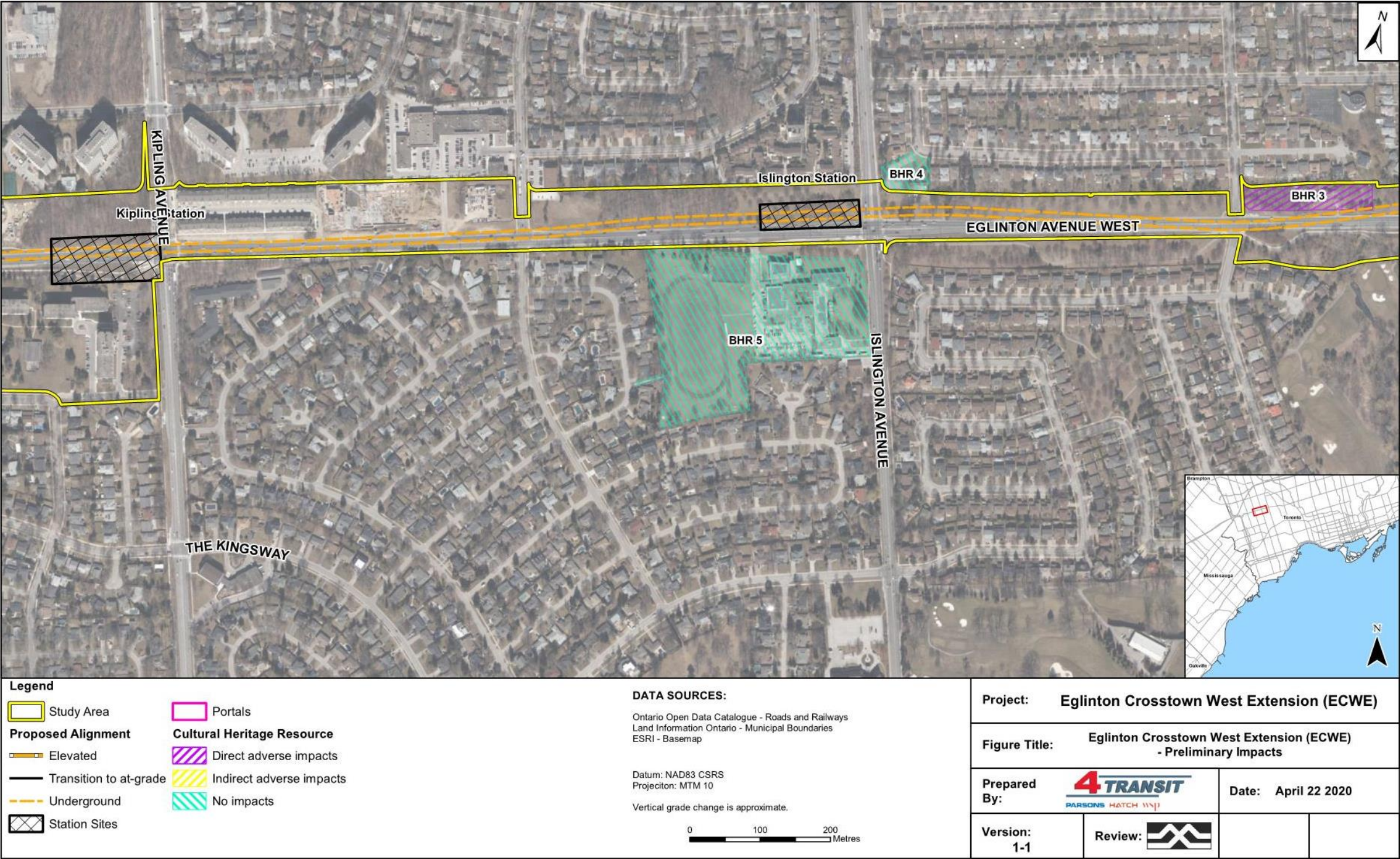


Figure 4-1: Cultural Heritage Preliminary Impacts Overview

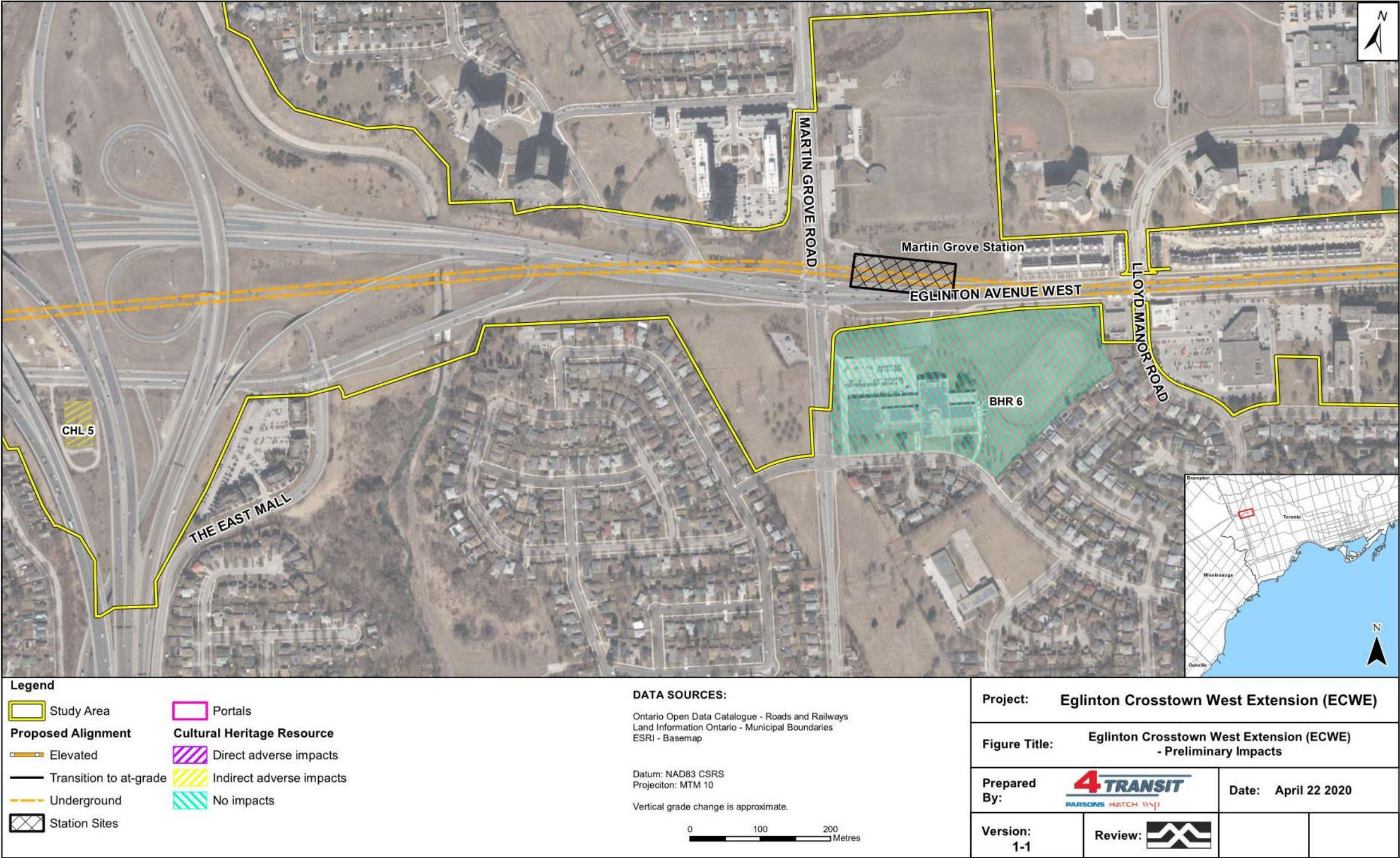


Figure 4-1: Cultural Heritage Preliminary Impacts Overview

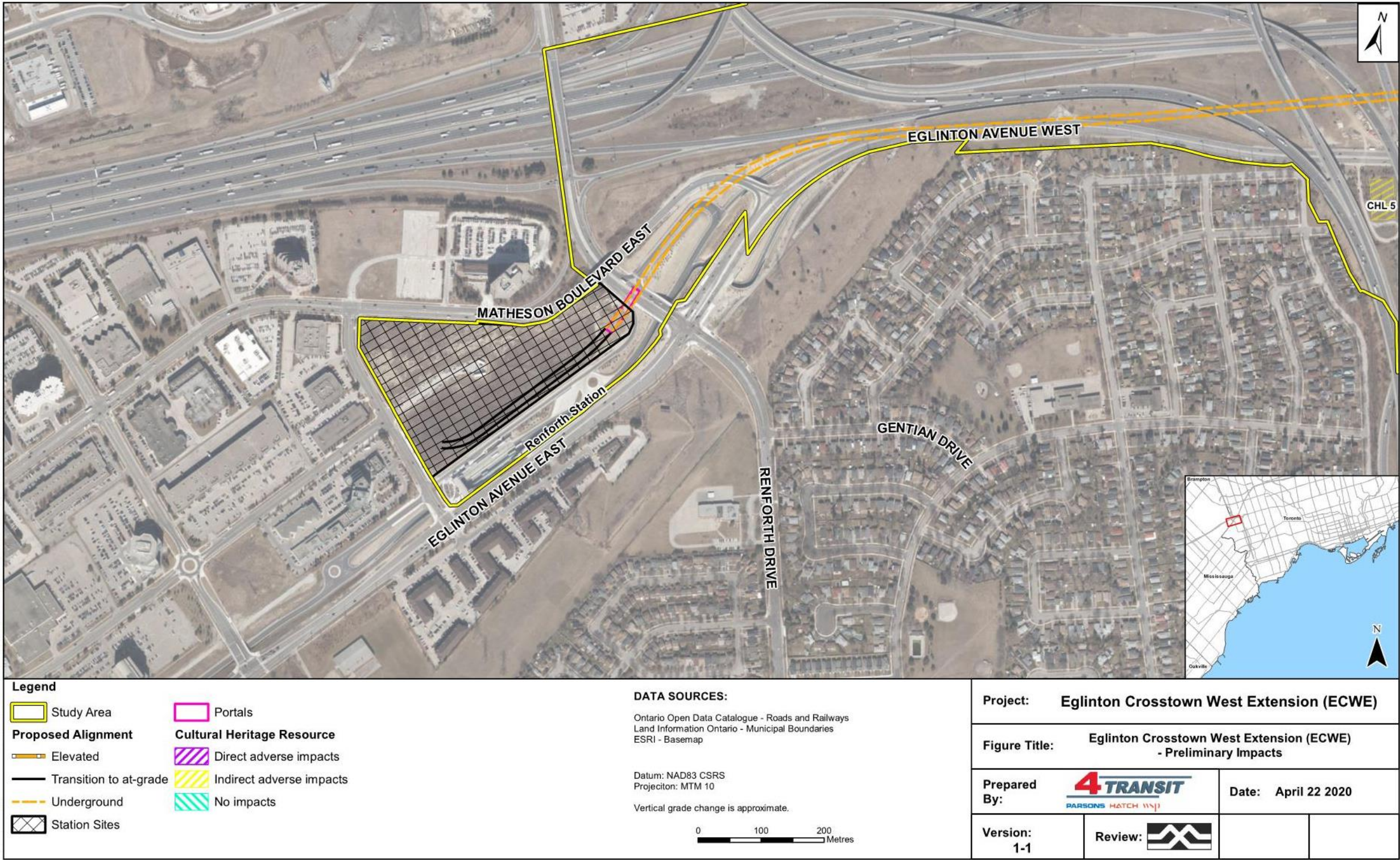


Figure 4-1: Cultural Heritage Preliminary Impacts Overview

Table 4-20: Impacts and Preliminary Mitigation Strategies for Cultural Heritage Resources

CHR #	Type	Location	Heritage Status	Type and Description of Potential/ Anticipated Impact	Mitigation Measures:
					i. Mitigation Options ii. Mitigation Recommendation
BHR - 1	BHR - Institutional	1151 Weston Road Bank of Nova Scotia	Listed on the City of Toronto Inventory of Heritage Properties (Added in 2013)	No impacts anticipated at this time based on the current conceptual design: No direct adverse impacts to the subject property are anticipated as no project components are planned within the property boundaries based on the current design. No direct or indirect impacts are anticipated based on the current design and any affects can be avoided/mitigated.	No further recommendations are required. Should impacts to 1151 Weston Road be identified as the design progresses, MHSTCI and the CoT will be notified and all additional cultural heritage reporting (e.g., HIA) shall be completed as required.
CHL - 1	CHL - Historic Settlement Centre	Mount Dennis - Eglinton Avenue West at Weston Road	Identified in 2010 UMCA Report	Indirect adverse impacts: There will be no anticipated direct adverse impacts to the heritage attributes as no project components are planned within the property boundaries of associated structures. Streetscape impacts within the public ROW are not anticipated to adversely impact the CHL. Construction impacts are limited to the road ROW only. Potential indirect adverse impacts from construction vibrations to heritage attributes.	Recommendation: A vibration study prepared by a qualified engineer is recommended to ensure the proposed project's construction activities will not result in negative impacts to heritage attributes. A plan should be prepared to reduce the vibration impacts related to construction activities for buildings located adjacent the area of construction.
CHL - 2	CHL - Recreational	3700 Eglinton Avenue West Fergy Brown Park	Identified in 2013 UMCA Report	Direct adverse impacts: Direct impacts to the subject resource are anticipated within the southern portion of the property parcel resulting from the construction of Jane Station and the elevated segment.	Preferred Option: Avoid direct adverse impacts to the subject site through consideration of an alternative route. Alternative Option: A CHER has been completed in accordance with the <i>Standards and Guidelines for Conservation of Provincial Heritage Properties</i> (July 2010), see Appendix I. The CHER includes evaluation of heritage value based on O. Reg. 9/06 of the OHA and provincial heritage value under O. Reg. 10/06

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CHR #	Type	Location	Heritage Status	Type and Description of Potential/ Anticipated Impact	Mitigation Measures: i. Mitigation Options ii. Mitigation Recommendation
					and has concluded this property is not culturally significant. Appropriate mitigation measures to address direct potential impacts will be finalized during detail design.
CHL - 3	CHL - Recreational	3601 Eglinton Avenue West Eglinton Flats Park	Identified in 2013 UMcA Report	No impacts anticipated at this time: There will be no direct adverse impacts to the subject property, as no project components are planned within the property boundaries. No direct or indirect impacts are anticipated.	No further recommendations are required.
CHL - 4	CHL - Waterscape	Humber River and Valley at Eglinton Avenue West	Designated as a Canadian Heritage River in 1999	No impacts anticipated at this time as the bridge will span over the Humber River, and in-water works are not anticipated: There will be no direct adverse impacts to the subject property, as no project components are planned within the property boundaries. No direct or indirect impacts are anticipated.	No further recommendations are required. Should impacts be identified, First Nations and Métis communities should be consulted on cultural heritage reporting, due to the significance of the Humber River to these communities.
BHR - 2	BHR - Residential	4200 Eglinton Avenue West Mary Reid House	Part IV Designation By-Law No. 221-2016, Municipal Easement Agreement	Direct adverse impacts: The Royal York Station is being constructed within the property parcel. There will be no direct impacts to the subject building itself; however, the construction of the underground Royal York Station may result in potential direct and indirect impacts to landscape features, including a stone wall on the property. Temporary encroachment due to staging activities may also occur.	Preferred Option: Avoid the potential alteration of heritage attributes of the subject building through consideration of an alternative location for Royal York Station. Encroachment on to the subject property should be avoided. Alternative Option: A CHER has been completed in accordance with the <i>Standards and Guidelines for Conservation of Provincial Heritage Properties</i> (July 2010), see Appendix J. The Mary Reid House satisfies the criteria outlined under <i>O. Reg. 9/06</i> but does not satisfy the criteria under <i>O. Reg. 10/06</i> . Therefore, the subject property has been identified as a potential Provincial Heritage Property (PHP), and an HIA is recommended. The HIA will be completed as early as possible, and prior to the

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CHR #	Type	Location	Heritage Status	Type and Description of Potential/ Anticipated Impact	Mitigation Measures: i. Mitigation Options ii. Mitigation Recommendation
					completion of detail design, and will recommend measures to avoid, minimize or otherwise mitigate negative impacts to the property. Consultation should also be undertaken with the CoT Heritage Preservation Services, CreateTO and the MHSTCI regarding impacts to this building as the design progresses. Should temporary encroachment occur, due to construction or staging activities, these activities should be planned to avoid built and landscape elements of this property.
BHR - 3	BHR - Residential	4400 Eglinton Avenue West	Identified in 2010 UMCA Report	<p>Minor direct and indirect adverse impacts are anticipated as a result of the proposed undertaking.</p> <p>Encroachment is expected at the southeast corner of the subject property, consisting of less than 1 metre to accommodate transit infrastructure. The proposed infrastructure has the potential to impact grass and trees on the subject property. While this encroachment exceeds extant property limits, these proposed impacts are not anticipated to adversely impact the potential CHVI of the property.</p>	<p>Preferred Option: Encroachment on to the subject property should be avoided or minimized.</p> <p>Alternative Option: Should encroachment be required, a Heritage Documentation Report should be completed to document landscape features along the proposed corridor. Consultation should also be undertaken with the CoT Heritage Preservation Services, CreateTO and the MHSTCI regarding impacts to this property and the Heritage Documentation Report.</p>
BHR - 4	BHR - Religious	4480 Eglinton Avenue West Church of Christian Science	Identified in 2010 UMCA Report	<p>No impacts anticipated at this time:</p> <p>There will be no direct adverse impacts to the subject property, as no project components are planned within the property boundaries. No direct or indirect impacts are anticipated.</p>	No further recommendations are required.
BHR - 5	BHR - Institutional	1738 Islington Ave at Eglinton	Identified in 2010 UMCA Report	<p>No impacts anticipated at this time:</p> <p>There will be no direct adverse impacts to the subject property, as no project components</p>	No further recommendations are required.

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CHR #	Type	Location	Heritage Status	Type and Description of Potential/ Anticipated Impact	Mitigation Measures: i. Mitigation Options ii. Mitigation Recommendation
		Avenue West Richview Collegiate Institute		are planned within the property boundaries. No direct or indirect impacts are anticipated.	
BHR - 6	BHR - Institutional	50 Winterton Drive Martin Grove Collegiate Institute	Identified in 2010 UMcA Report	No impacts anticipated at this time: There will be no direct adverse impacts to the subject property, as no project components are planned within the property boundaries.	No further recommendations are required.
CHL - 5	CHL - Cemetery	South of Eglinton Avenue West, Intersection of Highway 427 and 401, City of Toronto Willow Grove Burying Ground and the Richview Cemetery	Included on the City of Toronto Inventory of Heritage Properties	No impacts anticipated at this time. There will be no direct adverse impacts to the heritage attributes as no project components are planned within the property boundaries. The cemetery is outside of the vibration ZOI for both tunnel construction and any at-grade structure.	Recommendation: No further cultural heritage recommendations are required. However, the Stage 1-2 Archaeological Assessment for the Project (4Transit, 2020) makes the following recommendations for the subject cemetery, which will not be impacted: <i>"The Richview Cemetery is located within the study area limits and should be subject to the following recommendations (Figure A-7, Appendix A of Appendix G:</i> A. Project impacts should avoid Richview Cemetery; B. Should impacts to Richview Cemetery be unavoidable, a Stage 2 AA by test pit survey as per Section 2.3.2 of the 2011 S&G followed by a Stage 3 Cemetery Investigation within the cemetery limits is required to determine the presence or absence of archaeological materials or graves prior to any impacts. Permission from the cemetery owner and an Investigation

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CHR #	Type	Location	Heritage Status	Type and Description of Potential/ Anticipated Impact	Mitigation Measures: i. Mitigation Options ii. Mitigation Recommendation
					<p><i>Authorization from the Bereavement Authority of Ontario should be sought prior to any disturbance to the cemetery; and</i></p> <p><i>C. Impacted lands within 10 m of Richview Cemetery must be monitored by a licensed archaeologist for the presence of burials and archaeological remains. An Investigation Authorization from the Bereavement Authority of Ontario should be sought prior to any disturbance adjacent to the cemetery.”</i></p>

**Location of properties are shown in Figure 3-6 (A-E)*

Table 4-21: Summary of Potential Impacts, Mitigation Measures and Monitoring: Built and Cultural Heritage

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Built and Cultural Heritage	Direct adverse impacts to CHL-2 and BHR-2, (alteration).	<p><u>During Construction</u></p> <p>Direct adverse impacts will occur during construction of project infrastructure including: building demolition, runningway and station construction, as well as bridge improvements.</p> <p>Management of CHR/Properties.</p>	<p><u>Prior to Construction</u></p> <ul style="list-style-type: none">For demolitions and alterations (BHR-2, CHL-2), CHERs will be completed during the EPR Addendum in accordance with the Standards and Guidelines for the Conservation of Provincial Heritage Properties (July 2010). The CHERs will include evaluation of heritage value based on provincial heritage value under <i>O. Reg. 10/06</i>, scheduled for the spring season preceding construction activities. HIAs will also be completed prior to construction;The proposed design has been undertaken to minimise direct and indirect impacts wherever possible. Selection of construction staging and laydown areas will follow Metrolinx’s selection procedures which include avoiding heritage attributes wherever possible or effectively mitigating impacts where not possible;If there is a change in project design post EPR Addendum that causes any additional heritage properties to be impacted above and beyond those described in this EPR Addendum, additional impact assessment work and heritage studies will be undertaken in accordance with applicable federal/provincial legislation;The Contractor shall develop, submit to Metrolinx for approval, and implement a Strategic Conservation Plan (SCP) that addresses built heritage resources and cultural heritage landscapes according to MHSTCI <i>Information Bulletin No. 2: Preparing Strategic Conservation Plans for Provincial Heritage Properties</i> (2017);For Provincial Heritage Property of Provincial Significance (PHPPS), approval by MHSTCI is required;Where no previous assessment has been completed or a Statement of Cultural Heritage Value has not been approved by Metrolinx, a CHER shall be completed during the EPR Addendum as per the MHSTCI guidance for the completion of Cultural Heritage Reports: Existing Conditions and Preliminary Impact Assessment (2019);If warranted, complete a HIA in accordance with MHSTCI <i>Information Bulletin No. 3: Heritage Impact Assessments for Provincial Heritage Properties</i> (2017) to identify alternatives and mitigation and monitoring commitments to avoid or lessen impacts on the Cultural Heritage Value and heritage attributes of the PHP, based on the PHPs Statement of Cultural Heritage Value. Mitigation measures and alternatives should be consistent with the relevant conservation strategies established and adopted in a SCP. A SCP will be prepared and implemented for PHPs and PHPPS;Approval will be obtained from the MHSTCI, for any modifications to Provincially Significant properties prior to construction;During design, the recommendations of all HIAs will be followed and adhered to during design and construction, including but not limited to strategies to protect heritage attributes; andGiven the importance and location of some CHR, consultation with Municipal heritage staff and other jurisdictions will be undertaken as appropriate to determine if proposed infrastructure will be subject to specific policies within heritage districts or conservation areas (including parks).	<p><u>Prior to/During Construction</u></p> <ul style="list-style-type: none">Implement and comply with monitoring requirements and commitments pertaining to CHR/properties as per previously completed Metrolinx and/or GO Transit EPRs and/or ESRs and Addenda and the recommendations contained in any/all of the following documents: CHARs, CHERs, HIAs and SCPs;Consultation should be undertaken with the CoT Heritage Preservation Services and the MHSTCI regarding impacts; andShould significant changes to the proposed work be proposed that alters or introduces new impacts, a qualified heritage professional should complete an addendum to the cultural heritage report.

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
			<u>During Construction</u> <ul style="list-style-type: none">If there is a change in project design that is not captured or documented in a previously completed Metrolinx and/or GO Transit EPR and/or Environmental Study Reports (ESR) or post EPR/EPR Addendum that causes any additional heritage properties to be impacted by the proposed design/infrastructure, all applicable legislation will be followed to carry out additional impact assessment work and heritage studies.	
	Indirect adverse impacts to CHL-1, CHL-5 (vibration impacts).	<p>Indirect adverse impacts include potential vibration impacts during construction activities, including but not limited to, tunnelling activities, C&C construction, surface excavation, utility relocation and roadwork.</p> <p>Potential indirect impacts on known or potential properties of CHVI resulting from construction activities.</p> <p>For any additional potentially affected CHR/properties not previously identified within a previous Metrolinx/GO Transit EA/TPAP/Other Study.</p>	<u>Prior to Construction</u> <ul style="list-style-type: none">Vibration impacts should be minimised where possible, in accordance with the outcome of the vibration studies. Selection of construction staging and laydown areas will follow Metrolinx's selection procedures which include avoiding heritage attributes wherever possible or effectively mitigating impacts where not possible;A vibration study will be completed for CHL-1 in accordance with Section C of By-law 514-2008 by a qualified engineer in order to mitigate any negative impacts to heritage attributes;All work shall be performed in accordance with Applicable Law, including but not limited to the OHA, the <i>Metrolinx Interim Cultural Heritage Management Process</i> (2013) and the MHSTCI <i>Guidance on Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment</i> (2019); andFollow the process and recommendations outlined in the MHSTCI 2019 guidance on <i>Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment</i> (2019) and <i>Environmental Project Reports (EPR) under Transit Project Assessment Process (TPAP) for Proponents and their Consultants</i>. Follow the recommendations outlined in the heritage reporting previously completed including the <i>Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment</i> (2019).	<u>Prior/During/Post Construction</u> <ul style="list-style-type: none">Vibration monitoring may be undertaken, where necessary.

4.5 Transportation

4.5.1 Road Network

4.5.1.1 Potential Impacts

Construction

The Project will impact the roads, intersections, and ROW along Eglinton Avenue West between Mount Dennis and Renforth Stations. A road realignment is also potentially required for Eglinton Avenue West at the proposed Scarlett portal. Potential impacts to the road network during construction include:

- Reduction of lanes;
- Detours around construction zones during the duration of construction;
- Left turn restrictions;
- Pedestrian sidewalks maybe closed or detoured for the duration of construction; and
- Increased traffic on other arterial roadways due to drivers avoiding driving through construction zones.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-22.

Operations

The Project is not expected to result in any significant operational or maintenance-related road network impacts.

4.5.1.2 Recommended Mitigation Measures and Monitoring

Table 4-22 presents proposed mitigation and monitoring measures to address potential road network impacts.

Table 4-22: Summary of Potential Impacts, Mitigation Measures and Monitoring: Road Network

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Road Network	Impacts to roads and ROW along Eglinton Avenue West between Mouth Dennis and Renforth Station.	<u>During Construction</u> Roads and intersections will be impacted during construction activities. Temporary roads and traffic lights are expected during the construction along the Project study limits.	<u>Prior to Construction</u> <ul style="list-style-type: none">Contractor will obtain all the permits and approvals to design and construct all the temporary and permanent roads; andContractor will coordinate with the CoT, the CoM and relevant agencies regarding all temporary and permanent roads, including street lighting and traffic lights works. <u>During Construction</u> <ul style="list-style-type: none">Impacted roads may be working as temporary roads or staging areas during the construction; andThe roads will be maintained in accordance with the CoT, and the CoM standards. <u>Post-Construction</u> <ul style="list-style-type: none">Following construction, impacted roads will be reinstated to the original condition or to the CoT, and the CoM standards; whichever is greater; andThe Contractor will hand back to the CoT or CoM on behalf of Metrolinx, all the works within the City ROW as new infrastructure.	<u>During Construction</u> <ul style="list-style-type: none">Metrolinx (or representative) will monitor design and perform construction oversight to ensure all the obligations on the permits and approvals are being followed by the contractor, including the safety of the public on the impacted ROW.

4.5.2 Traffic

4.5.2.1 Potential Impacts

Construction

Temporary lane restrictions, road closures, turn restrictions and traffic detouring are anticipated during construction. Such conditions are likely to cause traffic delays and cause issues with access to properties and businesses located along Eglinton Avenue West. Dixon Road, The Westway and Lawrence Avenue West run parallel to Eglinton Avenue West and may experience increased traffic volumes due to the diverting motorists choosing to avoid construction zone(s) along Eglinton Avenue West. Proportionate increase in traffic volume is also likely on the north-south corridors connecting Eglinton Avenue West and the parallel corridors identified above.

Following the finalization of design for the various components of the Project, construction staging methodologies will be available to assess the full extent of construction impacts to traffic operations as well as to transit and active transportation (e.g., cycling and pedestrian). Traffic management plan(s) will be developed to mitigate disruptions to the traffic patterns thereby minimizing impacts on properties, businesses, emergency services and transit services within the project area.

Additional Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-23.

Operations

The Project's proposed alignment is mostly underground with the select segments being elevated over Eglinton Avenue West. Given that the proposed alignment for the Project is significantly different from 2010 approved EPR preferred at-grade alignment running within median of the existing Eglinton Avenue West, the impacts identified in 2010 EPR are not applicable. Detailed discussion on traffic impacts and mitigations measures can be found in Appendix H.

Potential impacts associated with proposed changes to station layout and alignment under this Addendum include:

- **Mount Dennis Station to Royal York Road Segment:** The alignment is elevated and as such no at-grade interaction of guideway with surface traffic is anticipated. Consequently, transit operations will not have any impacts on traffic operations.

The proposed Jane and Scarlett Stations will be elevated. Jane Street has been identified as Transit Corridor in the CoT Official Plan and is also a part of the Metrolinx Frequent Rapid Transit Network identified as BRT Corridor. It is understood that Jane Station's design will also be sensitive to future Jane BRT. Any structural elements supporting the super structure of the Jane and Scarlett Stations might necessitate any lane configuration changes at Jane Street and Scarlett Road intersections in addition to potential modifications due to BRT. Traffic impacts due to such modifications should be assessed

in future following finalization of station design. Similarly, the elevated station structures can also restrict traffic signal visibility at both Jane Street and Scarlett Drive intersections with Eglinton Avenue West. Additional signal heads and/or advance flashing warning signs may have to be installed to mitigate the restricted visibility.

- **Royal York Road to Renforth Station Segment:** The alignment in this segment is underground and no interaction of transit operations and traffic operations is anticipated so no traffic impacts are envisaged.

The alignment transfers to underground just west of the Scarlett Road as shown in Figure 4-2. Minor realignment of Eglinton Avenue West to the south of the portal has been proposed. Due to the proposed portal, impacts to the existing full-move driveway to the north are expected which may have to be closed in the worst-case scenario. The driveway serves as a combined secondary access for the residential developments whose dedicated primary full move accesses are available from Richview Road. Since it is a secondary access, no significant impacts are anticipated due to partial closure of the driveway, however in case of full closure, additional access requirements for the residential complex may have to be explored. A supplementary traffic study is recommended following finalization of structural design of the portal and adjacent elevated guideway structure.

The Project's alignment does not propose any cross-sectional changes along any street, therefore no impacts to general flow of traffic and intersection operations are anticipated. Level of service degradation at intersections as well as along midblock road segments is expected due to usual traffic growth over time. However, mitigation of impacts due to traffic growth was not within scope of this study.

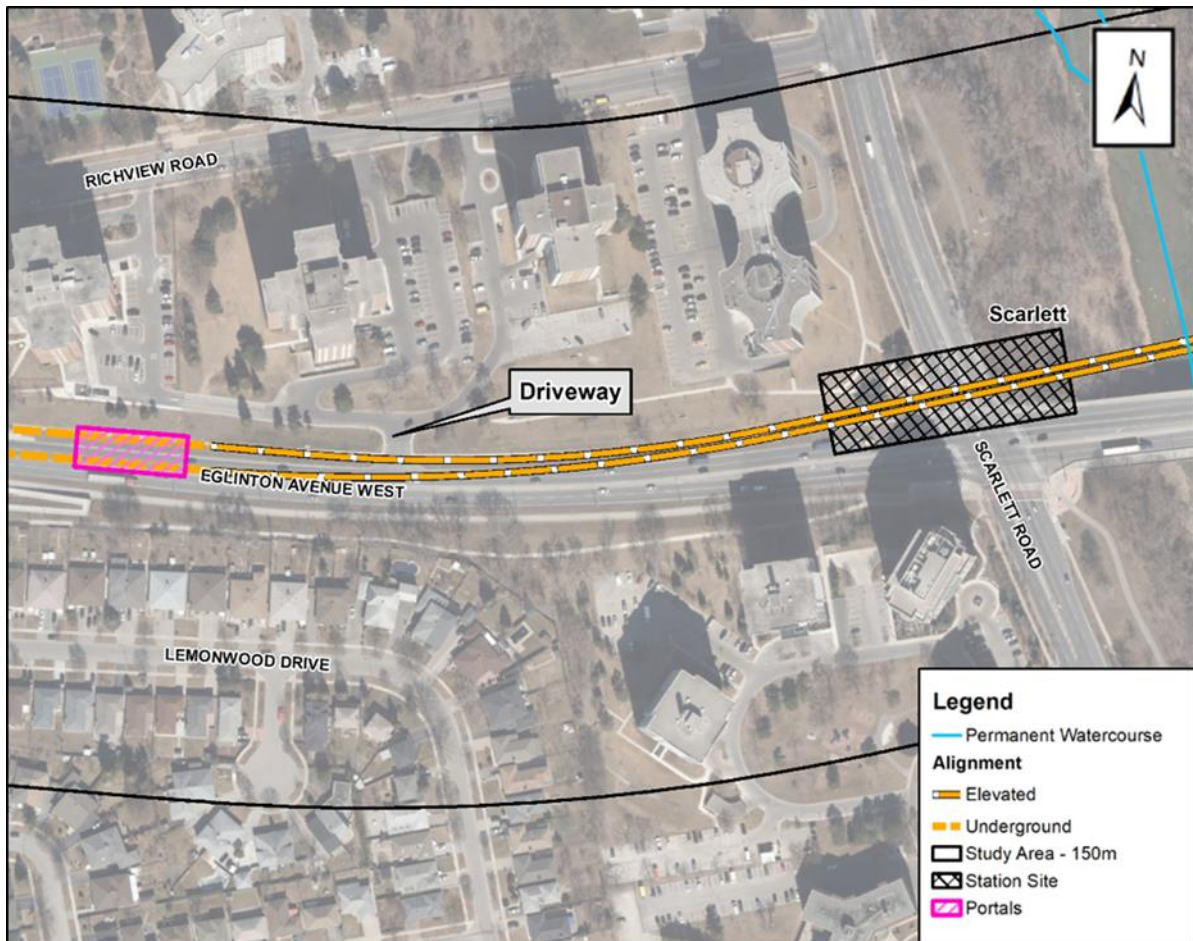


Figure 4-2: Tunnel Portal to West of Scarlett Road & Adjacent Driveway

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-23.

4.5.2.2 *Recommended Mitigation Measures and Monitoring*

Table 4-23 presents proposed mitigation and monitoring measures to address potential impacts associated with traffic.

Table 4-23: Summary of Potential Impacts, Mitigation Measures and Monitoring: Traffic

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Traffic	Potential reduction in road capacity and sight distances at the elevated Jane and Scarlett Stations.	<u>During Operation</u> Disruption to traffic operations and compromised traffic safety at Eglinton/Jane and Eglinton/Scarlett intersections.	Potential mitigation measures to be confirmed during detailed design once the design of station is finalized. These mitigation measures may include: <ul style="list-style-type: none">• Add required number of lanes to restore the existing capacity;• Turn prohibitions to reduce the demand at the intersection;• Potential reduction in existing lane widths to maintain the required number of lanes; and• Additional signal heads and/or advance flashing warning signs to mitigate the restricted visibility.	<ul style="list-style-type: none">• Monitoring requirements may be identified through future traffic study.
	Potential closure of the existing driveway to the north of tunnel portal located to the west of Scarlett Road. The driveway serves as a combined secondary access to residential complex.	<u>During Operation</u> As a secondary access partial closure is not anticipated to have significant impacts. Additional access may be required in case of full closure.	Potential mitigation measures to be confirmed during detailed design once the structural design of tunnel portal and adjacent elevated guideway are finalized. These mitigation measures may include: <ul style="list-style-type: none">• Design the supporting columns of the guideway to avoid road closures;• Convert the access into right-in/right-out and relocate as appropriate integrating into the supporting columns of the elevated guideway; and• Relocate the access to the west of the tunnel portal.	<ul style="list-style-type: none">• Monitoring requirements may be identified through future traffic study.
	Potential reduction in road capacity and/or traffic detouring during construction of guideway between the elevated segment at the Jane Station and underground Mount Dennis Station.	<u>During Construction</u> Extent of impacts will be different depending on tunnelling or C&C construction methodology. In case of C&C construction the road capacity is anticipated to be significantly reduced and partial/ full closures could also be required for limited time periods.	<u>Prior to Construction</u> <ul style="list-style-type: none">• Supplementary traffic study may be required following finalization of design to assess the impacts and identify mitigation measures. <u>During Construction</u> Potential mitigation measures to be confirmed in the next design phase based on the results of the supplementary traffic study to assess the impacts. These mitigation measures may include: <ul style="list-style-type: none">• Provide clear lane closure guidelines;• Schedule the work during off-peak and night to minimize lane closures and traffic delays;• Full road closure to reduce the construction time, providing potential detour routes to through traffic via Black Creek Drive and Jane Street. Local traffic access via Weston Road and Jane Street;• Coordinate the lane closures with the potential work zone restrictions for the adjacent Jane Station construction to avoid a sequence of lane or road closures; and• Effective work zone traffic information to be provided for local traffic to better manage trips.	<ul style="list-style-type: none">• Monitoring requirements may be identified through future traffic study.
	Temporary lane restrictions, road closures, turn restrictions and traffic detouring are anticipated during construction of tunnel portals, underground and elevated stations and allied installations.	<u>During Construction</u> Disruption to traffic operations along Eglinton Avenue West.	<u>During Construction</u> <ul style="list-style-type: none">• Metrolinx and their consultants/contractors will work with the CoT, CoM, TTC, MiWay and GO Transit (as necessary) to develop an acceptable traffic management plan(s) and transit schedule. Truck haul routes will be identified during detail process as part of traffic management plan; and• Access to nearby land uses will be maintained to the extent possible. Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur.	<u>During Construction</u> <ul style="list-style-type: none">• Monitoring of traffic, TTC, MiWay and GO Transit operations is part of standard operating procedures of the CoT, the CoM, TTC and MiWay; and• Traffic impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.

4.5.3 *Public Transit*

4.5.3.1 *Potential Impacts*

Construction

The Project will impact existing transit routes which use Eglinton Avenue West and intersecting arterial roads, specifically during station construction and required road work. The majority of impacts would be related to placement of bus stops and short-term traffic restrictions.

Impacts to existing bus operations around Renforth Station will need to be minimized where possible, including potential impacts to existing ramps to the Mississauga Transitway corridor and transit stops located on the east side of Commerce Drive.

During detailed design, a further review of the surface transit network will need to be completed to optimize points of connectivity with the Project.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-24.

Operations

The Project is not expected to result in any significant operational or maintenance-related impacts to public transit.

4.5.3.2 *Recommended Mitigation and Monitoring*

Table 4-24 presents proposed mitigation and monitoring measures to address potential impacts associated with public transit.

Table 4-24: Summary of Potential Impacts, Mitigation Measures and Monitoring: Public Transit

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Public Transit	Construction and operations impacts to public transit.	<u>During Construction</u> Impacts to existing bus stops during construction activities.	<u>During Construction</u> <ul style="list-style-type: none">Metrolinx will ensure that the public is notified in advance of any potential service disruptions;Metrolinx will consult with local transit agencies to establish a suitable mitigation strategy to be implemented; andMaintain access to existing TTC, MiWay, and other bus services during construction activities by temporarily re-locating bus stops as required. Ensure wayfinding signage directing users to revised bus stop locations is maintained at all times during construction.	<u>During Construction</u> <ul style="list-style-type: none">Traffic impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjusted as necessary during the construction period.

4.5.4 Pedestrian and Cycling Network

4.5.4.1 Potential Impacts

Construction

During construction, there will likely be disruption to pedestrian and cyclist connections throughout the study area primarily along the existing MUP along Eglinton Avenue West and existing sidewalks surrounding proposed station locations, emergency exit buildings and/or ventilation shafts. The construction of the Project is not expected to have permanent impacts to the existing pedestrian and cycling network, with the exception of the potential for impacts to the existing pedestrian bridge west of Scarlett Road. The construction of the Project does, however, provide opportunities to enhance the pedestrian and cyclist environment in the study area.

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-25.

Operations

The Project is not expected to result in any significant operational or maintenance-related pedestrian and cycling network impacts.

4.5.4.2 Recommended Mitigation Measures and Monitoring

Table 4-25 presents proposed mitigation and monitoring measures to address potential impacts associated with the pedestrian and cycling network in the study area.

Table 4-25: Summary of Potential Impacts, Mitigation Measures and Monitoring: Pedestrian and Cycling Network

Factor	Environmental Issue/ Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Pedestrian and Cycling Network	Construction and operations impacts to pedestrian and cycling network.	<u>During Construction</u> Temporary pedestrian and cycling access restrictions during construction activities. Potential impacts to existing pedestrian bridge west of Scarlett Road.	<u>Prior to Construction</u> <ul style="list-style-type: none">Ensure design of stations incorporates best practices for pedestrian and cyclist connectivity and connects to existing and planned facilities where possible. <u>During Construction</u> <ul style="list-style-type: none">Maintain connectivity along the existing east-west pathway along Eglinton Avenue West, north-south pathway along Scarlett Road and all other pedestrian and cycling facilities during construction. This also includes maintaining connectivity at the existing mid-block pedestrian bridge west of Scarlett Road to the extent possible or exploring alternative methods to maintain mid-block pedestrian and cycling connectivity during construction (e.g. temporary bridge);Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory, and warning signs;When temporary closures are required to pedestrian and cycling facilities, ensure safe and accessible detour routes are provided. Consult with residents and other stakeholders to provide awareness of closures and detour routes; andEnsure appropriate detour signage is implemented during construction and the quality of detour routes are maintained and accessible at all times.	<u>During Construction</u> <ul style="list-style-type: none">Cycling network impacts to be monitored in accordance with the Construction Traffic Control and Management Plan and adjust as necessary during the construction period.

4.5.5 *Navigable Watercourses*

4.5.5.1 *Potential Impacts*

The proposed changes to the 2010 EPR and 2013 EPR Addendum are not expected to result in any impacts to navigable waters during construction or operations.

4.5.5.2 *Recommended Mitigation Measures and Monitoring*

Given there are no anticipated impacts, mitigation measures and monitoring are not required.

4.5.6 *Rail Network*

4.5.6.1 *Potential Impacts*

No impacts to the existing rail network, including the future Mount Dennis GO Station are anticipated since the existing Rail Corridor crossing Eglinton Avenue West is east of the proposed works for the Project.

4.5.6.2 *Recommended Mitigation Measures and Monitoring*

Given there are no anticipated impacts, mitigation measures and monitoring are not required.

4.6 *Other Potential Impacts*

4.6.1 *Electromagnetic Interference*

4.6.1.1 *Potential Impacts*

The proposed changes to the Project alignment and station locations do not result in different impacts related to Electromagnetic Interference (EMI) than those identified in the 2010 EPR or 2013 EPR Addendum.

4.6.1.2 *Recommended Mitigation Measures and Monitoring*

Mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects are presented in Table 4-26.

**Table 4-26: Summary of Potential Impacts, Mitigation Measures and Monitoring:
Electromagnetic Interference**

Factor	Environmental Issue/Concern	Effect/Impact (During Construction/During Operation)	Mitigation Measures	Monitoring
Electromagnetic Interference	Potential generation of electromagnetic interference causing electromagnetic disturbance.	The proposed changes to the Project alignment and station locations do not result in different impacts related to EMI than those identified in the 2010 EPR and 2013 EPR Addendum.	As noted in the 2010 EPR and 2013 EPR Addendum, EMI can be mitigated through the setback of the overhead catenary system.	N/A

4.6.2 Stray Current

4.6.2.1 Potential Impacts

The proposed changes to the Project do not result in different impacts related to stray current than those identified in the 2010 EPR or 2013 EPR Addendum.

4.6.2.2 Recommended Mitigation Measures and Monitoring

There are no changes to the proposed mitigation measures to avoid, reduce, minimize, and/or compensate for these potential impacts, as well as monitoring activities associated with these effects and mitigation measures recommended in the 2010 EPR and 2013 EPR Addendum.

5. Consultation Process

5.1 Overview of Consultation Approach

A communication and consultation program was undertaken for the Project to meet and exceed the requirements of Section 8 of *O. Reg. 231/08* (*O. Reg. 231/08*) and to inform the community and seek feedback on various aspects of the Project. The following are the key steps in the EPR Addendum process for consultation and engagement:

- Complete an assessment of any impacts that the change may have on the environment;
- Share an overview of the project and impact assessment with the public for review and comment;
- Prepare and distribute an EPR Addendum;
- Prepare and distribute a Notice of EPR Addendum (Notice); and
- Conduct a final review by the public and stakeholders prior to proceeding with the proposed EPR Addendum.

This section documents the communication and consultation with the public and stakeholders prior to the Notice of Addendum, distribution of the EPR Addendum and its supporting technical studies, and preparation and distribution of the Notice.

5.1.1 Approach to Consultation

Metrolinx offered a wide range of communication, consultation activities, and outlets to reach all interested members of the public, residents and businesses, review agencies, Indigenous communities, and other stakeholders to solicit comments and feedback relating to the Project including:

- Project website (www.metrolinx.com/eglintonwest);
- Project email address (eglintoncrosstownwest@metrolinx.com);
- Project phone number: 416-782-8118;
- Elected Officials Briefings;
- Mailings/notifications;

- Newspaper advertisements;
- Social media posts and advertisements;
- Postcard with mailout;
- Online Public Information Session; and
- Letters to Indigenous communities.

An Online Public Information Session was held to present project information to a broad audience and to allow members of the public to ask questions and raise concerns to Metrolinx staff and consultants. Section 5.2 describes the results of the Online Public Information Session.

Permit and approval requirements were also identified and confirmed through consultation with agency stakeholders. For details regarding permits and approvals as well as commitments related to future consultation please refer to Section 5.6.

5.1.2 **Record of Consultation**

Metrolinx maintained a record of all Project consultation undertaken during the regulatory consultation phase. All Project correspondence and meeting summaries are documented in Appendix K. All comments received from the public have been redacted to protect personal information.

5.1.3 **Identification of Interested Parties**

At the outset of the EPR Addendum process, a Project Distribution List (Appendix K) was developed to ensure all stakeholders and interested parties receive notifications related to the Project.

Appropriate contacts at each review agency (i.e., federal, provincial, municipal, conservation authorities) were confirmed through outreach during initial consultation activities. Elected officials (i.e., City Council, Members of Parliament, Members of Provincial Parliament) with jurisdiction in the Project Study Area were confirmed through online resources. Indigenous communities were identified through consultation with the MECP and Ministry of Indigenous Affairs. The Project Distribution List is a live document that is continuously updated in response to Project feedback (e.g., requests to be added) and is used to inform stakeholders and the public of Project milestones (e.g., Notice of Public Information Session). All Project Notices are provided in Appendix K.

The consultation process was designed to address Section 8 of *O. Reg. 231/08* and included consultation with the following parties:

General Public	
Residents and Businesses in the Study Area	
Provincial Government Agencies:	
<ul style="list-style-type: none"> • Ministry of Economic Development, Job Creation and Trade; 	<ul style="list-style-type: none"> • Ministry of Transportation;

<ul style="list-style-type: none"> Ministry of Agriculture, Food and Rural Affairs; 	<ul style="list-style-type: none"> Ministry of Municipal Affairs and Housing;
<ul style="list-style-type: none"> Ministry of Energy, Northern Development and Mines; 	<ul style="list-style-type: none"> Ministry of Community Safety and Correctional Services;
<ul style="list-style-type: none"> Ministry of Environment, Conservation and Parks; 	<ul style="list-style-type: none"> Ministry of Heritage, Sport, Tourism, and Culture Industries;
<ul style="list-style-type: none"> Ministry of Health and Long-Term Care; 	<ul style="list-style-type: none"> Infrastructure Ontario; and
<ul style="list-style-type: none"> Ministry of Natural Resources and Forestry; 	<ul style="list-style-type: none"> Ontario Provincial Police.
Federal Government Agencies:	
<ul style="list-style-type: none"> Crown-Indigenous Relations and Northern Affairs Canada; 	<ul style="list-style-type: none"> Environment and Climate Change Canada.
<ul style="list-style-type: none"> Impact Assessment Agency of Canada; 	<ul style="list-style-type: none"> Transport Canada; and
<ul style="list-style-type: none"> Fisheries and Oceans Canada; 	<ul style="list-style-type: none"> Greater Toronto Airport Authority (GTAA).
Regional and Local Municipalities:	
<ul style="list-style-type: none"> City of Toronto; 	<ul style="list-style-type: none"> Toronto and Region Conservation Authority (TRCA).
<ul style="list-style-type: none"> City of Mississauga; and 	
Utilities:	
<ul style="list-style-type: none"> Hydro One Networks Inc. 	
Indigenous Communities	
Elected Officials	
Emergency Services:	
<ul style="list-style-type: none"> Toronto Fire Services; 	<ul style="list-style-type: none"> Peel Regional Paramedics Services;
<ul style="list-style-type: none"> Toronto Police Services; 	<ul style="list-style-type: none"> Peel Fire Department; and
<ul style="list-style-type: none"> Toronto Paramedic Services; 	<ul style="list-style-type: none"> Peel Regional Police.
<ul style="list-style-type: none"> Peel Police Services; 	
Schoolboards and Schools:	
<ul style="list-style-type: none"> Toronto District School Board (TDSB); and 	<ul style="list-style-type: none"> Toronto Catholic District School Board (TCDSB).
Transit Stakeholders:	
<ul style="list-style-type: none"> TTC; and 	<ul style="list-style-type: none"> MiWay.

5.2 Online Public Information Session Consultation

In April 2020 an online public consultation process was initiated to share information and seek feedback on the updates to the Project description and environmental studies underway. The primary method used to engage the community was an Online Public Information Session, this was chosen as the preferred community consultation method due to the ongoing COVID-19 pandemic. The online consultation was accessible from the Project website and ran from April 1, 2020 until April 10, 2020. The online consultation included display boards, a video narration, and an opportunity to ask questions about the project materials.

Online Public Information Session material presented content such as key project milestones, the Project's purpose, what the Project will include, what is being planned for the future, the Project's benefits, assessment of the design changes from the 2010 EPR and 2013 EPR Addendum, station locations, and studies underway. Further details of the material presented is described in 5.2.2.

An Online Public Information Session Summary Report was prepared to summarize comments and document the consultation. A copy of that report, along with the display panels from the meeting, are included in Appendix K.

5.2.1 Online Public Information Session Notification

Notification of the Online Public Information Session was accomplished through the following:

- Announcements were made on Metrolinx Facebook and Twitter accounts through an events post that started April 2;
- The open house was also highlighted on the [Metrolinx.com/itshappening](https://www.metrolinx.com/itshappening) site;
- Postcard mailout via Canada Post to approximately 14,150 residents and businesses within a 100 m radius of Eglinton Avenue West on March 24, 2020;
- Notice was sent via direct mail for residents and businesses within a 50 m radius of Eglinton Avenue West on March 24, 2020;
- Notifications via direct mail and email were sent to Indigenous communities on March 24, 2020;
- Notification via email to all contacts on the Project Distribution List on March 26, 2020; and
- Posting to the Project webpage (www.metrolinx.com/eglintonwest) on March 24, 2020.

Newspaper ads were published as follows:

- Toronto Star - March 18 and 26, 2020;
- York City Centre Neighbourhood Voice - March 26, 2020;
- North York Mirror - March 26, 2020;
- Etobicoke Guardian - March 26, 2020;

- Mississauga News - March 26, 2020;
- Mississauga le Metropolitan (French) - March 26, 2020; and
- Toronto L'express (French) - March 27, 2020.

Further details and the postcard sent via the Canada Post drops, direct mailings and newspaper ads can be found in Appendix K.

5.2.2 Information Presented at Online Public Information Session

The following information was presented at the Online Public Information Session:

- Why We are Here;
- Who is Metrolinx?
- What is the Eglinton Crosstown West Extension?
- Ontario's New Subway Transit Plan for the Greater Toronto and Hamilton Area;
- Benefits of the ECWE;
- ECLRT Construction Update;
- Key Milestones and Project Timeline;
- Project Benefits;
- Assessment of Design Changes;
- Project Location Concepts, Renderings and Examples;
- Environmental Studies Underway:
 - Natural Environment;
 - Cultural Heritage;
 - Air Quality;
 - Noise and Vibration; and
 - Traffic.
- Next Steps and How to Share Feedback.

Members of the public were able to share feedback through the Metrolinx Engage platform, the Project email, or an online feedback form. Responses documented through Metrolinx Engage were answered on the web-page, available for public viewing.

5.2.3 Summary of Comments Received

The summary below outlines the most common comments received during the Open Public Information Session online consultation.

A total of 44 participants submitted comments during the online open house during the April 1 to April 10 comment period. There were 536 page views on the website, from 178 unique

viewers and 240 video views of the narrative displays. Overall themes that emerged from the feedback include:

- Interest in underground vs. at-grade alignment:
 - Eight comments focused around the discussion of whether the alignment should be underground or at-grade. In general, rationale for supporting an at-grade alignment referenced cost saving, minimizing delays and construction impacts, and the availability of space along Eglinton Avenue West to accommodate the extension.
- Interest in environmental and community impacts:
 - Eight comments were submitted regarding noise and vibration concerns during construction as well as during train operation. There were also concerns about construction delays and impacts to traffic and local business, similar to that experienced at the Eglinton Crosstown construction. Questions were also submitted regarding specific property impacts and expropriation requirements.
- Alignment and design:
 - Twelve comments were submitted regarding the alignment and design focused on station locations, and integration with other transit networks.
- Project timeline and costs:
 - Three questions were submitted regarding the order of construction in relation to other projects.

In general, comments showed support for an elevated alignment to save costs. There were concerns regarding local community impacts during construction and operation, including noise, vibration and property requirements.

5.2.4 *Commitments to Future Consultation*

Metrolinx will continue to consult with the community by developing a Communication Plan to inform local councillors, affected residents and businesses regarding future development opportunities in the study area throughout the design and construction phases of the project.

5.3 Impacted Property Owners

Property impacts will be confirmed during the next design phase and affected property owners will be consulted once impacts are confirmed.

5.4 External Agencies

Metrolinx sent notification directly to external agencies via email in advance of the Online Public Information Session on March 26, 2020. Responses were received from the following agencies:

- Toronto Fire Services;
- Toronto District School Board;
- Hydro One;

- MECP;
- City of Mississauga;
- Ministry of Transportation;
- Toronto Catholic District School Board;
- Toronto Region Conservation Authority; and
- GTAA.

Comments included updating contact information, as well as requests for reports. All requested reports were directly sent to these agencies for review. Table 5-1 provides a summary of agency correspondence.

Table 5-1: Summary of Agency Correspondence

Agency	Date	Summary
Federal		
Crown-Indigenous Relations and Northern Affairs Canada	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Impact Assessment Agency of Canada (IAAC)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Fisheries and Oceans Canada (DFO)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Environment and Climate Change Canada	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.

**Eglinton Crosstown West Extension
 Environmental Project Report Addendum**

Agency	Date	Summary
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Transport Canada	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Greater Toronto Airports Authority (GTAA)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 2, 2020	GTAA provided contact information for any further correspondence.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
	April 16, 2020	Metrolinx sent a reminder of the April 20 date for EPR Addendum comments.
	April 20, 2020	GTAA submits comments regarding Air Quality.
	May 12, 2020	Metrolinx provided revised Air Quality report.
	May 13, 2020	GTAA confirms receipt of revised Air Quality report.
Provincial		
Ministry of Economic Development, Job Creation and Trade	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3. Receipt confirmed on March 16, 2020.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.

**Eglinton Crosstown West Extension
Environmental Project Report Addendum**

Agency	Date	Summary
(MEDJCT)	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9. Receipt confirmed on April 1, 2020.
	April 3, 2020	MEDJCT submits comments on the EPR Addendum.
	May 21, 2020	Metrolinx provided revised Sections 4-6 of the EPR Addendum.
Ministry of Agriculture, Food and Rural Affairs	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Ministry of Energy, Northern Development and Mines	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3. Receipt confirmed on March 17, 2020.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Ministry of Environment, Conservation and Parks (MECP)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 2, 2020	MECP provided contact information for any further correspondence. MECP stated that Metrolinx is to confirm a list of Indigenous Communities with the agency prior to any engagement.
	March 3, 2020	MECP provided additional contact information.
	March 9, 2020	Metrolinx provided the Natural Heritage, Cultural Heritage, Stage 1-2 AA, Noise & Vibration, and Air Quality reports for

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Agency	Date	Summary
		agency review, requesting comments by April 3. Receipt confirmed on March 9, 10, and 26, 2020.
	March 10, 2020	Metrolinx sent request for feedback regarding identification of potentially interested Indigenous communities.
	March 13, 2020	MECP provided additional contacts for document distribution.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3. Receipt confirmed on March 18 and 26, 2020.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1. MECP requested additional time to review the EPR.
	March 30, 2020	MECP submitted comments on the Air Quality sections of the EPR Addendum. MECP inquires about the Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	March 31, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9. Receipt confirmed on April 1, 2020.
	April 1, 2020	MECP inquires about submission deadlines.
	April 3, 2020	MECP submits comment on groundwater.
	April 6, 2020	MECP inquires about the new Notice of Addendum date.
	April 16, 2020	Metrolinx sent a reminder of the April 20 date for EPR Addendum comments.
	April 20, 2020	MECP submits comments on EPR Addendum sections.
	April 21, 2020	MECP requests hard copies of EPR Addendum documents.
	April 29, 2020	MECP inquires about the new Notice of Addendum date and revisions to documents.
	May 8, 2020	Metrolinx responds to April 29 inquiry. Metrolinx provided revised Air Quality and Noise Reports. Receipt confirmed on May 8, 2020.
	May 12, 2020	MECP replied to letter from Metrolinx on March 10 confirming the list of Indigenous communities.
	May 13, 2020	Metrolinx provided revised Section 1-3 of the Environmental Report. Receipt confirmed on May 13, 2020.
	May 21, 2020	Metrolinx provided revised Sections 4-6 of the EPR Addendum.
Ministry of Health and Long-Term Care	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3. Receipt confirmed on March 17, 2020.

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Agency	Date	Summary
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Ministry of Municipal Affairs and Housing (MMAH)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3. Receipt confirmed March 17, 2020.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3. MMAH provided contact information for any further correspondence. Receipt confirmed March 17, 2020.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9. Receipt confirmed on April 1 and 6, 2020.
	April 3, 2020	MMAH provided comments on the Cultural Heritage, Natural Heritage, and Socio-Economic reports.
	May 13, 2020	Metrolinx provided revised Socio-Economic and Land Use Assessment report.
	May 14, 2020	Metrolinx provided revised Cultural Heritage Report. Receipt confirmed on May 14, 2020. Metrolinx followed up on circulating revised Cultural Heritage Report.
	May 15, 2020	Metrolinx provided revised Natural Heritage Report. Receipt confirmed on May 19, 2020.
Ministry of Natural Resources and Forestry (MNR)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Ministry of Transportation (MTO)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 5, 2020	MTO provided contact information for any further correspondence.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3. Receipt confirmed

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Agency	Date	Summary
		on March 13, 2020.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3. Receipt confirmed on March 18, 2020.
	March 18, 2020	MTO submits comments on Section 1 of the EPR Addendum.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9. Receipt confirmed April 1, 2020.
	May 12, 2020	Metrolinx provided Sections 1-3 of the Draft EPR Addendum back with their respective comment tracking sheet.
Ministry of Community Safety and Correctional Services (MCSCS)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Ministry of Heritage, Sport, Tourism, and Culture Industries, Heritage Planning Unit (MHSTCI)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 9, 2020	Metrolinx provided the Stage 1 Archaeological Assessment, CHAR and appendices. Receipt of Stage 1 Archaeological Assessment, CHAR and appendices confirmed.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3. Receipt of Cultural Heritage and Archaeology excerpts of EPR confirmed on March 24, 2020.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9. Receipt confirmed on April 1, 2020.
	April 2, 2020	MHSTCI submitted comments for the Cultural Heritage report.

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Agency	Date	Summary
	April 9, 2020	MHSTCI submitted comments for the EPR Addendum.
	April 23, 2020	The Stage 1-2 Archaeological Assessment Report was submitted to MHSTCI for review through Past Portal.
	May 12, 2020	Metrolinx provided Sections 1-3 of the Draft EPR Addendum back with their respective comment tracking sheet.
	May 14, 2020	Metrolinx followed up with MHSTCI on the circulated revised Cultural Heritage Report and the respective comment tracking sheet. Receipt of revised Cultural Heritage report confirmed on May 14, 2020.
	May 21, 2020	Metrolinx provided revised Sections 4-6 of the EPR Addendum.
Infrastructure Ontario (IO)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
Ontario Provincial Police (OPP)	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3. OPP provided contact information for any further correspondence.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
Regional and Local Municipalities		
City of Toronto (CoT)	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review
	March 9, 2020	Metrolinx provided the Natural Heritage, Cultural Heritage, and Stage 1-2 AA for agency review, requesting comments by April 3.
	March 10, 2020	CoT requested comment sheets. Metrolinx provided comment sheets.
	March 10, 2020	Metrolinx provided the Noise & Vibration and Air Quality reports for agency review, requesting comments by April 3.

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Agency	Date	Summary
	March 12, 2020	Metrolinx provided the Traffic and Socio-Economic reports for agency review, requesting comments by April 3.
	March 18, 2020	CoT inquired about the timeline for the EPR Addendum distribution.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments. Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
	April 1, 2020	Metrolinx provided the EPR Addendum for agency review, requesting comments by April 13.
	April 3, 2020	CoT provided comments on technical reports.
	April 6, 2020	Deadline to submit comments on the EPR Addendum was moved to April 20.
	April 16, 2020	Metrolinx sent a reminder of the April 20 date for EPR Addendum comments.
	April 17, 2020	TTC submitted comments for the Traffic report.
	April 20, 2020	CoT submitted comments for the EPR Addendum.
	May 12, 2020	Metrolinx provided revised Noise & Vibration and Air Quality reports. Metrolinx provided revised Sections 1-3 of the EPR Addendum.
	May 13, 2020	Metrolinx provided revised Socio-Economic and Land Use Assessment report.
	May 14, 2020	Metrolinx provided revised Cultural Heritage and Traffic Impact Assessment Reports, along with the comment trackers and shapefiles to support previously sent Noise and Vibration Report.
	May 15, 2020	Metrolinx provided revised Natural Heritage Report.
	May 21, 2020	Metrolinx provided revised Sections 4-6 of the EPR Addendum.
	May 25, 2020	Metrolinx provided revised EPR Addendum and technical reports.
City of Mississauga (CoM)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 2, 2020	CoM provided contact information for any further correspondence.
	March 12, 2020	Metrolinx provided all seven (7) technical reports for agency review, requesting comments by April 3.
	March 18, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 27, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	March 31, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
	April 3, 2020	CoM provided comments on Section 1, Traffic, and Socio-Economic reports.

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Agency	Date	Summary
	April 6, 2020	MiWay submits comments regarding working group meeting slides.
	April 9, 2020	CoM provided comments on the remaining Sections of the EPR Addendum.
	May 6, 2020	Metrolinx requested a link to a CoM map.
	May 12, 2020	Metrolinx provided Revised Sections 1-3 of the EPR Addendum.
	May 13, 2020	Metrolinx provided revised Socio-Economic and Land Use Assessment report.
	May 14, 2020	Metrolinx provided comment responses/revisions to their comments on the Traffic Impact Assessment Report.
	May 21, 2020	Metrolinx provided revised Sections 4-6 of the EPR Addendum.
Toronto and Region Conservation Authority (TRCA)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 2, 2020	TRCA provided contact information for any further correspondence.
	March 6, 2020	Metrolinx provided the Natural Heritage report for agency review, requesting comments by March 27.
	March 27, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx provided Sections 2-7 of the EPR Addendum for agency review, requesting comments by April 9.
	April 1, 2020	Metrolinx provided Section 1 of the EPR Addendum for Agency Review, requesting comments by April 9. TRCA stated that the review would be completed and submitted by April 29, hard copies of the documents were also requested.
	April 28, 2020	TRCA provided comments on the draft EPR Addendum sections.
	May 15, 2020	Metrolinx provided revised Natural Heritage Report.
	May 21, 2020	Metrolinx provided revised Sections 4-6 of the EPR Addendum.
School Boards		
Toronto District School Board (TDSB)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 3, 2020	TDSB provided contact information for further correspondence.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.

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Agency	Date	Summary
	April 3, 2020	TDSB submits comments on the EPR Addendum.
Toronto Catholic District School Board (TCDSB)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	February 29, 2020	TCDSB provided contact information for any further correspondence.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Emergency Services		
Toronto Fire Services	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 3, 2020	Toronto Fire expressed interest in reviewing EPR.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Toronto Police Services	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Toronto Paramedic Services	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 6, 2020	Toronto Paramedic Services provided contact information for any further correspondence.

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Agency	Date	Summary
	March 13, 2020	Metrolinx provided all seven technical reports for agency review, requesting comments by April 3.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments.
	April 1, 2020	Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
Utilities		
Hydro One Networks Inc. (HONI)	February 28, 2020	Metrolinx provided a formal letter with high level Project details and informed the agency that EPR Addendum documents will soon be ready for review.
	March 2, 2020	HONI provided contact information for any further correspondence.
	March 17, 2020	Metrolinx provided Section 1 of the EPR Addendum for agency review, requesting comments by April 3.
	March 26, 2020	Metrolinx provided notification of the Project's Online Public Information Session starting April 1.
	March 31, 2020	Metrolinx sent a reminder of the April 3 date for technical report comments. Metrolinx provided the remaining Sections of the EPR Addendum for agency review, requesting comments by April 9.
	April 2, 2020	HONI submitted comments for the technical reports.
	April 23, 2020	HONI responded to a request regarding existing archaeological assessments within the hydro corridor.

Meetings were held with the following agencies:

- Ministry of Transportation;
- City of Toronto;
- City of Mississauga;
- TTC;
- MiWay;
- GTAA; and
- TRCA.

Table 5-2 provides a summary of meetings held with these agencies as well as the topics discussed.

Table 5-2: Summary of Agency Meetings

Date	Agencies	Topics Discussed
December 6, 2019	Ministry of Transportation TTC GTAA	<ul style="list-style-type: none"> • General Project Update • Initial Business Case • Alignment • Communications • EPR Addendum
December 9, 2019	City of Mississauga MiWay	<ul style="list-style-type: none"> • General Project Update • Initial Business Case • Alignment • Communications • EPR Addendum
January 16, 2020	GTAA	<ul style="list-style-type: none"> • Tunnel Alignment
January 16, 2020	Ministry of Transportation City of Toronto TTC City of Mississauga GTAA	<ul style="list-style-type: none"> • General Project Update • Alignment • Corridor and Stations Overview • Communications • EPR Addendum
January 27, 2020	GTAA	<ul style="list-style-type: none"> • Public Consultation • EPR Addendum
February 7, 2020	Ministry of Transportation City of Toronto TTC City of Mississauga GTAA	<ul style="list-style-type: none"> • General Project Update • Alignment • Tunnel Configuration • Station Designs • Communications • EPR Addendum

Date	Agencies	Topics Discussed
February 13, 2020	GTAA	<ul style="list-style-type: none"> Public Consultation EPR Addendum
February 20, 2020	GTAA	<ul style="list-style-type: none"> Tunnel Alignment
March 9, 2020	GTAA	<ul style="list-style-type: none"> Public Consultation EPR Addendum
March 10, 2020	TRCA	<ul style="list-style-type: none"> General Project Update Alignment Corridor and Stations Overview EPR Addendum
March 11, 2020	City of Toronto TTC	<ul style="list-style-type: none"> General Project Update Station Designs

5.5 Indigenous Communities

Indigenous communities were identified through consultation with the MECP and Ministry of Indigenous Affairs, this letter to MECP and their response is included in Appendix K.

Metrolinx sent notification directly to potentially interested Indigenous communities in advance of the online public consultation on March 24, 2020 to the following Indigenous communities:

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

No comments were received from any Indigenous Communities regarding the Online Public Information Session.

Table 5-3 provides a summary of Indigenous community correspondence.

Table 5-3: Summary of Indigenous Community Correspondence

Indigenous Community	Date	Summary
Six Nations of the Grand River	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
	May 4, 2020	Six Nations informed Metrolinx that the Stage 1-2 Archaeological Assessment has been reviewed and there are no further comments.
Kawartha Nishnawbe First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
	March 26, 2020	Kawartha Nishnawbe inquired if Metrolinx would be providing resources for their review of the report.
Mississaugas of the Credit First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
Métis Nation of Ontario	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
Huron-Wendat Nation (HWN)	March 25, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx sent a transmittal for review of the draft Stage 1-2 Archaeological Assessment.
	April 20, 2020	HWN provided comments to the Stage 1-2 Archaeological Assessment.
Haudenosaunee Confederacy Chiefs Council (HCCC)	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
	April 13, 2020	HCCC stated that there are incurred costs for the review of the Stage 1 Archaeological Assessment.
	April 30, 2020	Metrolinx informed HCCC that they are available to meet to discuss the review of the Stage 1 Archaeological Assessment.
Williams Treaties First Nations		
Alderville First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.

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Indigenous Community	Date	Summary
Curve Lake First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
	March 25, 2020	Curve Lake inquired if the Stage 1-2 Archaeological Assessment was still in draft form. Metrolinx confirmed that the report was still a draft.
Hiawatha First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
Mississaugas of Scugog Island First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
Beausoleil First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
Chippewas of Georgina Island	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1. Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review.
Chippewas of Rama First Nation	March 24, 2020	Metrolinx provided a formal letter with high level project details and information regarding the online open house starting April 1 Metrolinx provided a link to the draft Stage 1-2 Archaeological Assessment for review

5.6 Elected Officials

Metrolinx sent notification directly to local elected officials in advance of the online public consultation on March 23, 2020 to the following:

- Hon. Doug Ford - Premier of Ontario, MPP - Etobicoke North;
- Hon. Kinga Surma, MPP - Etobicoke Centre;
- Ms. Faisal Hassan, MPP - York South - Weston;
- Mr. Deepak Anand - MPP - Mississauga - Malton;
- Councillor Michael Ford, Ward 1 Etobicoke North;
- Councillor Stephen Holyday, Ward 2 Etobicoke Centre;
- Councillor Frances Nunziata, Ward 5 York South-Weston;
- Ms. Daniella Magisano, Senior Advisor, Legislative Affairs, Office of the Mayor (Toronto);
- Councillor Carolyn Parrish, Ward 5 Mississauga;
- Hon. Kristy Duncan, MP - Etobicoke North;
- Mr. Yvan Baker, MP - Etobicoke Centre;
- Hon. Ahmed Hussen, MP - York South - Weston; and
- Hon. Navdeep Bains, MP - Mississauga - Malton.

No comments were received from local elected officials. Elected officials were offered a briefing prior to posting of the Notice of EPR Addendum.

5.7 Utilities

Utility impacts are still being confirmed and Metrolinx will engage and set up meetings with affected utilities once impacts are confirmed and the design progresses.

5.8 Circulation of Draft Environmental Project Report Addendum

In April 2020 the draft EPR Addendum was provided to representatives from federal government agencies, provincial government agencies, municipal departments and services and broader private sector, and utilities. Comments received during the review of the draft EPR Addendum have been addressed as necessary and Table 5-1 provides a summary of agency correspondence.

5.9 Review of the Environmental Project Report Addendum

In accordance with O. Reg. 231/08, a Notice of EPR Addendum was issued alongside public posting of this EPR Addendum. The Notice of EPR Addendum was posted on the project website, in local newspapers, sent via Canada Post unaddressed airmail to residents and businesses within 100 m of project, direct mail to residents and businesses within 50 m of the project, distributed by email to all contacts on the project distribution list, anyone who has expressed an interest in the Project, external agencies, conservation authorities, municipalities and Indigenous communities and organizations.

The Notice of EPR Addendum provides public and all communities with the remaining milestones and dates for the Project, along with the opportunity to review the EPR Addendum and submit comments. The Notice of EPR Addendum template can be found in Appendix K.

As noted in Section 1.5.1, following the 30 day public review period, the Minister has 35 days to provide comment and decide whether the EPR Addendum impacts are of provincial importance and if the proponent is required to take further steps. Under O. Reg. 231/08, the Minister does not have the authority to either approve or refuse a transit project. The Minister may issue one of three notices to the proponent:

- A notice to proceed with the transit project as planned in its EPR;
- A notice that requires the proponent to take further steps, which may include further study or consultation; or
- A notice allowing the proponent to proceed with the transit project subject to conditions.

The construction or implementation of the transit project subject to the EPR Addendum may proceed if no notice or Notice to Proceed is received, or if the requirements of the Notices have been satisfied (bullets 2 and 3 above). Subject to these requirements, the transit project may proceed subject to any other required approvals.

6. Commitments to Future Work

This section summarizes Metrolinx's commitments to future action during preliminary and detail design of the Project. Details of the commitments and future work requirements related to mitigation of impacts are discussed in further detail in Section 4 of this report, and presented in Table 6-1.

6.1 Permits and Approval

Metrolinx will secure necessary permits and approvals for the implementation of the Project. In addition to the commitments to future work outlined in Table 6-1, additional impact assessments and permits and approvals obtained for the proposed works, as outlined in the following sections, may identify the need for additional mitigation. Any additional mitigation measures required in connection with a permit or approval shall be implemented.

6.1.1 ***Federal***

6.1.1.1 *Impact Assessment Agency of Canada*

Impact Assessment Act (IAA), 2019

The Impact Assessment Agency of Canada (IAAC) has determined the current project does not require assessment under IAA. If the project description changes, Metrolinx will consult with IAAC to confirm their requirements.

6.1.1.2 *Environment and Climate Change Canada*

Species-at-Risk Act

Potential SARA Permit requirements are not required at this stage during conceptual design and will be reviewed during the next design phase to review the most current list of regulated species and results of updated field work.

Migratory Birds Convention Act (MBCA), 1994

Where possible, vegetation removal shall take place outside of the primary breeding bird season (April 1 to August 31). If vegetation must be removed during the overall bird nesting season, nest and nesting activity searches will be conducted by a qualified Biologist within 48 hours prior to vegetation removal.

If construction activities occur during the bird nesting season (April 1 to August 31), bird exclusion methods such as covering potentially suitable nesting locations on machinery, equipment or stockpiled materials in addition to other types of exclusion methods shall be implemented to prevent migratory birds from accessing and building nests in the construction site. If a nest is found in the construction site, all work in the immediate vicinity must stop and a Qualified Biologist be contacted to determine appropriate avoidance measures in order to avoid contravention of the *MBCA*.

Table 4-5 describes the prescribed avoidance timing windows and associated mitigation measures required for vegetation removal and any further migratory breeding birds surveys that may be undertaken.

6.1.2 **Provincial**

6.1.2.1 *Ministry of the Environment, Conservation and Parks (MECP)*

Endangered Species Act

The Endangered Species Act identifies, protects, and promotes stewardship for the protection and recovery of species at risk. All requirements of the ESA will be met. Species-specific mitigation measures will be implemented based on any recommended surveys undertaken prior to construction, and consultation with MECP.

If SAR are present and conservation strategies have been developed by MECP, MECP will be consulted to determine the commitments in the recovery strategy.

MECP will be consulted to determine if additional monitoring measures and corrective actions are required further to the implementation of identified mitigation measures. MECP will be consulted regarding the results of additional surveys to determine appropriate mitigation, monitoring and compensation, if warranted.

Potential ESA Permit requirements will be reviewed during Detail Design relative to known species in the context of the most current list of regulated species and results of updated field work.

Ontario Water Resources Act

The Ontario *Water Resources Act* (Section 34) requires anyone taking more than a total of 50,000 litres of water in a day, with some exceptions, to obtain a water-taking permit from the MECP. The EASR is a web-based system that allows businesses to register certain water taking activities involving takings greater than 50,000 L/day but less than 400,000 L/day, while a Permit to take Water (PTTW) is required when the proposed dewatering pumping rate exceeds the 400,000 L/day threshold level. Surface water diversions do not need to be registered under an EASR or PTTW.

Requirements for water taking permits, such as a PTTW or registration under the MECPs EASR shall be reviewed in the next design phase and obtained prior to dewatering activities greater than 50,000 L/day.

Environmental Protection Act (EPA)

Activities regulated under the *Environmental Protection Act*, 1990, Chapter E.19, must be carried out in accordance with the Act, the applicable regulations and the guidelines administered by the ministry. In many cases this requires obtaining an environmental compliance approval under Part II.1 of the EPA or registering in the EASR under Part II.2 of the EPA. Permits and approvals specific to the Project include, but are not limited to:

- Environmental Compliance Approvals (ECAs) for Noise and Vibration in accordance with the Environmental Protection Act (through MECP) may be required for the TPSS'.

6.1.2.2 Ministry of Transportation (MTO)

The number and location of proposed EEBs for the project will be reviewed in consultation with MTO as the design progresses. These may require encroachment permits which necessitate MTOs approval.

6.1.3 Municipal

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

6.1.4 Conservation Authorities

Metrolinx will engage with the TRCA as detailed design advances, including regarding compensation and post-planting monitoring.

6.1.5 Utilities

Co-ordination with the CoT, CoM, and the relevant private utilities will be undertaken during detailed design. 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. The CoT and the CoM will be engaged regarding impacts to municipal servicing and required permits will be obtained prior to construction, as required.

Metrolinx will engage Hydro One Networks Inc. during the Reference Concept Design of the tunnel and other relevant design elements and obtain all necessary agreements/permits prior to construction.

6.2 Environmental and Technical Disciplines

6.2.1 *Summary of Future Commitments, Mitigation and Monitoring Requirements*

A summary of EPR Addendum commitments is provided in Table 6-1. All applicable permits, licences, approvals and monitoring requirements under environmental laws shall be reviewed, confirmed and obtained by Metrolinx prior to the construction of the Project.

Table 6-1: Summary of Future Commitments, Mitigation Measures, and Monitoring Requirements

Discipline	Project Phase	EPR Commitments: Mitigation Measure (or related action) or Future Commitment
Natural Environment		
Hydrogeology/ Groundwater	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-1; andAdditional hydrogeological assessment studies will be undertaken and dewatering and discharge requirements will be assessed as the design progresses and will consider applicable TRCA guidelines and policies including TRCA <i>Geotechnical Engineering Design and Submission Plan Guidelines</i> and TRCA <i>Technical Guidelines for the Development of Environmental Management Plans for Dewatering</i>. TRCA will be consulted for the review of the hydrogeological investigations as they become available.
Surface Water/Drainage	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-2;The location of the portals, stations, EEBs and TPSS will avoid flood vulnerable areas to the extent possible;During detailed design additional drainage and floodplain assessment studies will be undertaken and the following TRCA policy programs and guidelines will be reviewed to design components including EEBs, stations, and TPSSs:<ul style="list-style-type: none"><i>Stormwater Management Criteria</i> (TRCA, 2012);<i>The Living City Policies</i> (TRCA, 2014)<i>Low Impact Development Guidelines for Storm Water Management Design</i> (TRCA, 2010);<i>Erosion and Sediment Control Guidelines for Urban Construction</i> (TRCA, 2006);<i>Geotechnical Engineering Design and Submission Plan Guidelines</i> (TRCA, 2007); and<i>Environmental Impacts Statement Guideline</i> (TRCA, 2014).The long term stable top of slope will be delineated as part of detailed design, and will inform design;Where the stabilization is required due to the active erosion in the valleys, the stabilization will be designed by geotechnical engineer and a minimum safety factor of 1.50 will be met after stabilization;In the event that the works require the ground improvement (e.g., preloading), the ground improvement will be designed by geotechnical engineer and the extent of the additional disturbed zone during the implementation of the ground improvement will be determined in the site plan and cross-sections and all necessary provisions for the design and implementation will be presented on the drawings along with supporting design documents;TRCAs updated floodplain maps and model for Mimico Creek (May 2020) will be utilized in the next design phase to inform the project design, as required;The HEC-RAS model will be updated in the next design phase to include grading and structures that are proposed in the floodplain and to demonstrate that there will be no floodplain impacts (i.e. no increase in floodplain elevation) upstream or downstream of the site;Engagement with TRCA will be continued as the design progresses to explore the potential for incorporation of additional stormwater quality control measures;Slope stability assessment studies will be undertaken as the design progresses, in consultation with TRCA, where applicable;The project will consult with TRCA regarding potential modifications to the design if the setback against the long-term erosion hazard is determined to be insufficient; andOpportunities to incorporate natural heritage features, integrated art, environmental education and stewardship into wayfinding character will be considered (e.g., graphics and sign elements in the station designs, entrances and pedestrian access points).
Fish and Fish Habitat	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-3;Ongoing consultation with TRCA, DFO and Toronto Water, is warranted and will continue, as detail design progresses and construction methodology for the crossing of the Humber River is identified;The TRCA <i>Stream Crossing Guide</i> will be followed during the detailed design phase for the Humber River guideway crossing;

Discipline	Project Phase	EPR Commitments: Mitigation Measure (or related action) or Future Commitment
		<ul style="list-style-type: none">• Conduct a geomorphologic assessment study to determine the site appropriate erosion threshold at the Humber River guideway crossing as part of the SWM plan;• An ESC Plan will be developed in line with TRCAs <i>Erosion and Sediment Control Guidelines for Urban Construction</i> (2006) for the Humber River, prior to construction. This plan will conform to industry BMPs and recognized standard specifications. The ESC Plan will outline a process of resolving issues of extended encroachment, including clean-up, maintenance of ESC measures, and consideration of alternative ESC measures. All work zones will be clearly marked on detailed design drawings and the ESC Plan to indicate that no work will occur outside the work zone. ESC measures will be implemented prior to project construction and maintained during the construction phase in accordance with the ESC Plan;• A riparian planting plan will be developed to ensure cleared areas are restored to pre-construction conditions or better through planting of native trees and vegetation. The riparian planting plan will incorporate TRCAs <i>Guidelines for Post Construction Restoration and Seed Mix Guidelines</i>;• A Construction Emergency Response and Communications Plan will be developed prior to construction and followed throughout the construction phase (includes spill response and contingency plans);• A Hazardous Materials and Fuel Handling Plan will be developed prior to Project construction, to confirm that fuels and other hazardous materials are handled and stored in a safe manner during the construction process. Hazardous material and fuel storage, refueling and maintenance of construction equipment will occur within designated areas only;• A Spill Prevention and Contingency Plan will be developed and will be in place prior to construction of the Project, and during operations. Personnel will be trained in how to apply the plans and the plans will be reviewed on a regular basis to strengthen their effectiveness and facilitate continuous improvement. Spills or depositions into natural features will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will be on-site at all times during the work. Spills will be reported to the Ontario SAC at 1-800-268-6060;• An Aquatic Habitat Impact Assessment will be prepared prior to construction to identify specific effects and mitigation measures associated with detailed bridge design plans. Should agency consultation identify the need for additional fish community information, surveys will be completed as required;• If required, develop frac-out response plan for Mimico Creek and Silver Creek in the event drilling mud is released during tunnelling activities into the surrounding substrate and travels toward the surface beneath these watercourses. The frac-out response plan will include measures to stop work, contain the drilling mud, prevent further sediment migration to the watercourse, and identify materials and equipment needed to contain and clean up release on-site as a result of a frac-out;• Geotechnical studies will be completed prior to construction to identify any design and mitigation requirements within the vicinity of valleylands; and• Develop and implement Environmental Management Plans to mitigate impacts associated with construction dewatering. Measures to mitigate dewatering impacts to the Humber River will be identified by future hydrogeological assessment studies, which will consider applicable TRCA guidelines and policies including TRCA <i>Geotechnical Engineering Design and Submission Plan Guidelines</i> (2007) and <i>TRCA Technical Guidelines for the Development of Environmental Management Plans for Dewatering</i> (2013).
Vegetation and Vegetation Communities	Detailed Design/ Construction	<ul style="list-style-type: none">• Implement mitigation and monitoring requirements documented in Table 4-4;• Consultation with CoT and the CoM may be required to determine any requirements following the Metrolinx Vegetation Guideline;• Consultation with TRCA may be required to determine any requirements following the Metrolinx Vegetation Guideline;• Recommendations for additional monitoring related to vegetation removal within regulated areas may be determined through consultation with the TRCA;• Areas of vegetation removal will be confirmed during detailed design, and TRCA will be consulted regarding the compensation requirements following the Metrolinx Vegetation Guideline, which will consider TRCA's <i>Guideline for Determining Ecosystem Compensation</i> (June 2018);• A tree inventory may be completed during detail design for all city- or private-owned trees within 6 m of the construction footprint or 12 m of the construction footprint where it overlaps with RNFP policy area, where the construction footprint is at or near surface. A review of the final footprint during detail design shall be completed to confirm the potential injury or destruction to any trees protected under the CoT and CoM by-laws and thus confirm any necessary permits;• An Arborist Report will be prepared that meets regulatory requirements and is completed by an I.S.A. Certified Arborist. The report will also be completed with regard to the <i>Ontario Forestry Act R.S.O. 1990</i>, the <i>Metrolinx Vegetation Guideline</i> (2020), the <i>Endangered Species Act</i>, and other regulations, municipal by-laws and BMPs as applicable. The Arborist Report will include, but not be limited to, all trees and shrubs (i.e., woody vegetation) within 6 m of the construction project boundary, and all trees within 12 m of the construction project boundary if within a ravine protected area, that may be impacted by the project, including trees/shrubs to be preserved, removed or injured. Municipal by-laws will guide the minimum Diameter at Breast Height (DBH) that requires inventory and additional requirements for tree inventories and tree protection plans;

Discipline	Project Phase	EPR Commitments: Mitigation Measure (or related action) or Future Commitment
		<ul style="list-style-type: none">A Tree Protection Plan shall be developed to protect by-law regulated trees in accordance with the CoTs <i>Tree Protection Policy and Specifications for Construction Near Trees</i> and the CoMs <i>Private Tree Protection By-law</i>;Prior to the undertaking of tree removals, a Tree Removal Strategy/Tree Preservation Plan may be developed during detailed design to document tree protection and mitigation measures that follow the CoT <i>Tree Protection Policy and Specifications for Construction Near Trees Guidelines</i> (2016) and CoMs <i>Private Tree Protection By-law</i> and build upon the considerations and elements set out in the Metrolinx Vegetation Guideline, that adhere with best practices, standards and regulations on safety, environmental and wildlife protections;An IVM Implementation Action Plan will be developed and implemented that is in adherence with the Metrolinx Vegetation Guideline. 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;A Hazardous Materials and Fuel Handling Plan will be developed prior to Project construction, to confirm that fuels and other hazardous materials are handled and stored in a safe manner during the construction process. Hazardous material and fuel storage, refueling and maintenance of construction equipment will occur within designated areas only; andA Spill Prevention and Contingency Plan will be developed and will be in place prior to construction of the Project. Personnel will be trained in how to apply the plans and the plans will be reviewed on a regular basis to strengthen their effectiveness and facilitate continuous improvement. Spills or depositions into natural features will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan.
Wildlife and Wildlife Habitat	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-5;Species-specific mitigation measures will be implemented based on any recommended surveys undertaken prior to construction, and consultation with MECP;MECP should be consulted to determine whether acoustic monitoring or leaf-on surveys are required and location specific mitigation measures will be implemented based on any recommended surveys undertaken prior to construction, and consultation with MECP;Consultation with the TRCA as the design progresses to confirm any opportunities for ecological enhancements; andConsultation with applicable agencies to discuss compensatory measures for loss of wildlife habitat.
Air Quality	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-6.
Contamination	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-7;The project shall follow the Rules for Soil Management and Excess Soil Quality Standards in classifying and managing materials generated from the project, which stipulate preparation of the following plans and reports including:<ul style="list-style-type: none"><i>Assessment of Past Uses (note that the Limited Phase I ESA shall be updated to meet the requirements of O. Reg. 406/19);</i><i>Sampling and Analysis Plan;</i><i>Soil Characterization Report; and</i><i>Excess Soil Destination Assessment Report.</i>Generation and disposal or reuse of the materials generated as excess soil or waste shall be tracked according to the requirements of <i>O. Reg. 406/19 and 347/90</i>;A Qualified Person shall review the quality and quantity of fill materials being brought onto the project; andPhase II ESAs for specific property acquisitions shall be conducted depending on the property acquisition requirements and the results of the geo-environmental sampling.
Noise and Vibration	Detailed Design/ Construction/ Operations	<ul style="list-style-type: none">Metrolinx will conduct noise and vibration monitoring as recommended in Table 4-14, and as recommended in future studies/plans;An ECA may be required for the TPSS' and shall be obtained prior to start of construction;Metrolinx will ensure noise mitigation methods are re-evaluated once alignment and auxiliary equipment (e.g., TPSS, station ventilation, etc.) is fully defined in detailed design. Once re-evaluated for

Discipline	Project Phase	EPR Commitments: Mitigation Measure (or related action) or Future Commitment
		<p>detailed design, mitigation measures should be specific in nature and tailored to each individual equipment. All acoustic barriers should break direct line-of-sight and meet <i>Publication NPC-300</i> guidelines; and</p> <ul style="list-style-type: none">Develop communications and complaints protocol prior to start of construction.
Socio-Economic Environment		
Land Use	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-15.
Utilities	Detailed Design/ Construction	<ul style="list-style-type: none">In addition to the mitigation measures outlined in Table 4-18, information on future planned utility work will be coordinated with utility companies during further stages of design work and prior to construction.
Archaeological Resources	Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-19;Endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts (see Table 4-19);A Stage 2 Archaeological Assessment (and Stage 3 and/or 4 if directed in the Stage 2AA), will be completed during, and prior to the completion of, detail design, and well in advance of any ground disturbing activities;Include provisions in contract as recommended by archaeological assessment(s) (e.g., in case archaeological resources are discovered, protection of sites); andTRCA will be contacted should archaeological assessment required on TRCA property, and the archaeological assessment will be completed by TRCA staff, as requested.
Built Heritage Resources and Cultural Heritage Landscapes	Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-21.
Transportation		
Transit and Traffic Management	Detailed Design/ Construction	<ul style="list-style-type: none">Implement mitigation and monitoring requirements documented in Table 4-22, Table 4-23, Table 4-24 and Table 4-25;Supplementary traffic study to assess the potential permanent impacts to traffic and identify mitigation measures following design finalization of elevated Scarlett and Jane Stations, in the event the designs propose any changes to existing lane configurations and/or restrict the available sight distances thus impacting the traffic safety;Supplementary traffic study to explore the requirements of an additional access for the residential complex to the north of the proposed tunnel portal to the west of Scarlett Road, in the event the portal requires full closure of the existing driveway to the residential complex;Traffic Management Plans will ensure safe and efficient accommodation of displaced traffic, as well as mitigation of disruptions to MUP and sidewalk facilities during construction to the extent possible;Opportunities to enhance connectivity with other transportation modes at station locations will be considered as the design progresses (e.g., connectivity with facilities such as the MUP on Eglinton Avenue West and along the Humber River [Scarlett Road]); andFuture consultation with MTO staff to coordinate construction activities and manage traffic impacts in vicinity of MTO lands.

6.3 Mechanism for Changes to the Approved Plan

The Project presented in this EPR Addendum is not a static plan, nor is the context in which it is being assessed, reviewed, approved, constructed, and used. Given the potential for changes to the Project resulting from the approvals, detailed design, and construction processes, it is prudent to include in the EPR Addendum a comment on the responsibilities of the proponent should changes be required in the Project.

This EPR Addendum identifies the impacts associated with the Project presented herein, and the property envelope within which the Project can feasibly be constructed. The actual layout of project elements (e.g., stations, EEBs, etc.) are subject to detailed design and any variation from that shown in this EPR Addendum, unless it results in an environmental impact which cannot be accommodated within the committed mitigation measures, do not require additional approval under O. Reg. 231/08.

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