

Park Lawn GO Station

ENVIRONMENTAL PROJECT REPORT

DECEMBER 17, 2021

Lakeshore Development Inc

 **METROL NX**



**Lakeshore Development Inc.
Park Lawn GO Station
Environmental Project Report**

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Executive Summary

ES Section 1- Introduction and Project Overview

Lakeshore Development Inc. ("the Developer") has proposed the new Park Lawn GO Station to be developed in partnership with Metrolinx, located at the north end of 2150 Lake Shore Boulevard West in the City of Toronto ("the Project"). Hatch was retained by the Developer to undertake an Environmental Assessment (EA) for the proposed Park Lawn GO Station on the Lakeshore West rail corridor. The evaluation of environmental impacts of the proposed Park Lawn GO Station has been carried out in accordance with the Transit Project Assessment Process (TPAP). The TPAP is regulated by the *Environmental Assessment Act* (EAA) under Ontario Regulation 231/08 - Transit Projects and Metrolinx Undertakings (O. Reg. 231/08). The purpose of the TPAP is to ensure effects associated with the Project are clearly identified and mitigated to the greatest extent feasible. For TPAP purposes, Metrolinx is the proponent. The Developer will be constructing the Project and will be responsible for incorporating mitigation measures to address both construction and operation-related effects. Metrolinx will be responsible for operations and maintenance at the GO Station.

The Park Lawn GO Station will provide a stop between Mimico GO Station and Exhibition GO Station. The Park Lawn GO Station will be located 100 metres south of the Gardiner Expressway, 300 metres northwest of Lake Shore Boulevard West, on both sides of Park Lawn Road, and both sides of the Lakeshore West rail corridor within the City of Toronto.

The proposed station would include a fully accessible GO Station building, to be owned and operated by Metrolinx, with high quality connections to local transit. The preliminary design is more fully described in Section 3.3. The general location of the GO Station is presented in Figure ES-1.

This Project will be coordinated with the City of Toronto as appropriate to provide improved local transit access and connectivity to the GO Station, as well as additional and more frequent transit service.

The purpose and rationale of the Project is to provide a multi-modal transportation hub to support local and regional transit access and connectivity, while providing growth and opportunity in the area. The various business cases undertaken by Metrolinx in support of the development of the proposed GO Station are summarized, as well as the benefits of an integrated transit hub to support active transportation.



Figure ES-1: Park Lawn GO Station - Location

The Initial Business Case (IBC) (2016) recognized Park Lawn as a strategic location of dense development and growth, as well as opportunity to integrate with local transit in the area. The commitment of GO Regional Express Rail (now referred to as GO Expansion) including more frequent and faster service creates significant opportunity to realize a transit hub bringing together and integrating higher order transit, local transit, and other modes.

An updated IBC (2018) considered an updated service plan, realigned station to minimize impacts on existing infrastructure, and a redefined station design. The station at this location was supported in the updated IBC (2020) published on June 11, 2020.

The proposed Project footprint comprises the area where all works would occur (including construction, parking, grading, etc.). For each technical study, an individualized Study Area was created in order to represent the geographic area in which potential effects can occur.

ES Section 2 - Study Process

The TPAP is a focused impact assessment process developed for transit Projects that includes various components such as consultation, an effects assessment, mitigation, and documentation (MECP, Guide: Ontario's Transit Project Assessment Process, 2014). Proponents undertaking the TPAP are exempt from the requirements of Part II and Part II.1 of the *Environmental Assessment Act* (EAA) and Projects do not require approval by the Minister of the Environment, Conservation and Parks (MECP).

As outlined in the Transit Projects Regulation (MECP, 2015), the TPAP is only applicable to public sector proponents whose dedicated facilities or services are used exclusively for transit. As this Project involves the planning of a new GO Station, it meets the definition of a transit Project as set out in Schedule 1 of O. Reg. 231/08. In addition, the Project is guided by a public sector proponent (Metrolinx), and is therefore subject to the TPAP.

Proponents are required to document the TPAP in the form of an Environmental Project Report (EPR). The EPR serves to ensure that the TPAP is followed and that conclusions regarding the potential effects from a transit Project are documented.

The various technical studies that are appended to this EPR are further described in relation to the requirements set forth in the Transit Project Regulation.

An overview of the various Provincial Plans and Policies that provide guidance on development within the province are summarized in this Section.

ES Section 3 - Project Description

Section 3 outlines in detail the various components and proposed features of the Park Lawn GO Station. The design elements are reviewed against the key design criteria for the proposed station, including Metrolinx's GO Design Requirements Manual (DRM) and Metrolinx's Design Standards (DS-02, DS-03, DS-04, and DS-07). Design options, including track and station element configurations are discussed. The following design elements are further discussed:

- Platform Design

- Station Entrances
- Station Circulation
- Bicycle Facilities
- Landscaping
- Transit, Vehicular and Active Transportation Access
- Accessibility and Emergency Services
- Property Acquisition
- Utilities
- Construction Staging
- Stormwater Management
- Retaining Wall

The design of the station is being coordinated with other aspects of the overall Project including the development at 2150 Lake Shore Boulevard West (2150 Lake Shore), work on the adjacent Park Lawn Road, and the new Street A. The consultant teams for the station and adjacent development have been working closely to promote a design that is connected and well integrated, leading to certain station elements such as retail, staff and maintenance vehicle parking, bike parking and Pick-up Drop-off (PUDO) being incorporated into the adjacent development.

No vehicle parking is planned at the proposed GO Station in order to reduce vehicle traffic within the area and promote active and alternative transportation for local residents. The station is envisioned to support the increasing population within the Humber Shores area and provide access to regional transportation within walking distance.

Furthermore, this section outlines the outstanding issues that will be addressed prior to construction of the Project.

Development of the Park Lawn GO Station will result in acquisition of approximately 1.5 hectares of land from two adjacent landowners, including the City of Toronto and South Beach Condos and Lofts adjacent to the Lakeshore West rail corridor.

The following design considerations regarding utilities will be incorporated into the station design:

- Utility work along the rail corridor and the relocation of the existing communications tower north of the rail corridor ROW; and
- Incoming station services including domestic cold water, gas, and electricity, provided from the adjacent mixed-use development where required.

ES Section 4 - Existing Conditions

Existing conditions in relation to the various technical studies that were undertaken in support of the TPAP are summarized. Baseline information in relation to the built, natural, social, and cultural environments are further discussed in the technical studies.

Natural Environment Report (NER), Tree Inventory Plan (TIP), Slope Stability Analysis and Fluvial Geomorphic and Meander Beltwidth Assessment aim to address the current conditions of the physical, terrestrial, and aquatic environments within the Park Lawn GO Station Study area. Both the Stage 1 Archaeological Assessment and the Cultural Heritage Report aim to address the current conditions related to the cultural environment. Lastly, the Air Quality Impact Assessment, Noise and Vibration Impact Assessment and Transportation Brief address the current and future social and built environment.

ES Section 5 - Impact Assessment

The assessment of potential environmental effects, associated mitigation and monitoring measures, and future commitments for the Project for each of the prepared technical studies mentioned above are discussed. The impact assessment of the GO Station is structured according to the following aspects and Project components:

- GO Station Pre-Construction and Construction;
- GO Station Operations and Maintenance; and
- Climate Change.

The recommendations summarized in this section are based on information available at the time of the TPAP. Additional information regarding the more detailed impacts of the Project on the physical, aquatic, terrestrial, cultural, and built environment shall be reviewed and updated throughout the detailed design phase of the Project.

An Impact Assessment, Mitigation and Monitoring Plan has been developed in tabular format in order to summarize the effects and recommendations associated with each of the technical studies.

An Environmental Mitigation and Monitoring Plan (EMMP) will be developed in order to communicate the commitments, mitigation and monitoring activities that aim to provide direction such that implementation of the Project does not result in negative effects on matters of provincial importance related to the natural environment, properties of Cultural Heritage Value or Interest (CHVI), or on constitutionally protected Aboriginal or Treaty Rights.

The EMMP will also be updated to include potential environmental impacts or approval requirements that arise prior to construction and/or during additional environmental studies, that will be carried out for the Project.

ES Section 6 - Stakeholder Consultation

The public, agency and Indigenous Nation engagement activities initiated as part of the Project are summarized. As part of the TPAP, public and stakeholder consultation allows the proponent to engage all potentially interested persons in the proposed Project (Ministry of the Environment, 2004) and must include specific components and matters that are set out in Section 8 of the Ontario Regulation 231/08. The general purpose of the consultation program was to identify stakeholders, share the EPR and gather concerns and comments. The Stakeholder Consultation Report (SCR) (Appendix K) documents the consultation with the public and stakeholders, during the pre-TPAP and TPAP phases, and the Indigenous Engagement Report (IER) (Appendix L) documents the engagement with Indigenous Nations during the pre-TPAP and TPAP phases of the Project.

The consultation and engagement programs were initiated in the spring of 2020 and continued until the end of 2021.

Metrolinx engaged the Director of the Ministry of the Environment, Conservation and Parks Environmental Assessment Branch regarding the identification of Indigenous Nations that may have an interest in the proposed Park Lawn GO Station. As a result, the following Indigenous Nations were identified and engaged:

- Haudenosaunee Confederacy Chiefs Council;
- Huron-Wendat Nation;
- Kawartha Nishnawbe First Nation;
- Mississaugas of the Credit First Nation;
- Six Nations of the Grand River; and
- Williams Treaties First Nations:
 - Alderville First Nation;
 - Beausoleil First Nation;
 - Curve Lake First Nation;
 - Georgina Island First Nation;
 - Hiawatha First Nation;
 - Rama First Nation; and
 - Scugog Island First Nation.

These Nations and organizations were provided with Project information, study updates, draft reports for review and invitations to meet to discuss the Project and provide comments.

A Master Contact List was developed in order to identify and record information from regulatory agencies, City of Toronto, TRCA and local organizations who have either expressed an interest

in the Project, as well as those in proximity to the Study area, or who may have interest based on the proposed works.

The Master Contact list was regularly updated with revised contact information throughout the Project. The Master Contact List was used to distribute consultation materials, as well as at key milestones during the Pre-TPAP and TPAP phases. The list was also used to track correspondence with the various agencies and organizations that provided feedback to ensure that the comments were incorporated into the decision-making process for the EPR.

A Project website was developed in order to provide an overview of the proposed Project and the associated consultation activities. The website hosted both of the Public Meetings in an online, digital format with a Q&A platform used to collect comments from stakeholders and Indigenous Nations. The website was updated with Project information and notices throughout the consultation program.

Due to the COVID-19 pandemic and the limitations for social gatherings of more than 10 people, Public Meeting #1 was presented in an online format via a pre-recorded PowerPoint presentation and voice overlay. The presentation was posted on the Project website as a YouTube link on June 25, 2020 and remained for the duration of the Project. The public and review agencies were encouraged to submit comments through either the Project email address or through the Bang the Table platform via the Feedback Form. The presentation was screened using an *Accessibility for Ontarians with Disabilities Act* (AODA) compliance software and modified in order to provide closed captioning of the voiceover, colour contrast modifications and font resizing. Information presented at Public Meeting #1 included an overview of the Project and an update on the existing conditions outlined in each technical study.

Public Meeting #2 was also presented in an online format via a pre-recorded PowerPoint presentation and voice overlay. The presentation was posted on the Project website as a YouTube link on August 27, 2021 and remained for the duration of the Project. Comments from the public and from agencies were received by the Project Team through either the Project email address, Project phone number, or through the Bang the Table platform via the Feedback Form. The purpose of Public Meeting #2 was to share updates associated with the Project, including the results of technical studies, while providing the public with an opportunity to comment on the Project.

ES Section 7 - Permit and Approval Requirements

The permits and approvals identified within the technical studies that are required prior to Project construction are described. Permits and approvals related to federal, provincial, municipal legislation were considered, as well as those related to utilities and other transit corporations.

ES Section 8 - Future Commitments

Future commitments to be carried out prior to, during and after Project construction are detailed. A number of these commitments will be carried out throughout the detailed design phase.

ES Section 9 - References

All referenced reports, guidelines, standards, and other documents used in the preparation of the EPR are included in this section.

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Appendix K

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Appendix L Indigenous Engagement Report

Glossary of Terms and Acronyms

AAQC:	Ambient Air Quality Criteria
Adjusted Noise Impact Level:	Noise impact is the incremental increase in the pre-Project equivalent sound level resulting from the introduction of a GO Transit Project. The Adjusted Noise Impact is calculated by adjusting the value of the noise impact to indicate greater impact at higher pre-Project sound levels (Ministry of Environment and Energy, 1994)
Ambient Sound Level:	The sound level that is present in the environment, produced by noise sources other than the source under the impact assessment (Ontario Ministry of the Environment, 2013)
ANSI:	Areas of Natural and Scientific Interest
AODA:	<i>Accessibility for Ontarians with Disabilities Act</i>
AQIA:	Air Quality Impact Assessment
Arborist:	An expert in the care and maintenance of trees including an arborist qualified by the Ontario Training and Adjustment Board Apprenticeship and Client Services Branch, a certified arborist qualified by the International Society of Arboriculture, a consulting arborist registered with the American Society of Consulting Arborists, a registered professional forester or a person with other similar qualifications as approved by the General Manager.
ASI:	Archaeological Services Inc.
BHR:	Built Heritage Resource
BIA:	Business Improvement Area
BMP:	Best Management Practice
CAA:	<i>Conservation Authorities Act</i>
CAAQS:	Canadian Ambient Air Quality Standard
CAC:	Criteria Air Contaminant
Cadna/A:	Software package used for predicting sound levels due rail, road, and other sources.
CE:	Common Era
CFIA:	Canadian Food Inspection Agency
CHL:	Cultural Heritage Landscape
CHER:	Cultural Heritage Evaluation Report

CHVI:	Cultural Heritage Value or Interest
CNR:	Canadian National Railway
CO:	Carbon Monoxide
CO ₂ :	Carbon Dioxide
CO _{2eq} :	Carbon Dioxide equivalent
COC:	Contaminant of concern
COSEWIC:	Committee on the Status of Endangered Wildlife in Canada
COSSARO:	Committee on the Status of Species at Risk in Ontario
CPR:	Canadian Pacific Railway
CPTED:	Crime Prevention Through Environmental Design
CS:	Crown Structure
CTC:	Toronto and Region and Central Lake Ontario
CWS:	Canadian Wildlife Service
DAs:	Dissemination Areas
dB:	The standard unit of measure for unweighted sound pressure level (reference 2×10^{-5} Pa) or sound power level (10^{-12} W). A decibel is the unit of level which denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm of this ratio (Federal Transit Administration, 2006). This unit is used herein to quantify changes in overall levels.
dba:	The A-weighted sound pressure level (Ontario Ministry of the Environment, 2013). This unit is used herein to quantify overall noise level.
Developer:	Lakeshore Development Inc.
DFO:	Fisheries and Oceans Canada
DHB:	Diameter at Breast Height
DMP:	Sut Management Plan
EA:	Environmental Assessment
EAA:	<i>Environmental Assessment Act</i> (Ontario)
EAB:	Emerald Ash Borer
EASR:	Environmental Activity and Sector Registry
ECA:	Environmental Compliance Approval
ECCC:	Environment and Climate Change Canada

EF:	Emission Factor
e.g.:	example given
ELC:	Ecological Land Classification
EMCP:	Environmental Monitoring and Contingency Plan
EPR:	Environmental Project Report
Equivalent Continuous Sound Level:	The A-weighted sound level of a steady sound carrying the same total energy in the time-period T as the observed fluctuating sound. The time period T is given in hours (Ontario Ministry of the Environment, 2013).
ESA:	<i>Endangered Species Act</i>
Etc.:	et cetera
Frequency of Vibration:	The number of times that a periodically occurring quantity repeats itself in a specified period. With reference to noise and vibration signals, the number of cycles per second (Federal Transit Administration, 2006).
FTA:	Federal Transit Administration
GGH:	Greater Golden Horseshoe
GHG:	Greenhouse Gas
g/h:	grams per hour
g/km:	grams per Kilometre
g/m ² :	grams per square metre
g/vehicle/km:	grams per Vehicle/Kilometre
GO:	GO Transit
GPGGH:	Growth Plan for the Greater Golden Horseshoe (2019)
Growth Plan:	A Place to Grow: Growth Plan for the Greater Golden Horseshoe
GTA:	Greater Toronto Area
GTHA:	Greater Toronto and Hamilton Area
GVWR:	Gross Vehicle Weight Rating
HC:	Hydrocarbon
HDBT:	Transit and other Urban Buses
HDV:	Heavy Duty Vehicles
Hertz (Hz):	The unit of acoustic or vibration frequency representing cycles per second.
HIA:	Heritage Impact Assessment

HVA:	Highly Vulnerable Aquifer
HVAC:	Heating, ventilation, and air-conditioning
IAA:	<i>Impact Assessment Act</i>
IBC:	Initial Business Case
IPPC:	Intergovernmental Panel on Climate Change
ISA:	International Society of Arboriculture
km:	Kilometre
km/h:	Kilometre per hour
lb:	Pound
LCP:	Living Cities Policy
L _{eq} :	Equivalent Continuous Sound Level. The A-weighted sound level of a steady sound carrying the same total energy in the time period T as the observed fluctuating sound. The time-period T is given in hours (Ontario Ministry of the Environment, 2013).
LIO:	Land Information Ontario
LTSTOS:	Long-Term Stable Top of Slope
LW:	Lakeshore West
m:	Metre
masl:	Metres above sea level
mbgs:	Metres below ground surface
m/s:	Metres per second
MBCA:	<i>Migratory Birds Convention Act</i>
MHSTCI:	Ministry of Heritage, Sport, Tourism and Culture Industries
MMAH:	Ministry of Municipal Affairs and Housing
MNR/MNRF/MNDMNRF:	Ministry of Natural Resources/Ministry of Natural Resources and Forestry. The Department of Lands and Forests became the Ministry of Natural Resources in 1972. The Ministry of Natural resources changed its name to the Ministry of Natural Resources and Forestry on June 24, 2014. The Ministry of Northern Development merge with the Ministry of Natural Resources and Forestry on June 25, 2021. Thus, MNR, MNRF and MNDMNRF are considered to be synonymous for the purposes of this Report.

MOE/MOEE/MOECC/ MECP:	Ministry of the Environment/Ministry of the Environment and Energy/Ministry of the Environment and Climate Change. The Ministry of the Environment was created in 1972 and merged with the Ministry of Energy to form the Ministry of Environment and Energy (MOEE) from 1993 to 1997 and again in 2002. The Ministry of the Environment changed its name to the Ministry of the Environment and Climate Change (MOECC) on June 24, 2014. The Ministry changed its name to Ministry of the Environment, Conservation and Parks (MECP) on June 29, 2018. Thus, the MOE/MOEE/MOECC and MECP are considered to be synonymous for the purposes of this Report.
MOVES:	Motor Vehicle Emission Simulator
Mt:	Mega-Tonnes
MTO:	Ministry of Transportation
MUP:	Multi-Use Path
NAAQS:	National Ambient Air Quality Standards
NAPS:	National Air Pollution Surveillance
NAQS:	National Ambient Air Quality Standards
NER:	Natural Environment Report
NHIC:	Natural Heritage Information Centre
NHS:	Natural Heritage System
NO:	Nitric Oxide
N ₂ O:	Nitrous Oxide
NO ₂ :	Nitrogen Dioxide
NO _x :	Nitrogen Oxides
Noise:	Unwanted sound (Ontario Ministry of the Environment, 2013)
NPRI:	National Pollution Release Inventory
NSA:	Noise Sensitive Area. Land over which users are sensitive to noise. Also referred to as Noise Sensitive Land use (Ontario Ministry of the Environment, 2013) that accommodates a residential dwelling, a building for commercial use, or a building for institutional use where occupants can be considered to be noise sensitive. Noise sensitive also considers vibration sensitive herein.
NPC:	Noise Pollution Control
NVIA:	Noise and Vibration Impact Assessment

O ₂ :	Oxygen
O ₃ :	Ozone
OASD:	Ontario Archaeological Sites Databases
OBA:	Ontario Butterfly Atlas
OBBA:	Ontario Breeding Bird Atlas
OGS:	Ontario Geological Survey
OLA:	Outdoor Living Area
OLM:	Ozone Limiting Method
OP:	An Official Plan. Describes an upper, lower or single-tier municipal council's policies on how land within their respective jurisdiction should be used. The Official Plan typically identifies where new industry, housing, offices, and shops will be located and how, and in what order, parts of the community will grow, among other issues.
O. Reg.:	Ontario Regulation
OWRA:	<i>Ontario Water Resources Act</i>
PAH:	Polycyclic Aromatic Hydrocarbon
Plane of Window:	A point in space corresponding with the location of the centre of a window of a noise sensitive space (Ministry of Environment and Energy, 1994).
PHP:	Provincial Heritage Properties
PA:	<i>Planning Act</i>
PM:	Particulate Matter
PM _{2.5} :	Respirable particulate matter
PM ₁₀ :	Inhalable particulate matter
POI:	Point of Impingement
Point of Vibration Assessment:	The location 5 metres to 10 metres away from the building foundation in a direction parallel to the tracks or adjusted as required to accommodate site conditions (Ministry of Environment and Energy, 1994).
POR:	Point of Reception is defined as any location on a noise sensitive land use where noise from a noise source is received. Noise sensitive land uses may have one or more points of reception (Ontario Ministry of the Environment, 2013).
PPB:	Parts per Billion

PPS:	Provincial Policy Statement 2020 - the statement of the government's policies on land use planning.
PUDO:	Pick-Up and Drop Off
PPV:	Peak Particle Velocity. The peak signal value of an oscillating vibration velocity waveform, usually expressed in millimetres/second in Canada (Federal Transit Administration, 2006).
Prohibited Construction Vibrations:	Maximum vibration peak particle velocity for construction activity.
PSW:	Provincially Significant Wetland
PTE:	Permission to Enter
RA:	Risk Assessment
Receptors:	Refer to "Point of Reception"
RER:	Regional Express Rail
RGA:	Rapid Geomorphic Assessment
RMS:	Root-Mean-Square Velocity. The square root of the mean-square value of an oscillating waveform, where the mean-square value is obtained by squaring the value of amplitudes at each instant of time and then averaging these values over the sample time (Federal Transit Administration, 2006).
RNFP:	Ravine and Natural Feature Protection Area
ROW:	Right-of-Way
RSAT:	Rapid Stream Assessment Technique
RTP:	2041 Regional Transportation Plan
S & G:	Standards & Guidelines
SAR:	Species at Risk
SARA:	<i>Species at Risk Act</i>
SASP:	Site and Area Specific Policy
SCC:	Species of Conservation Concern
SELU:	Socio-Economic and Land Use
SELUS:	Socio-Economic and Land Use Study
Sensitive Area:	Refer to "Noise Sensitive Area"
Sensitive Land Uses:	Refer to "Noise Sensitive Area"
Sensitive Receptor:	Refer to "Point of Reception"

SO ₂ :	Sulfur Dioxide
Sound Pressure Level:	The A-weighted sound level of a steady sound carrying the same total energy in the time period T as the observed fluctuating sound. The time period T is given in hours (Ontario Ministry of the Environment, 2013).
SUE:	Subsurface Utility Engineering
SWH:	Significant Wildlife Habitat
SWHTG:	Significant Wildlife Habitat Technical Guide
TGS:	Toronto Green Standards
TI:	Trunk Integrity
TIP:	Tree Inventory Plan
TMP:	Transportation Master Plan
TPAP:	Transit Project Assessment Process
TPZ:	Tree Protection Zone
TRCA:	Toronto and Region Conservation Authority
TTC:	Toronto Transit Commission
US EPA:	United States Environmental Protection Agency
VdB:	Vibration level in decibels (reference 10 ⁻⁶ in/sec or 2.54x10 ⁻⁵ mm/sec). This unit is used herein to quantify overall vibration levels using the FTA general calculation method.
Vehicles/h:	Vehicles per hour
Vibration:	An oscillation wherein the quantity is a parameter that defines the motion of a mechanical system (Federal Transit Administration, 2006).
VSA:	Vibration Sensitive Area. A residential dwelling or place where people ordinarily sleep or a commercial/industrial operation that is exceptionally sensitive to noise and vibration (Federal Transit Administration, 2006).
VOC:	Volatile Organic Compound
ZOI:	Zone of Influence is defined as the area of land within or adjacent to a construction site, including any buildings or structures, that potentially may be impacted by vibrations emanating from a construction activity where the peak particle velocity measured at the point of reception is equal to or greater than 5 mm/sec (City of Toronto, 2008).
µg/m ³ :	Micro-gram per cubic metre

1. Introduction

Lakeshore Development Inc. (“the Developer”) has proposed the new Park Lawn GO Station to be developed in partnership with Metrolinx, located at the north end of 2150 Lake Shore Boulevard West in the City of Toronto (“the Project”). Hatch was retained by the Developer to undertake an Environmental Assessment (EA) for the proposed Park Lawn GO Station on the Lakeshore West rail corridor. The evaluation of environmental impacts of the proposed Park Lawn GO Station has been carried out in accordance with the Transit Project Assessment Process (TPAP). The TPAP is regulated by the *Environmental Assessment Act* (EAA) under *Ontario Regulation 231/08 - Transit Projects and Metrolinx Undertakings* (O. Reg. 231/08). The purpose of the TPAP is to ensure effects associated with the Project are clearly identified and mitigated to the greatest extent feasible. For TPAP purposes, Metrolinx is the proponent. The Developer will be constructing the Project and will be responsible for incorporating mitigation measures to address both construction and operation-related effects. Metrolinx will be responsible for operations and maintenance at the GO Station.

The proposed Project will include:

- ◆ Two side platforms (north and south);
- ◆ Pick-up and drop off (PUDO);
- ◆ Secure bike parking and covered bicycle parking;
- ◆ Two-storey main station building (south of tracks);
- ◆ Two-storey secondary station building (north of tracks);
- ◆ Landscaping and paving around the north Station building;
- ◆ Pedestrian tunnel (under tracks) between the two Station buildings;
- ◆ Widening of the existing Park Lawn rail bridge;
- ◆ Maintenance and Metrolinx staff parking spaces;
- ◆ A pavilion with elevator and stairs north of the rail corridor and a sloped walkway south of the rail corridor, both west of Park Lawn Road;
- ◆ Protection for the future island platform;
- ◆ Electrification enabling work; and
- ◆ Signal work.

1.1 Project Overview

The Park Lawn GO Station will provide a stop between Mimico GO Station and Exhibition GO Station. The Park Lawn GO Station will be located 100 metres south of the Gardiner

Expressway, 300 metres northwest of Lake Shore Boulevard West, on both sides of Park Lawn Road, and both sides of the Lakeshore West rail corridor within the City of Toronto.

The proposed station would include a fully accessible GO Station building, to be owned and operated by Metrolinx, with high quality connections to local transit. The preliminary design is more fully described in Section 2. The general location of the GO Station is presented in Figure 1-1.

This Project will be coordinated with the City of Toronto as appropriate to provide improved local transit access and connectivity to the GO Station, as well as additional and more frequent transit service.

1.1.1 Purpose of the Project

The purpose of the Project is to provide a multi-modal transportation hub to support improved local and regional transit access and connectivity. The proposed GO Station would provide a new stop along the Lakeshore West rail corridor between Mimico GO Station and Exhibition GO Station.

1.1.2 Project Background and Initial Business Case

The Initial Business Case (IBC) (2016) recognized Park Lawn as a strategic location of dense development and growth, as well as opportunity to integrate with local transit in the area. The commitment of GO Regional Express Rail (now referred to as GO Expansion), including more frequent and faster service creates significant opportunity to realize a transit hub bringing together and integrating higher order transit, local transit, and other modes.

An updated IBC (2018) considered an updated service plan, realigned station to minimize impacts on existing infrastructure, and a redefined station design. The station at this location was supported in the updated IBC (2020) published on June 11, 2020. The IBC (2020) notes that the service concept assumes that all local trains stop at both Park Lawn and Mimico Station GO Stations and that it will be supportive of 15 minute or better service.



Figure 1-1: Park Lawn GO Station - Location

1.1.3 Description of the GO Station Study area

The Park Lawn GO Station will be located on both sides of the Lakeshore West rail corridor and provide a stop between Mimico GO Station and Exhibition GO Station. The Park Lawn GO Station will be located 100 metres south of the Gardiner Expressway and 300 metres northwest of Lake Shore Boulevard West, at the north end of the former Mr. Christie Cookie factory within the City of Toronto. The Study area is included in Figure 1-2.

The proposed Project footprint comprises the area where all works would occur (including construction, parking, grading, etc.). For each technical study, an individualized Study area was created in order to represent the geographic area in which potential effects may occur. A list of the Study Area dimensions for each technical study can be found in Table 1-1.

Table 1-1: Study area by Technical Study

Study	Study area
Natural Environment Report (NER)	Project footprint with a 120 m buffer
Tree Inventory Plan (TIP)	Project footprint with a 6 m buffer and a 12 m buffer for Ravine and Natural Feature Protection (RFNP) Area
Stage 1 Archaeological Assessment	Project footprint with a 50 m buffer
Cultural Heritage Report	Project footprint with a 50 m buffer
Socio-Economic and Land Use Study (SELUS)	Project footprint with a 400 m and 800 m buffer ¹
Air Quality Impact Assessment (AQIA)	Project footprint with a 300 m buffer to account for sensitive receptor, and one kilometre to the northeast and one kilometre to the southwest
Noise and Vibration Impact Assessment (NVIA)	Project footprint with a 300 m buffer
Transportation Brief	Project footprint and an area bounded by the Gardiner Expressway; Park Lawn Road; and Lake Shore Boulevard West
Slope Stability Analysis	Hazard Area associated with Mimico Creek (west of Park Lawn Road, and north of Lakeshore West rail corridor)
Fluvial Geomorphic and Meander Beltwidth Assessment	Mimico Creek extending from the Gardiner Expressway to the Lakeshore West rail corridor

1.1.4 Proponent

The Developer has proposed a new GO Station to be developed in partnership with Metrolinx located at 2150 Lakeshore Boulevard West in the City of Toronto. Metrolinx is the proponent under the TPAP.

Please note that due to changes in ownership during the TPAP, from First Capital REIT to Lakeshore Development Inc., earlier reports and Appendices may reflect the previous developer's name. For the purposes of this Report, First Capital REIT/Lakeshore Development Inc. are considered synonymous.

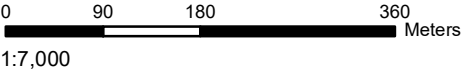
¹ Due to the lack of SELU features within the 400 m Study Area, a catchment area of 800 m was recognized to capture points of interest.



LEGEND

-  Proposed Project Footprint (approximate)
-  Study Area - 400 metres
-  Railway
-  Permanent Watercourse

- NOTES
- 1. Coordinate system - UTM NAD 1983 Zone 17N.
 - 2. Roads, Railways, Watercourses - Land Information Ontario.
 - 3. Station Footprint Based on Preliminary Station Design.



Project:		Park Lawn GO Station	
Figure Title:		Environmental Project Report - Study Area	
Prepared By:		HATCH	
Version: PL.EP.100-1		Review: 	Date: December 17, 2021
		Figure: 1-2	

2. Study Process

2.1 Transit Project Assessment Process

The TPAP is a focused impact assessment process developed for transit Projects that includes various components such as consultation, an effects assessment, mitigation, and documentation (MECP, Guide: Ontario's Transit Project Assessment Process, 2014). Proponents undertaking the TPAP are exempt from the requirements of Part II and Part II.1 of the EAA and Projects do not require approval by the Minister of the Environment, Conservation and Parks (MECP). The TPAP is legislated under *Ontario Regulation 231/08, Transit Projects, and Metrolinx Undertakings* (Transit Projects Regulation) (MECP, 2015) and defines a transit Project as:

(a) An enterprise or activity that is the planning, designing, establishing, constructing, operating, changing, or retiring of a facility or service that, aside from any incidental use for walking, bicycling or other means of transporting people by human power, is used exclusively for the transportation of passengers by bus or rail, or anything that is ancillary to a facility or service that is used to support or facilitate the transportation of passengers by bus or rail; or,

(b) A proposal, plan, or program in respect of an enterprise or activity described in clause (a) above.

As outlined in the Transit Projects Regulation (MECP, 2015), the TPAP is only applicable to public sector proponents whose dedicated facilities or services are used exclusively for transit. As this Project involves the planning of a new GO Station, it meets the definition of a transit Project as set out in Schedule 1 of *O. Reg. 231/08*. In addition, the Project is guided by a public sector proponent (Metrolinx), and is therefore subject to the TPAP.

The steps of the TPAP per Ontario's Transit Project Assessment Guide (MECP, 2014) are outlined in Figure 2-1.

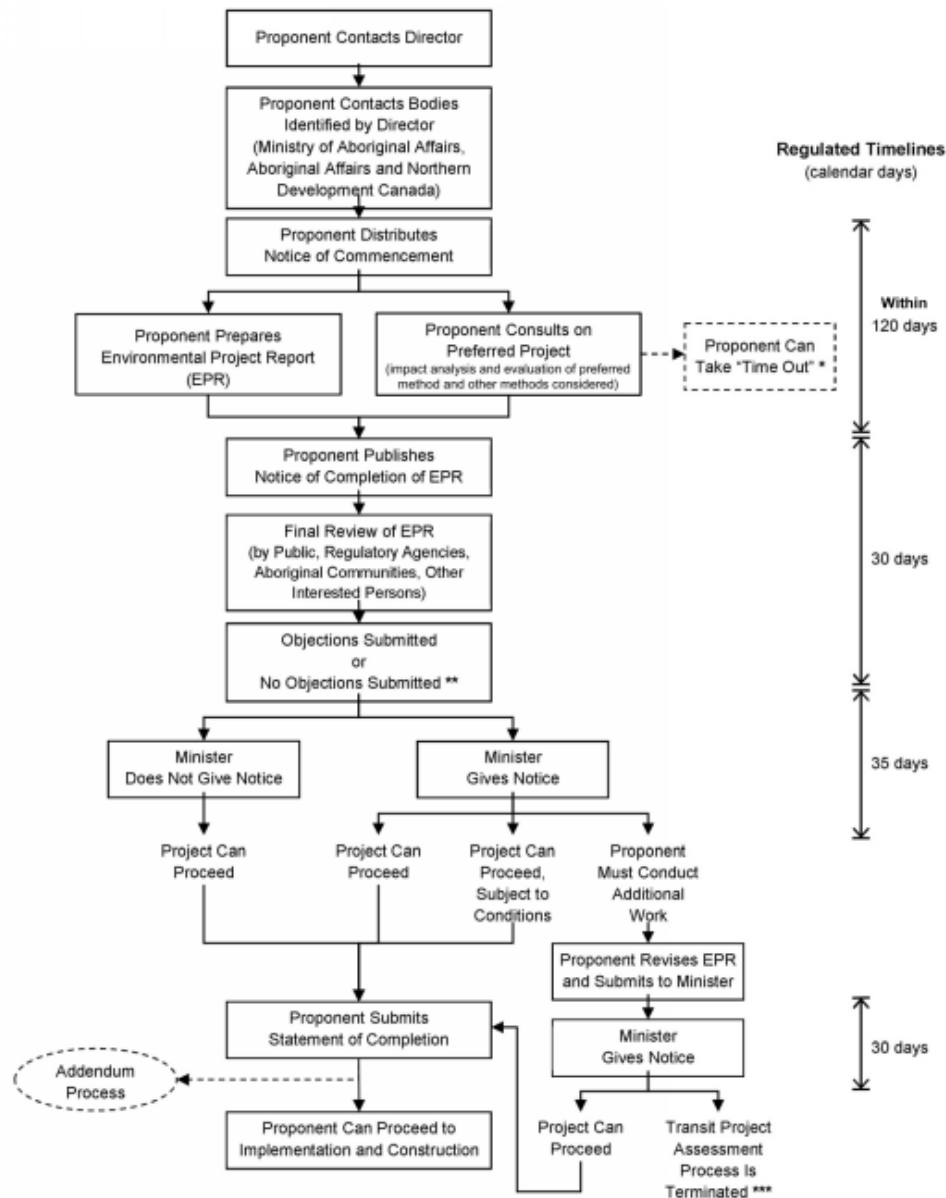


Figure 2-1: Transit Project Assessment Process (Figure 2 of the TPAP Guide)

2.1.1 Studies Conducted in Support of the Environmental Project Report

In order to address the requirements set out in the Transit Project Regulation, several technical studies were conducted by qualified individuals in their respective discipline. The technical studies aim to characterize the existing conditions within their respective study area (see Table 1-1) and assess the potential effects of the Project on the environment. The technical studies were completed during the pre-TPAP phase to characterize the existing conditions of the Study Area.

The technical studies are provided in the Appendices to this Environmental Project Report (EPR) as follows:

- Appendix A: Natural Environment Report;
- Appendix B: Tree Inventory Plan;
- Appendix C: Stage 1 Archaeological Assessment;
- Appendix D: Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment;
- Appendix E: Socio-Economic and Land Use Study;
- Appendix F: Air Quality Impact Assessment;
- Appendix G: Noise and Vibration Impact Assessment;
- Appendix H: Transportation Brief;
- Appendix I: Slope Stability Analysis;
- Appendix J: Fluvial Geomorphic and Meander Beltwidth Assessment;
- Appendix K: Stakeholder Consultation Report; and
- Appendix L: Indigenous Engagement Report.

2.1.2 Consultation

The Transit Project Regulation outlines consultation requirements that all TPAP Projects are subject to. Consultation involves the process of identifying all interested parties and notifying those who are potentially affected by the transit Project. This process also allows the proponent to respond to any potential concerns from interested parties. Interested parties may include property owners within 30 metres of the Project, municipalities, regulatory agencies, members of the public and Indigenous Nations.

Table 2-1 outlines the requirements within the consultation program in accordance with the Transit Project Regulation and the corresponding section within the Park Lawn GO Station EPR.

Table 2-1: Consultation Requirements and the Corresponding Sections in EPR

Requirement	Corresponding Section within the Park Lawn GO Station EPR
Providing information about the basis on which the transit Project was selected, which includes: • The assessment and evaluation of the impacts of the transit Project and other methods considered; • The criteria for the assessment and evaluation of those impacts; • Any studies completed with respect to those impacts. O. Reg. 231/08, s. 8 (4a)	Section 3.1.1, 4 and 5

Requirement	Corresponding Section within the Park Lawn GO Station EPR
Providing information about the proposed measures for mitigating any potential negative impacts of the transit Project. O. Reg. 231/08, s. 8 (4b)	Section 5.12
Providing information about the way the proponent intends to monitor and verify the effectiveness of the proposed mitigation measures. O. Reg. 231/08, s. 8 (4c)	Section 5.13 and 5.13
Discussing with Aboriginal communities any constitutionally protected Aboriginal or treaty right that is identified as potentially being negatively impacted by the transit Project. O. Reg. 231/08, s. 8 (5a)	Appendix L
Discussing with Aboriginal communities any measures identified by the Aboriginal community for mitigating potential negative impacts on constitutionally protected Aboriginal or treaty rights. O. Reg. 231/08, s. 8 (5a & b)	Appendix L

Key consultation initiatives involved with the Project include:

- A preparation of a Master Contact List which housed all stakeholder and community contact information;
- Notices were circulated to interested stakeholders/adjacent residents;
- Establishment of a Project-specific website (www.2150lakeshore.com/transitea/);
- Convening a series of Public Meetings;
 - Public Meeting No. 1: Conducted June 25 to July 20, 2020 in an online format due to COVID-19 public gathering restrictions; and
 - Public Meeting No. 2: Conducted August 27 to September 10, 2021 in an online format due to COVID-19 public gathering restrictions.
- Undertaking Indigenous Nation engagement;
- Conducting Technical Advisory Committee (TAC) meetings; and
- Providing technical reports for stakeholder and Indigenous Nation review and feedback.

The EPR consultation process was initiated in April 2020 and continued through to winter 2021. Further details regarding the Consultation Program carried out for the EPR are provided in Section 6.

2.1.3 **Environmental Project Report Organization**

Proponents are required to document the TPAP in the form of an EPR. The EPR details how the TPAP has been followed and documents the potential environmental effects from the transit Project, along with proposed mitigation and monitoring to minimize those effects. Table 2-2 outlines the requirements within the EPR in accordance with the Transit Project Regulation and the corresponding section within the Park Lawn GO Station EPR.

Table 2-2: Requirements and Corresponding Section in the EPR

Requirement	Corresponding Section within the Park Lawn GO Station EPR
A statement of the purpose of the transit Project and a summary of any background information relating to the transit Project.	Section 1.1.1
A final description of the transit Project including a description of the preferred design method.	Section 3
A description of any other design methods that were considered once the Project commenced the transit Project assessment process.	Section 3.1.3
A map showing the site of the transit Project.	Section 1.1.3
A description of the local environmental conditions at the site of the transit Project.	Section 4
A description of all studies carried out, including a summary of all data collected or reviewed and a summary of all results and conclusions.	Section 4
The assessments, evaluation, and criteria for any impacts of the preferred design method and any other design method (described above) that were considered once the Project's transit Project assessment process commenced (does not include pre-planning work).	Section 3.1.1 and 5
A description of any proposed measures for mitigating any negative impacts the transit Project might have on the environment.	Section 5.12
If mitigation measures are proposed, a description of the proposal for monitoring or verifying the effectiveness of the mitigation measures.	Section 5.2.3 and Section 5.12
A description of any municipal, provincial, federal, or other approvals or permits that may be required.	Section 7
A consultation record.	Section 6, Appendix K and Appendix L
If a "time out" was taken during the transit Project assessment process, a summary of each issue including: - A description of the issue; - A description of what the proponent did to respond to the issue and the results of those efforts; - The dates that notices for the "time out" were given to the Director and the Regional Director.	Not Applicable

2.1.4 Key Steps of the Transit Project Assessment Process

The key steps of the TPAP can be found in Figure 2 of the TPAP Guide (or Figure 2-1 in this EPR) and are listed below:

- Contact the Director (MECP) for a list of bodies that will aid in identifying Indigenous Nations that may be interested in the Project;
- Publish a Notice of Commencement of the TPAP;
- Assess environmental effects, develop mitigation, and consult with the public, stakeholders, Indigenous Nations, and other interested persons;
- Publish a Notice of Completion of the EPR within 120 days of the Notice of Commencement of the TPAP;
- Provide 30 days for the public, review agencies, Indigenous Nations, and other interested persons to review the EPR;
- Provide 35 days for the Minister of the Environment, Conservation and Parks to review the EPR;
- The Minister of the Environment, Conservation and Parks gives notice; and
- Submit a Statement of Completion.

The process defined above provides the proponent the ability to complete the TPAP within six months.

2.1.5 Objection Process, Minister's Review and Statement of Completion

Following a final review of the EPR by all interested parties, objections can be submitted to the Minister on the basis that the proposed Project may have a negative impact on matters of provincial importance; objections can relate to the natural environment, cultural heritage values or Indigenous or treaty rights.

The Minister has 35 days to provide a decision on whether a Project may

- proceed as planned,
- proceed subject to conditions, or
- must undergo additional work.

If the Minister does not give notice, the Project can proceed and the proponent must submit a Statement of Completion. Conversely, if the Minister provides notice that the proponent must conduct additional work, a revised EPR must be submitted and the Minister then has 30 days to give notice. The Statement of Completion must state whether the proponent will proceed with the Project in accordance with the EPR, a revised EPR, or the EPR subject to conditions set forth by the Minister.

2.1.6 Addendum Process

Section 15 of the Transit Project Regulation outlines the Addendum process for transit Projects. All changes to the Project that are inconsistent with the EPR require an Addendum, however if the original EPR has considered, assessed, and documented potential changes then the Project may not have to undergo an Addendum process. If an Addendum is required, it must include a description and reason for the change, an impact assessment of the proposed changes, proposed mitigation measures and a statement from the proponent on whether it is believed the change is significant and the reasoning to support the decision. If the change is deemed to be significant, the Notice of EPR Addendum should be provided to all interested parties including Indigenous Nations, property owners within 30 metres, the Director and the Regional Director of Environment, Conservation and Parks, as well as being posted in a newspaper ad and on the Project website.

2.2 Provincial Plans and Policies**2.2.1 Provincial Policy Statement**

The Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2020), was issued under the *Planning Act* (MMAH, 1990) for matters of provincial interest related to land use planning and development. The PPS aims to provide direction for appropriate development while protecting public health and safety, and the quality of both the natural and built environment (MMAH, 2020). The PPS promotes transportation developments that increase active transportation (i.e., walking, bicycling, rollerblading) and transit before other modes of travel (MMAH, 2020). The Project is representative of this type of multi-modal transportation and will also serve to provide connections to mixed-use high-density housing, employment opportunities and recreational facilities endorsed by the PPS.

2.2.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019

A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019 (Growth Plan) (MMAH, 2019), is an amendment to the previous growth plan prepared in 2013 under the *Places to Go Act*, 2005. The Growth Plan is a long-term plan designed to promote economic growth, increase housing supply, create jobs, and build communities with the goal of creating a healthier and more affordable lifestyle for citizens. One of the visions for the Growth Plan includes creating an integrated transportation network that makes travelling both within and between urban centres fast, convenient, and affordable (MMAH, 2019). The Growth Plan also emphasizes that multimodal options for public transportation supports reduced impacts to air quality within the region, contributing to the overarching concept of planning for a changing climate.

The Project supports the concepts and plans outlined in the Growth Plan.

2.2.3 Made-in-Ontario Environment Plan (2018 - Present)

Ontario's Made-in-Ontario Environment Plan was introduced in 2018 to provide Ontarians with "practical, sensible, and affordable solutions" for tackling climate change (MECP, 2018). The Plan is a living-document, meaning it is constantly evolving to meet the needs

of the provinces as new challenges, such as the COVID-19 pandemic, and new technologies arise. As the largest emitter of Greenhouse Gas (GHG) emissions within Ontario, the transportation sector is targeted by three new policies under the plan to reduce its emissions: Low Carbon Vehicles Uptake, the Federal Clean Fuel Standard, and the Use of Clean Fuels (ethanol gasoline, and renewable natural gas). The Project provides an opportunity to reduce GHG emissions by increasing accessibility to rail transit systems and promoting multimodal access.

2.2.4 ***Metrolinx Sustainability Strategy 2015 - 2020***

The Metrolinx Sustainability Strategy 2015 - 2020 (Metrolinx, 2016) was introduced in 2016 in order to provide a framework for developing improved sustainability practices within Ontario. The framework includes five different goals that Metrolinx endeavors to accomplish over the five year period, including becoming climate resilient, reducing energy use and emissions, integrating sustainability into the supply chain, minimizing impacts on ecosystems, and enhancing community responsibility.

The Project supports the concepts and plans outlined in the Metrolinx Sustainability Strategy by contributing to sustainability.

2.2.5 ***The Living City Policy***

The Living City Policy (LCP) (TRCA, 2014) was prepared by the Toronto and Region Conservation Authority (TRCA) to define the principles, goals, objectives, and policies for the administration of TRCA's legislated and delegated roles and responsibilities in the planning and development process within their jurisdiction. The LCP states that TRCA's Mission "...is to work with our partners to ensure that The Living City is built on a natural foundation of healthy rivers and shorelines, greenspace and biodiversity, and sustainable communities." The LCP has four strategic objectives: Healthy Rivers and Shorelines, Green space and Biodiversity, Sustainable Communities, and Business Excellence. The LCP encompasses advocacy (Section 6 of the LCP), environmental planning (Section 7 of the LCP) and regulation (Section 8 of the LCP).

Policies of the LCP applicable to the Project are summarized in Table 2-3:

Table 2-3: Applicable Living City Policies

Policy #	The Living City Policy Clause	Applicability to Project
7.3.1 b)	That development and site alteration not be permitted in the Natural System, except in accordance with the policies in Sections 7.4 and 7.5 and 8.4 to 8.13.	The Project is exempt through Policy 7.3.1 d) as it is considered an infrastructure Project.
7.3.1 c)	That infrastructure be located outside of the Natural System except in accordance with the policies in Sections 7.4 and 7.5 and 8.4 to 8.13.	The proposed Infrastructure is located within a Natural System; however, the proposed design meets the criteria laid out in LCP Sections 7.4.3.3.1 e), 7.4.4.1 a), d) through i), n) and o), 7.4.4.1.2, 8.4.1, 8.4.10, 8.4.11, 8.9.18.9.2, 8.9.3, and 8.9.4.

Policy #	The Living City Policy Clause	Applicability to Project
7.3.1 d)	That notwithstanding policies 7.3.1 a) through c), the following may be permitted within the Natural System, subject to the policies in Sections 7.4 and 7.5 and 8.4 to 8.13: •infrastructure,	The proposed Infrastructure is located within a Natural System; however, the proposed design meets the criteria laid out in LCP Sections 7.4.3.3.1 e), 7.4.4.1 a), d) through i), n) and o), 7.4.4.1.2, 8.4.1, 8.4.10, 8.4.11, 8.9.18.9.2, 8.9.3, and 8.9.4.
7.3.1.3 b)	That development and site alteration be directed to areas outside hazardous lands (flood hazard, erosion hazard, dynamic beach hazard) and hazardous sites (unstable soils, unstable bedrock), except as may be permitted by the policies in Sections 7.4 and 7.5 and 8.4 to 8.13.	The proposed Infrastructure is located within hazardous lands (erosion hazard); however, the proposed design meets the criteria laid out in LCP Sections 7.4.3.3.1 e), 7.4.4.1 a), d) through i), n) and o), 7.4.4.1.2, 8.4.1, 8.4.10, 8.4.11, 8.9.18.9.2, 8.9.3, and 8.9.4.
7.4.3.1 b)	To promote mitigation and remediation works for existing development and infrastructure within hazardous lands and hazardous sites through the preparation and review of an environmental assessment or comprehensive environmental study or technical study, to the satisfaction of TRCA.	Section 4.10 provides the assessment of the existing retaining wall system that currently protects the existing railway embankment and the Mimico Creek rail bridge. Section 5.9.2, 5.10.2 and 5.12 as well as Table 8-3 include the commitment for inspection and repair (as necessary) of the existing wall system at the toe of the embankment.
7.4.3.1 d) ii)	That notwithstanding 7.4.3.1 c), in circumstances where TRCA agrees that the modifications to hazardous lands and hazardous sites will result in permanent remediation and reduction of risk to existing development, serve to improve public safety or significantly improve existing hydrological or ecological conditions, such modifications may be considered where it can be demonstrated to the satisfaction of TRCA that: ii) acceptable justification has been provided through a subwatershed plan, an environmental assessment or comprehensive environmental study;	Section 3.1.2 and 3.1.3.1 provide a description of the track, switches and signals configuration that document the rationale for leaving the switching plant in it's current position under the Gardiner Expressway and its effect on platform positioning that result in a portion of the platforms extending into the Mimico Creek Hazard Lands and the mitigation proposed to move the signals as far east as possible to position the station platforms as far east as possible. Section 3.1.3.3 provides a description of alternatives considered for the sloped walkway to arrive at the proposed configuration. Section 3.1.3.2 provides a description of the process for submission and approval of a deviation from Metrolinx's DRM for reducing the platform widths and a commitment included in Section 8.1 for this process as part of 30% Design. Section 3.3.15 provides the proposed mitigation measure for supporting the north platform with a continuous retaining wall socketed into the bedrock so the

Policy #	The Living City Policy Clause	Applicability to Project
		platform itself and the live load from the tracks is carried by the proposed retaining wall. The toe wall would only have to support the remaining slope north of the platform and continue to protect the east abutment of the existing Mimico Creek bridge.
7.4.3.1 e)	To recognize that certain types of development and site alteration by their nature must locate within hazardous lands and hazardous sites, and the associated buffer. TRCA may support such works where they have been addressed through an environmental assessment, comprehensive environmental study, or technical report, completed to the satisfaction of TRCA in accordance with the policies of this section and Section 8.0 (Regulation). This may include, but is not limited to, infrastructure, passive or low intensity outdoor recreation and education, conservation or restoration Projects and remediation or mitigation works to protect existing development.	Section 3.1.2 and 3.1.3.1 provide a description of the track, switches and signals configuration that document the rationale for leaving the switching plant in it's current position under the Gardiner Expressway and its effect on platform positioning that result in a portion of the platforms extending into the Mimico Creek Hazard Lands and the mitigation proposed to move the signals as far east as possible to position the station platforms as far east as possible. Section 3.1.3.3 provides a description of alternatives considered for the sloped walkways to arrive at the proposed configuration. Section 3.1.3.2 provides a description of the process for submission and approval of a deviation from Metrolinx's DRM for reducing the platform widths and a commitment included in Section 8.1 for this process as part of 30% Design. Section 3.3.15 provides the proposed mitigation measure for supporting the north platform with a continuous retaining wall socketed into the bedrock so the platform itself and the live load from the tracks is carried by the proposed retaining wall. The toe wall would only have to support the remaining slope north of the platform and continue to protect the east abutment of the existing Mimico Creek bridge.
7.4.3.3.1 c)	That the limit of the erosion hazard be based on the natural state of the area without the use of mitigation or remediation works, unless the proposed works are consistent with the recommendations of an approved environmental assessment or comprehensive environmental study for the area, completed to the satisfaction of TRCA.	A Slope Stability Analysis (Appendix I) and Fluvial Geomorphology and Meander Beltwidth Assessment (Appendix J) were completed for the area of the proposed station within the Mimico Creek valley. An EA (as documented by this EPR) under the TPAP was conducted in consultation with the TRCA.

Policy #	The Living City Policy Clause	Applicability to Project
7.4.4.1 a)	Proposed works are consistent with the recommendations of an approved environmental assessment or comprehensive environmental study for the area, completed to the satisfaction of TRCA.	An EA under the TPAP; O. Reg. 231/08 is documented in this EPR.
7.4.4.1 b)	That infrastructure avoid locating within the Natural System.	Infrastructure development is located within a Natural System since the existing rail tracks cross Mimico Creek to the west of the proposed GO Station; however, the proposed design meets the criteria laid out in TLC Sections 7.4.3.3.1 e), 7.4.4.1 a), d) through i), n) and o), 7.4.4.1.2, 8.4.1, 8.4.10, 8.4.11, 8.9.1, 8.9.2, 8.9.3, and 8.9.4.
7.4.4.1 c)	That generally, linear infrastructure cross perpendicular to the Natural System and at its most narrow point.	Infrastructure development is located within a Natural System since the existing rail tracks cross Mimico Creek to the west of the proposed GO Station; however, the proposed design meets the criteria laid out in TLC Sections 7.4.3.3.1 e), 7.4.4.1 a), d) through i), n) and o), 7.4.4.1.2, 8.4.1, 8.4.10, 8.4.11, 8.9.1, 8.9.2, 8.9.3, and 8.9.4.
7.4.4.1 d)	That baseline environmental conditions be established early in the planning stages of municipal Master Plans (Transportation and Servicing), the environmental assessment process, or equivalent planning process.	An EA under the TPAP; O. Reg. 231/08 was completed as summarized by this EPR. Baseline environmental conditions are documented within the Natural Environment Report (Appendix A of this EPR) and the Tree Inventory Plan (Appendix B of this EPR).
7.4.4.1 e)	That the conditions established through policy 7.4.4.1 d) be used to make informed decisions among alternatives, with preference given to alternative(s) using siting, design, and construction technologies that avoid or minimize impacts to the Natural System.	Alternatives are documented in the Project Description (Section 3.1 of this EPR) and Impact Assessment of the Preferred Design (Section 5 of this EPR); however, the Gardiner Expressway Bridge and Mimico Creek are hard constraints for the GO Station design. Alternatives were considered during the Initial Business Case planning as documented in the 2018 and 2020 report.
7.4.4.1 f)	That infrastructure not create new natural hazards or aggravate existing natural hazards.	The Project is considered an <i>infrastructure</i> Project that is located adjacent to existing natural hazards. Mitigation measures were developed in order to ensure the Project does not aggravate existing hazards or create new ones.

Policy #	The Living City Policy Clause	Applicability to Project
7.4.4.1 g)	That where natural hazards exist, infrastructure consider options for remediation.	Options for the proposed GO Station are documented in Section 3.1.1 of this EPR.
7.4.4.1 h)	That the area of the Natural System to be occupied and/or traversed by infrastructure be minimized (including for access, construction, operations, and maintenance).	Infrastructure related to the proposed Project will incorporate measures in order to minimize impacts on the Mimico Creek valley.
7.4.4.1 i)	That where infrastructure is permitted within valley or stream corridors, wetlands, woodlands, and/or hazardous lands or hazardous sites, an environmental monitoring and contingency plan in accordance with TRCA Standards, may be required to address potential emergencies during construction and operation.	The proposed Project is considered <i>infrastructure</i> and is located within the Mimico Creek valley system. The commitment to the environmental monitoring and contingency plan is included in Table 8-1.
7.4.4.1 n)	That infrastructure Projects meet all of TRCA's stormwater management criteria, (water quantity, water quality, erosion control, and water balance - for groundwater and natural features), as outlined in Section 7.4.1 (Water Management) and TRCA's Stormwater Management Criteria Document.	The proposed Project is considered <i>infrastructure</i> and will contain a number of stormwater management features.
7.4.4.1 o)	That infrastructure Projects on TRCA-owned lands be avoided unless it is the only location technically compliant with the Infrastructure policies of Section 7.4.4.	The proposed Project is considered <i>infrastructure</i> . No TRCA lands are required as noted in Section 3.3.11 of this EPR.
7.4.4.1.2	That the location and design of transportation infrastructure crossing valley and stream corridors, including new, replacements or upgrades: i. cause no upstream or down stream impacts to flooding and erosion; ii. ensure safe conveyance of flood flows; iii. be situated at appropriate locations to avoid natural hazards; iv. maintain the ecological and hydrological functions of the valley or stream corridor by considering the following in accordance with TRCA Standards: • physical characteristics of the watercourse; • geomorphic processes of the watercourse; • aquatic and terrestrial habitat; • valley or stream corridor form; • aquatic and terrestrial wildlife passage; and • pedestrian passage (e.g., trails).	The proposed Project is considered <i>transportation infrastructure</i> that is located within the Mimico Creek valley system.

Policy #	The Living City Policy Clause	Applicability to Project
8.4.1	That development, interference or alteration will not be permitted within a regulated area, except in accordance with the policies in Sections 8.4 through to 8.13. In the event of a conflict between the policies applicable to the development, interference or alteration, the most restrictive policy shall apply.	The proposed infrastructure Project involves alteration of the landscape within the Study area and is located within TRCA regulated lands, however the proposed design meets the criteria laid out in LCP Sections 8.4.1, 8.4.10, 8.4.11, 8.9.1, 8.9.2, 8.9.3, and 8.9.4.
8.4.10	That where technical information to delineate the hazard or features is not available or where existing information does not meet current Provincial or TRCA standards, TRCA may require the limits of the flood and erosion hazards of valley and stream corridors, the Lake Ontario Shoreline flood, erosion and dynamic beach hazards, wetlands and watercourses be determined through site-specific field investigations and technical reports by a qualified professional, at the expense of the proponent in accordance with Provincial and TRCA standards, to the satisfaction of TRCA. The limit of hazardous lands will be based on the natural state of the area without the use of mitigation or remediation works unless the works are consistent with an environmental assessment or comprehensive environmental study for the area, supported by TRCA.	Project is located within hazardous lands in the TRCA regulation limit. A Slope Stability Analysis (Appendix I of this EPR) and Fluvial Geomorphology and Meander Beltwidth Assessment (Appendix J of this EPR) were conducted under the direction of TRCA following preliminary consultation.
8.4.11	That applications for permission to undertake development, interference or alteration in regulated areas must be accompanied by appropriate technical studies and/or assessments, site plans and/or other plans as required by TRCA. These studies/plans must be completed by a qualified professional, at the expense of the proponent, in accordance with Provincial and TRCA standards and demonstrate to the satisfaction of TRCA, how the applicable policies in Sections 8.4 through to 8.12 will be met.	Project is located within hazardous lands in the TRCA regulation limit. A Slope Stability Analysis (Appendix I of this EPR) and Fluvial Geomorphology and Meander Beltwidth Assessment (Appendix J of this EPR) were conducted under the direction of TRCA following preliminary consultation and are included in this EPR.
8.9.1	That development, interference and alterations associated with infrastructure will not be permitted within a Regulated Area except in accordance with the policies in Section 8 and in particular Section 8.4 (General Regulation Policies) and Section 8.9.	The proposed station is considered an <i>infrastructure</i> Project and is located within the TRCA regulated area.

Policy #	The Living City Policy Clause	Applicability to Project
8.9.2	That development, interference and alterations associated with new, replacement or expanded infrastructure may be permitted where it has been demonstrated that all feasible alternative sites and alignments have been explored through an environmental assessment process, comprehensive environmental study, or equivalent technical report, whichever is applicable based on the scale and scope of the Project, and where it can be demonstrated to the satisfaction of TRCA that: a) there is no increase in risk associated with flood hazards and erosion hazards to upstream or downstream properties within valley and stream corridors; b) there is no impediment to the safe passage of flood flows; e) where unavoidable, intrusions into natural features, areas and systems contributing to the conservation of land and areas providing ecological functions and hydrologic functions contributing to the conservation of land are minimized and appropriate remedial works of sufficient scale and scope to restore and enhance features and functions will be implemented in accordance with TRCA Standards; f) infrastructure has been designed in a manner that: i. does not decrease the base flow characteristics of watercourses; ii. minimizes the number of crossings and areas to be disturbed by infrastructure within valley and stream corridors or Lake Ontario shoreline reach and potential cumulative impacts; iii. considers options for remediation of existing natural hazards; iv. minimizes the area of construction disturbance and vegetation removal; v. maintains the predevelopment configuration of the flood plain, valley or stream corridors and the topography along the Lake Ontario shoreline; vi. does not impair surface water and groundwater quality through the introduction of pollutants such as sediments or contaminants;	The proposed station is considered an <i>infrastructure</i> Project within TRCA regulated lands. Alternatives are presented in the Project Description (Section 3.1.1), as well as Section 3.1.2 and 3.1.3.1 provide a description of the track, switches and signals configuration that document the rationale for leaving the switching plant in its current position under the Gardiner Expressway and its effect on platform positioning that result in a portion of the platforms extending into the Mimico Creek Hazard Lands and the mitigation proposed to move the signals as far east as possible to position the station platforms as far east as possible. - Section 3.1.3.3 provides a description of alternatives considered for the sloped walkways to arrive at the proposed configuration. - Section 3.1.3.2 provides a description of the process for submission and approval of a deviation from Metrolinx's DRM for reducing the platform widths and a commitment included in Section 8.1 for this process as part of 30% Design. Section 3.3.15 provides the proposed mitigation measure for supporting the north platform with a continuous retaining wall socketed into the bedrock so the platform itself and the live load from the tracks is carried by the proposed retaining wall. The toe wall would only have to support the remaining slope north of the platform and continue to protect the east abutment of the existing Mimico Creek bridge. In addition, details are provided in Mitigation sections (Sections 5.1.2, 5.9.2, 5.10.2 and summarized in Section 5.12 with summary of Future Commitments in Table 8-3) of the EPR.

Policy #	The Living City Policy Clause	Applicability to Project
	vii. does not prevent access for maintenance, evacuation, or during an emergency; viii. when applicable, is in accordance with the requirements of TRCA Standards for working on TRCA -owned lands dealing with archaeology, permission to enter and registered property interests; and ix. is consistent with current TRCA Standards for mitigation measures, sediment and erosion control, construction access routes, restoration plans and maintenance management plans for infrastructure Projects; g) that TRCA's stormwater management criteria, (water quantity, water quality, erosion control and water balance for groundwater and natural features), are met in accordance with TRCA's Stormwater Management Criteria Document; and h) that the interference is acceptable and/ or it has been demonstrated that, in the opinion of TRCA, the control of flooding, erosion, dynamic beach, pollution or the conservation of land will not be affected.	
8.9.3	That archaeological assessments are required for any infrastructure proposed for TRCA-owned lands, in accordance with the procedures for archaeological assessment in the TRCA Planning and Development Procedural Manual.	An Archaeological Assessment in accordance with the TRCA Planning and Development Procedural Manual was completed as part of the TPAP in order to document archaeological potential within the Study Area; No archeological potential was documented.
8.9.4	That where infrastructure is permitted within hazardous lands or hazardous sites, an environmental monitoring and contingency plan, in accordance with TRCA Standards, may be required to address potential emergencies during construction and operation.	The proposed station is considered an <i>infrastructure</i> Project The commitment to the environmental monitoring and contingency plan is included in Table 8-1.

2.3 City of Toronto

2.3.1 *City of Toronto Official Plan, 2015*

The City's Official Plan (OP) is intended to ensure that the City of Toronto evolves, improves, and realizes its full potential in areas such as transit, land use development, and the environment. The OP was adopted by City Council in November 2002 and approved in part by the Ontario Municipal Board in June 2006. The most recent OP consolidation of Chapters 1 to 5 and Schedules 1 to 4 was completed in 2019. The most recent consolidation of Chapters 6 and 7 was completed in June 2015. The goal of the OP is to build a better and healthier future for the Toronto area, with a focus on improving over the next 30 years.

The following policies are applicable to the Park Lawn GO Station.

The OP designates Environmentally Significant Areas and additions to existing Environmentally Significant Areas. Environmentally Significant Areas are defined by the City as spaces within Toronto's Natural Heritage System (NHS) that require special consideration to preserve their environmentally significant qualities.

Policy 3.4.10 generally prohibits development within the NHS. Toronto's NHS is a mosaic of natural features and their associated functions, including: landforms and physical features, watercourses, hydrological features and riparian zones, valley slopes and floodplains, forests, wetlands, successional areas, meadows, beaches and bluffs, vegetation communities. The NHS also includes species of concern and their habitat and significant biological features that are directly addressed by provincial policies, such as Areas of Natural and Scientific Interest (ANSI). As per Policy 3.4.10, "where the underlying land use designation provides for development in or near the natural heritage system, development will:

- *Recognize natural heritage values and potential effects on the natural ecosystem as much as is reasonable in the context of other objectives for the area; and*
- *Minimize adverse effects and when possible, restore and enhance the natural heritage system" (p. 3-35)."*

As per Policy 3.4.15d, "where Provincially significant natural heritage features will be protected by: avoiding new or expanding infrastructure unless there is no reasonable alternative, negative impacts are minimized and natural features and ecological functions are restored or enhanced where feasible.

As per Policy 4.3.6 (Development Criteria in Parks and Open Space Areas), the OP states that any development in Parks and Open Space Areas will protect, enhance, or restore trees, vegetation, and other natural heritage features, and maintain or improve connectivity between natural heritage features.

In addition, the OP notes that City owned land in the Green Space System (2.3.2.4) and in Parks and Open Space (4.3.8) cannot be sold or disposed of, but lands may be exchanged

for other nearby land of equivalent or larger area and comparable or superior green space utility.

2.3.1.1 *Toronto Green Standards*

The City of Toronto's Toronto Green Standards (TGS) were introduced in 2006 as a voluntary standard outlining sustainable design requirements for private and city-owned developments. Since 2006, the TGS has undergone several revisions to include structured tiers or levels of performance for development applicants to meet. Meeting Tier 1 standards is required by all applicants as part of the formal planning approval process while Tiers 2 to 4 are higher-level, voluntary standards which offer financial incentives through the Development Charge Refund Program. The TGS are focused on improving five key sectors:

- Air quality;
- Building energy, emissions, and resilience;
- Water quality and efficiency;
- Ecology and biodiversity; and
- Waste and the circular economy.

The third revision of the TGS included the adoption of the *Zero Emissions Building Framework*. The Framework was developed as a pathway for Toronto to reach near-zero emissions targets for building construction, with a reduction target of 80 percent by the year 2050. Using the Framework as a guide, the City of Toronto was able to refine the TGS best practices for energy efficiency to better address climate change targets, in a manner that is practical for the construction industry.

Most recently, City Council adopted the fourth revision of the TGS which will come into effect on May 1, 2022. Following extensive consultation with local government agencies, TGS Version 4 was introduced to better align with the City's climate change targets and is based upon the recommendations set forth in the Building Net Zero Emissions City Buildings: Corporate Real Estate's Net Zero Carbon Plan and the Net Zero Existing Buildings Strategy. Notably, Version 4 focuses on reducing carbon and enhancing green infrastructure through more aggressive targets with three rather than four tiers or levels of performance for applications to choose from. Expanding on the Zero Emissions Buildings Framework introduced in earlier revisions of TGS, Version 4 challenges applications in three additional key areas: embodied carbon, electric vehicle infrastructure, and water and ecology.

Applicability to the Project

In line with the Christie Secondary Plan's sustainability strategy, the Project will strive to comply with the highest level of the applicable TGS, at the time of Site Plan Application in support of the City of Toronto's sustainable design requirements. This strategy will include:

- Incorporating development features such as green roofs, rain gardens, bio-swales, and open planters;
- Responsibly sourcing raw materials used in construction; and
- Introducing bird-friendly features.

The TGS will continue to be referenced as the design progresses.

2.3.1.2 *Christie Secondary Plan*

An Official Plan Amendment (OPA) was proposed on April 21, 2021, to include the adoption of the new Christie Secondary Plan under Chapters 6 and 7 of the Official Plan (City of Toronto, 2021). The OPA went to Planning and Housing Committee on April 22, and City Council adopted it on May 5, 2021 with amendments. The Secondary Plan has been developed for the area east of Park Lawn Road and north of Lakeshore Boulevard West, otherwise known as Site and Area Specific Policy (SASP) Area 15. The Christie's Secondary Plan area will be transit-supportive by creating a walkable, pedestrian-oriented, mixed-use community centered on transit investment and integration. City staff have proposed the new Secondary Plan, Zoning By-laws, and Urban Design Guidelines as part of the amendment. The Plan would support future investments in transit infrastructure, create jobs, additional community services, and facilities within the mixed-use community. This is a multi-phase plan and could take up to 25 years to meet its commitments. In support of the Christie's Secondary Plan, the City of Toronto has also developed Christie's Urban Design and Streetscape Guidelines which will be followed for the design of the proposed Park Lawn GO Station.

Applicability to the Project

The construction of the Park Lawn GO Station is a key part of the Plan's commitment to creating new higher-order transit infrastructure.

3. Project Description

3.1 Overview

Metrolinx completed an Updated IBC (Metrolinx, 2020a) for the proposed Park Lawn GO Station in order to produce a more fulsome analysis of the station related to cost estimates, service levels, required infrastructure, and modelling tools. The updated concept has been refined to limit impacts to the existing signalling infrastructure, the natural environment, and the Gardiner Expressway (Metrolinx, 2020a).

3.1.1 IBC Design Options

The Park Lawn and Mimico Initial Business Case (Metrolinx, 2016) considered closing the existing Mimico GO Station if the proposed Park Lawn GO Station was opened due to the less than 2 km separation between the two GO Stations. The 2016 IBC noted substantial track work and reconstruction of the Gardiner Expressway overpass, which, when coupled with the negative impacts of closing the Mimico GO Station, recommended that the Park Lawn GO station not be carried forward.

Metrolinx reassessed the proposed Park Lawn GO Station in their 2018 updated IBC (Metrolinx, 2018d). Part of the assessment was consideration of splitting service between the existing Mimico GO Station and the proposed Park Lawn GO Station, so that each station would receive half of the local service when compared to the rest of the Lakeshore West line.

The 2018 Updated IBC also considered station location and configuration. One concept examined was having the proposed station located to the east of the Gardiner Expressway to service the Toronto Transit Commission (TTC) Humber Loop. While this station meets the 2 km spacing from the existing Mimico GO Station it performed poorly with regards to providing connectivity to the existing Humber Bay Shores community and the proposed 2150 Lake Shore Boulevard West redevelopment (2150 Lake Shore), as well as interfering with the existing rail switching plant located east of the Gardiner Expressway bridge.

The configuration of the GO Station adjacent to 2150 Lake Shore in the 2018 Updated IBC was centred over the existing Park Lawn Road bridge. This configuration pulled the station further west to minimize the potential impact to the existing rail switching plant. The summary of the constructability of this station noted that modifications to the existing Mimico Creek rail bridge would involve environmental impact. The 2018 Updated IBC found that the Park Lawn GO Station performed better than shown in the 2016 IBC and noted that the appropriate location for the station is adjacent to 2150 Lake Shore.

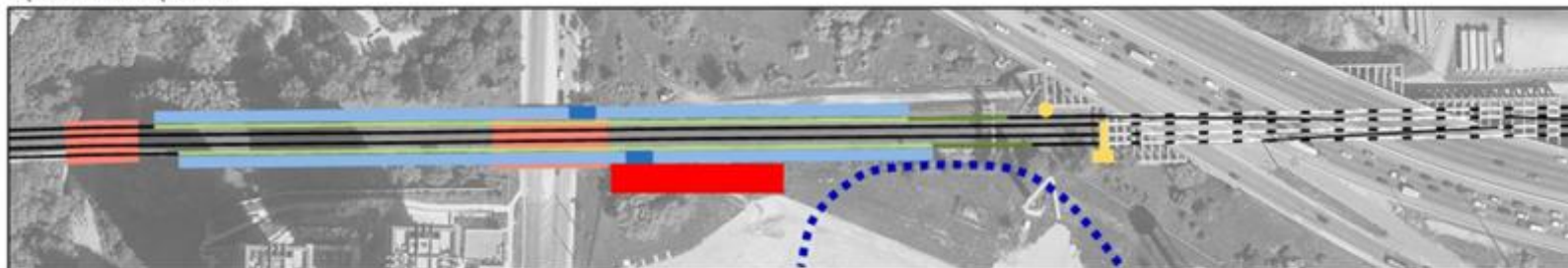
Assessment work continued with the Updated IBC in 2020 (Metrolinx, 2020a) with the consideration of two station configuration options: Option 1 with a full-length, 12-car platforms as per the GO Design Requirement Manual and Option 2 with shorter than standard 8-car platforms. The Updated 2020 IBC noted that door operation control on trains by the Customer Service Agent allowed doors to be opened only on all 12 cars (1-12), 8 cars (5-12), or 5 cars (1-5). The cars are numbered from east to west, with Car 1

located behind the locomotives at the east end of the train. Figure 3-1 illustrates the layout of the options considered. Option 2B was discounted because in order to function, the locomotive would need to stop east of the signals, which contravenes operation rules on the corridor, and effects operation of the two inner tracks. Both Option 1 and Option 2 consider moving the signal lights from the current location shown in the Option 2B configuration to the western extent of the Gardiner Expressway. In doing so the western end of the north and south platforms can be moved away from the Mimico Creek rail bridge, which was noted as a concern in the Updated 2018 IBC.

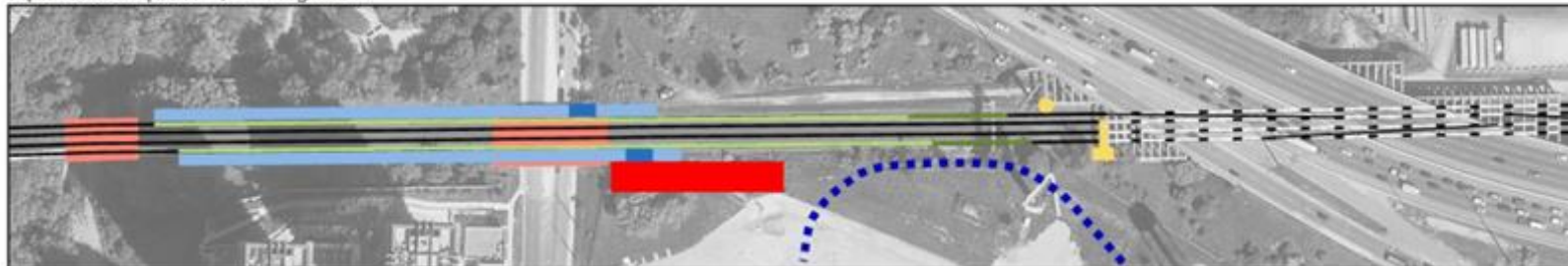
As noted in the Updated IBC (Metrolinx, 2020a), neither the 8 car or the 5 car scenarios will provide a sufficient level of service for passengers to get on or off the train in a timely manner without causing service delays based upon the predicted passenger demand. Additionally, due to the door control configuration, the 8-car scenario (Option 2) would use cars 5 thorough 12 which are those farthest west along the train, meaning an 8-car platform would start roughly where the proposed station building is and extend westwards towards Mimico Creek, as shown in Figure 3-1.

The Updated 2020 IBC notes the Natural Environment considerations, especially the dynamic system of Mimico Creek, with the natural process of flooding, slope instability and stream erosion. The report recommends that these be considered as part of the TPAP, as documented in this EPR.

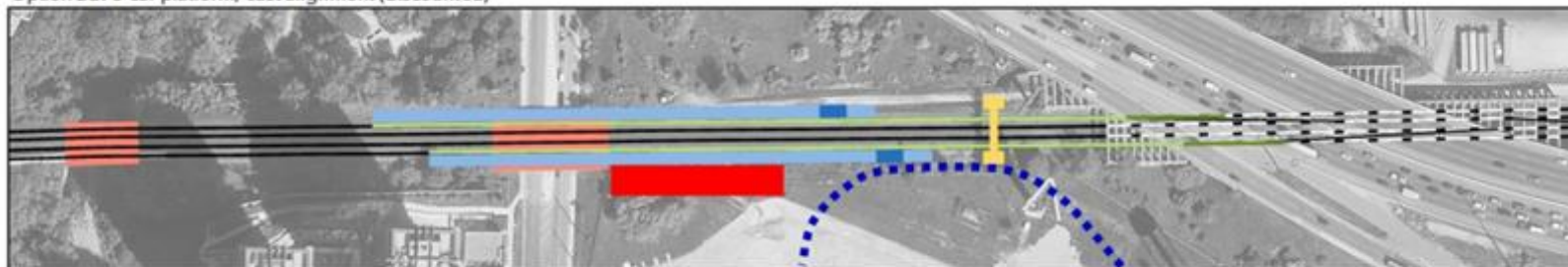
Option 1: 12-car platform



Option 2: 8 car platform, west alignment



Option 2B: 8-car platform, east alignment (discounted)



Legend

— Track	Bridge	Station platform	Passenger coaches	Station building
- - - Track under structure	Signal bridge	Mini-platform	Locomotives	Streetcar/bus ROW

Figure 3-1: Updated 2020 IBC Options (Metrolinx, 2020a)

3.1.2 Lakeshore West Track Configuration

The safety of rail operations is Metrolinx's main objective. The Lakeshore West track, in the vicinity of the proposed Park Lawn GO Station, consists of four tracks with a set of crossover switches under the Gardiner Expressway overpass. The signals that control entry to the switches cannot be located under the overpass which limits the platform position to the east. Consideration is being given to moving the western signals as far east as possible (to the limit of the existing Gardiner Expressway overpass).

3.1.3 Station Element Considerations

3.1.3.1 Railway Signals

Positioning of the eastern end of the station platforms is based upon the location of the signals for the crossover switches. Since the Gardiner Expressway is built over the crossover, the replacement signal for the northern track is proposed to be a ground signal placed directly west of the Gardiner overpass, with a reduced sightline distance to allow the north platform to be positioned as shown in Figure 3-3. As detailed design progresses this deviation will be reviewed by Metrolinx.

3.1.3.2 Platforms

As noted in Section 3.1.1, trains can operate with loading and unloading at all 12 cars, 5 cars (cars 1 through 5 numbered from the east end of the train), or 8 cars (cars 5 through 12, numbered from the east end of the train). As noted in the Updated IBC (Metrolinx, 2020a), platform lengths were established based on 2041 ridership levels, and include the 12-car platform and door configuration.

The platform width is 5.021 m, which consists of standard platform width of 4.9 m plus a lateral clearance allowance of 0.121 m for future level boarding. Based upon the positioning of the platforms due to the proposed signal locations summarized in Section 3.1.3.1 a portion of both the north and south platforms extend into TRCA's Hazard Lands for Mimico Creek. The Metrolinx Design Requirements Manual (DRM) allows for platform narrowing, where permissible based upon passenger flow modelling and code compliance, of 3.721 m for open platforms with a minimum of 2.561 m horizontal between platform obstructions (such as shelters and communication hubs) and the edge of the platform for passenger circulation. Reduction in platform width is subject to completion of the passenger flow modelling, code compliance review, completion of design drawings and rationale, and approval of the Design Standard Deviation Request (DSDR) by Metrolinx. Studies are currently ongoing to be submitted as part of the DSDR at 30% design of the proposed Park Lawn GO Station to confirm the reduction in platform width.

3.1.3.3 Sloped Walkway

Access to the south platform west of Park Lawn Road is proposed to be via a sloped walkway. Alternative access to the platform is required for both safety and to provide convenient access to users. As part of the development of the conceptual design assessed in this EPR, different design configurations for the sloped walkway were considered.

The south sloped walkway was initially designed as shown in Figure 3-2, located between the south platform and the South Beach condos noise wall. This configuration was found to require additional third-party property, relocation of stormwater utilities and poses issues with respect to passenger safety due to the limited sightlines from the noise wall. The south sloped walkway was reconfigured, as shown in Figure 3-3 to the west so that the majority of the sloped walkway is within Metrolinx property with improved passenger sightlines. It should be noted that the configuration shown in Figure 3-3 placed the south sloped walkway closer to Mimico Creek. Further discussions on alternative locations for the sloped walkway location will occur during detailed design to optimize this design considering TRCA, City of Toronto, passenger, utilities, safety, and property requirements.

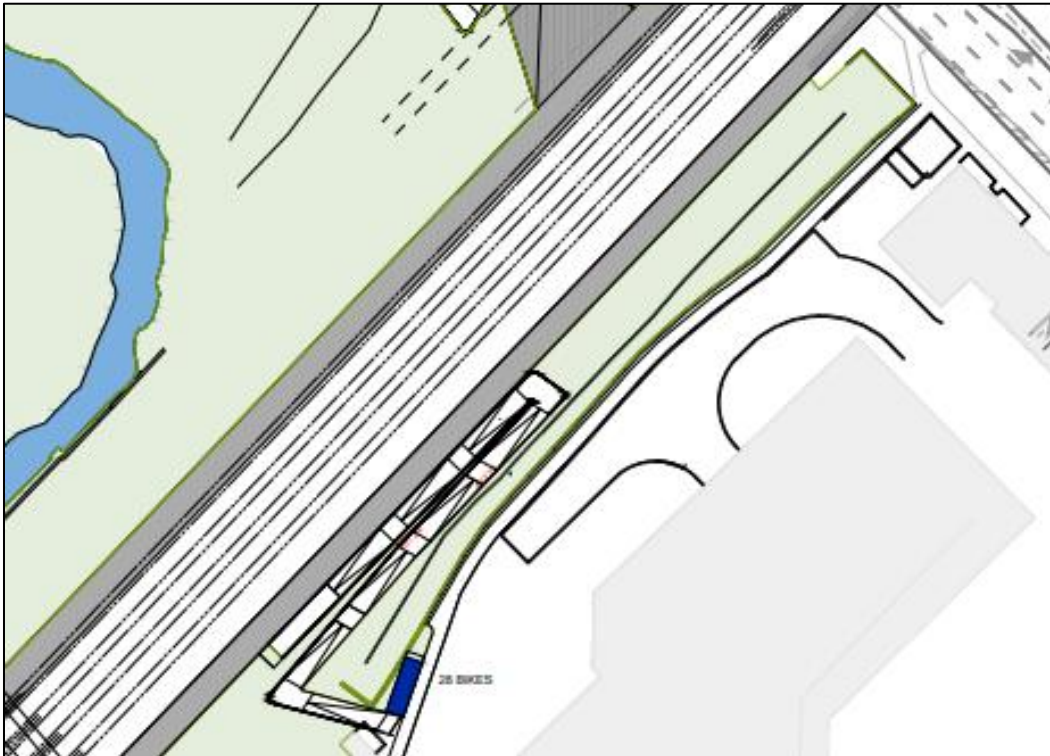


Figure 3-2: South Sloped Walkway Initial Design Configuration

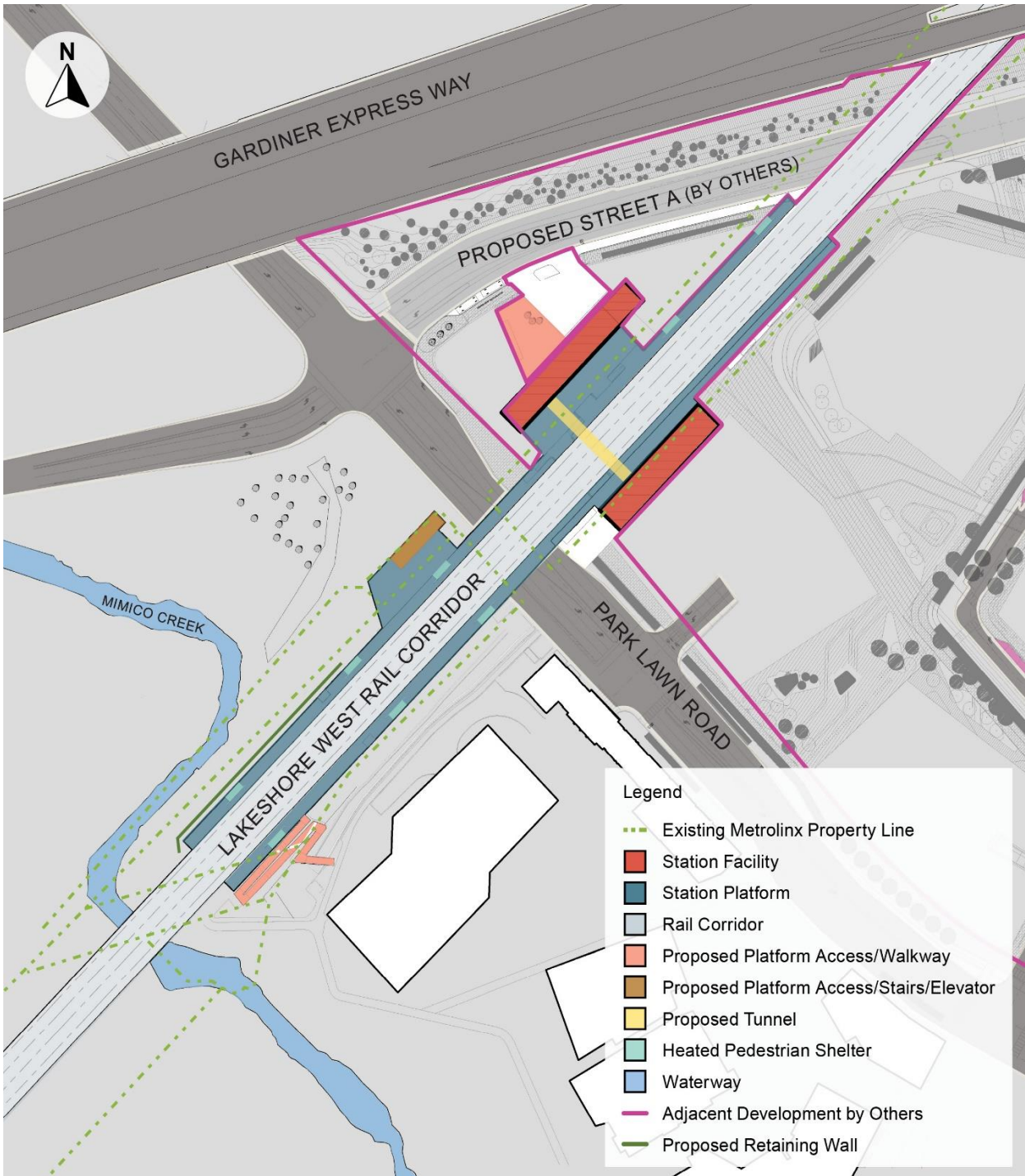


Figure 3-3: Proposed Park Lawn GO Station Conceptual Layout

3.2 Key Design Criteria

The station will be designed and constructed to be compliant to current versions of Regulations, Codes, and Standards - including Metrolinx's DRM and Metrolinx's Design Standards (DS-02, DS-03, DS-04, DS-05, and DS-07). The design will strive to produce a high-quality station design that is durable, enhances the customer experience, easy to maintain, and responsive to its site and surrounding context. The station design will be informed by Metrolinx's Design Standards to provide a consistent customer experience while supporting and promoting intuitive wayfinding. The station will also be designed to be inclusive and universally accessible for passengers of all ages and abilities.

3.3 Design Elements

The design of the station is being coordinated with other aspects of the overall Project including the 2150 Lake Shore mixed-use development, work on the adjacent Park Lawn Road, and the new Public Street 'A'. The consultant teams for the station and adjacent development have been working closely to promote a design that is connected and well integrated, leading to certain station elements such as retail, staff and maintenance vehicle parking, bike parking and Pick-up Drop-off (PUDO) being incorporated into the adjacent development. Figure 3-3 shows the conceptual layout of the station.

3.3.1 Platforms

Two side platforms have been designed based on the required edge distances from the tracks while protecting for future level-boarding. Full length platforms (315 m) will provide sufficient access based upon 2041 Projected ridership.

As noted in Section 3.1.3.1, modifications to the existing signal bridge are required to avoid pushing the platforms further west and impacting the Mimico Creek bridge and avoiding further encroachment into the Mimico Creek valley system. Additionally, modifications to the existing Park Lawn rail bridge are required to construct the platforms. The Park Lawn rail bridge will be expanded to the north.

The standard platform width assessed was 5.021 m, which is the standard platform width of 4.9 m plus a lateral clearance allowance of 0.121 m to protect for future level boarding. As noted in Section 3.1.3.2, a DSDR for platform narrowing will be submitted to Metrolinx for approval as part of the 30% design submission.

The following design elements for the platforms will be incorporated into the station design:

- North and south station platform access structures (stair and sloped walkways providing commuters access from street/trail level up to platform level);
- North and south station platforms with mini-platforms, platform shelters, platform mini-hub rooms, and required platform furnishings;
- North and south partial canopy coverage over the platform-level plaza and along the barrier-free path of travel from the north station building to the mini-platform;

- Widening of the existing Park Lawn rail bridge by 4.55 m to the north to support the north station platform; and
- Re-located rail signal bridge as a result of construction of the new station platforms. Existing signals will need to be re-located further east to meet sight line requirements.

3.3.2 Station Entrances

The current station design includes two entrance buildings. The following design elements related to the station buildings will be incorporated into the station design:

- North and south station buildings (two-storey buildings with the south building being the principal/main entrance for the GO Station);
- Landscaping and paving around the north station building; and
- Secondary entrances are located on the west side of Park Lawn in the form of an elevator and stairwell for the north platform and a sloped walkway for the south platform.

3.3.3 Station Circulation

The main station building will house two stairs and two elevators connecting the lower (tunnel) level and the upper (platform) level. One stair and elevator will be located at the east end of the south station building to serve the east south station building entrance, while the other stair and elevator will be located at the west end of the south station building to serve the west south station building at the Park Lawn Road entrance.

The north station building will house one stair and two elevators connecting the lower (tunnel) level and the upper (platform) level. The main entrance into the north station building is located on the north façade at tunnel level as it primarily serves passengers arriving from the accessible layby.

The station also includes one pedestrian tunnel connecting the station buildings under the rail corridor, on the east side of Park Lawn Road.

The access north of the rail corridor, and west of Park Lawn Road will include a pavilion with elevator and stairs, while the access south of the rail corridor and west of Park Lawn Road will include a sloped walkway connecting with the South Beach Condos sidewalk. These second accesses are required by Metrolinx to provide a second accessible emergency egress from the platforms.

Below ground structures will be constructed with waterproofing as necessary to limit ingress of groundwater into the structures.

3.3.4 Bicycle Facilities

The design will aim to integrate current, proposed, and future development opportunities to the best of their ability, including station access for cyclists. The following design elements related to the bicycle facilities will be incorporated into the station design:

- Covered bike parking will be located around the north station entrance, around the Park Lawn Road (lower-level) station entrance, near the bottom of the two platform access structures west of Park Lawn Road and within 2150 Lake Shore.

3.3.5 Landscaping and Streetscaping

The landscaping strategy will be developed as part of detailed design. Existing elevation around the north station building to be graded down to match elevation at Park Lawn Road and future Public Street A.

3.3.6 Transit Access

Changes and improvements to local transit (i.e., Toronto Transit Commission (TTC) bus and streetcar services) within the Etobicoke area are proposed as part of the 2150 Lake Shore, as well as ongoing studies being completed by the City of Toronto, including the Christie Secondary Plan and the Park Lawn Lake Shore Transportation Master Plan (TMP). A TTC loop is proposed within 2150 Lake Shore (i.e., outside the scope of this Project).

Bus stops are proposed along Park Lawn Road, north and south of the rail corridor to provide access into the Park Lawn GO Station.

3.3.7 Active Transportation Access

No vehicle parking is planned at the proposed GO Station in order to reduce vehicle traffic within the area and promote active and alternative transportation for local residents. The station is envisioned to support the increasing population within the Humber Shores area and provide access to regional transportation within walking distance. The following active transportation design elements will be incorporated into the station design:

- Pedestrian tunnel below the existing rail corridor to connect the north and south station buildings.

With a full-length platform design, the proposed Park Lawn GO Station is proposed to span Park Lawn Road to allow access from both sides of the street for pedestrians and cyclists (Metrolinx, 2020a).

3.3.8 Vehicular Access

Although the proposed Park Lawn GO Station will not include parking facilities for the general public, the following vehicular access is proposed:

- Station maintenance and staff parking spaces (located within 2150 Lake Shore, adjacent to the south station building, with one maintenance vehicle parking space in front of the station service spaces in the north station building); and
- PUDO for 30 vehicles. The PUDO facilities are currently being contemplated within the 2150 Lake Shore development (split between underground and surface layby spaces).

In addition, there is anticipated to be informal PUDO activities from personal vehicles, as well as taxi and ridesharing (i.e., Uber, Lyft) vehicles.

3.3.9 *Accessible Loading and Unloading*

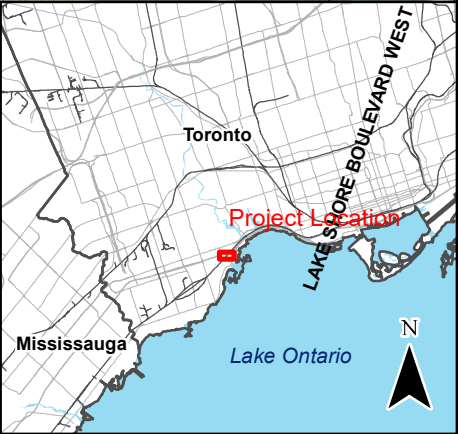
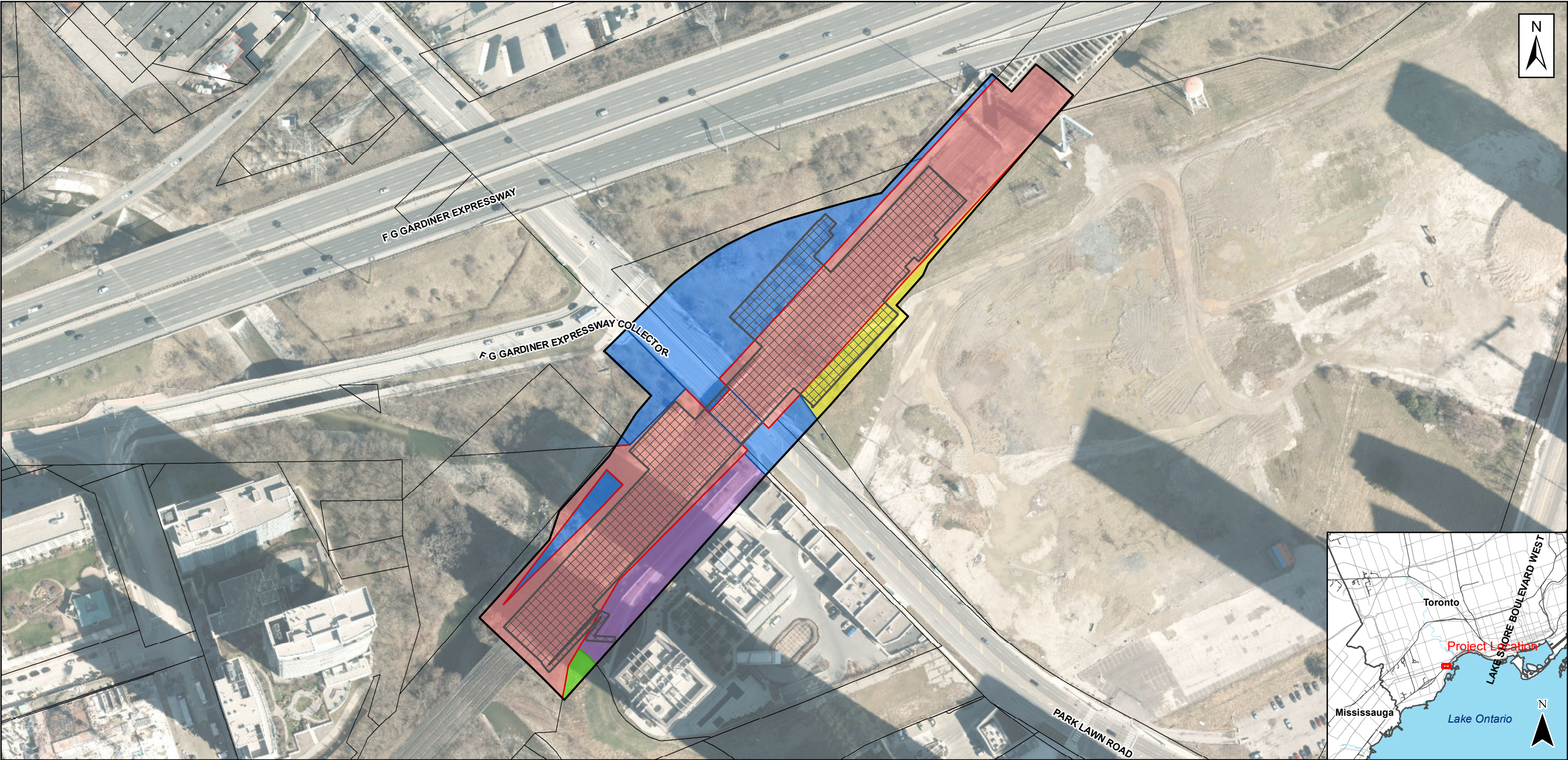
The proposed GO Station will be designed to accommodate the requirements for future level-boarding. A dedicated layby will be provided for accessible PUDO (paratransit/TTC WheelTrans facilities) along the south side of Public Street A. The location will minimize travel distance from the layby to the entrance of the north station building.

3.3.10 *Emergency Service / Corridor Access*

Emergency Services will be able to access the rail corridor via the accessible PUDO, located along the future Public Street A.

3.3.11 *Property Acquisition*

Development of the Park Lawn GO Station will result in acquisition of approximately 1.5 hectares of land from the two adjacent landowners, including the City of Toronto and South Beach Condos and Lofts adjacent to the Lakeshore West rail corridor (see Figure 3-4. During detailed design the property impacts will be refined to reflect the updated footprint, as well as construction staging areas.



LEGEND Proposed Station Layout Proposed Project Footprint (approximate) Project Footprint by Property Ownership City of Toronto Lakeshore Development Inc. Metrolinx South Beach Condos and Lofts Toronto and Region Conservation Authority		NOTES 1. Coordinate system - UTM NAD 1983 Zone 17N 2. Sources: Roads, Railways, Watercourses - Land Information Ontario; Properties, City of Toronto 2019. 3. Station Footprint Based on Preliminary Station Design. 02550100 Meters 1:2,000	Project: Park Lawn GO Station Figure Title: Environmental Project Report - Property Impact Plan Prepared By: HATCH Date: December 17, 2021 Version: PL.EP.100-1 Review: Figure: 3-4	
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3.3.12 Utilities

The following utilities have been identified based on the information extracted from record drawings:

- Incoming Station Services: domestic cold water, gas, and electricity provided from 2150 Lake Shore as required;
- Municipal services: stormwater sewer, 300 mm diameter watermain, sanitary sewer, abandoned sanitary sewer, stormwater sewer (northeast of Park Lawn and southwest of Park Lawn);
- Communications: Telus, Zayo, Rogers, Bell, Bell 360;
- Gas and oil: Enbridge gas main/meter; and
- Power, cables, conduits and lighting: Toronto Hydro.

There are 19 potential utility conflicts identified for the Park Lawn GO Station (14 private and 5 municipal). The potential utility conflicts are all in relation to existing utilities. A breakdown of the utility conflicts is presented in Table 3-1.

Table 3-1: Park Lawn GO Station – Potential Utility Conflicts

Total Number	Utility Type	Utility Owner	Quantity
14	Private	Bell	2
		Hydro	1
		Rogers	1
		Telus	2
		Enbridge (gas main/meter)	5
		Zayo	1
		Metrolinx	1
		CN	1
5	Municipal	Sanitary Sewer	2
		Watermain	1
		Stormwater Sewer	2

3.3.13 Construction Staging / Laydown Areas

To construct the tunnel connecting the north and south station buildings beneath the rail corridor, crews will access the site from the north City lands and occupy the rail corridor over a weekend closure.

The south station building will be constructed within the existing Developer's lands south of the rail corridor, with the lands being accessed either from Park Lawn Road or Lake Shore Boulevard west.

The north station building will be constructed within the City lands north of the rail corridor, which is currently inaccessible by road. Work will be concurrently completed for Public Street A within the City lands, thereby creating an access to the site off of Park Lawn Road.

To expand the Park Lawn Road rail bridge to accommodate the future station platform, the site will be accessed from Park Lawn Road and use rail and lane closures to minimize impact on the travelling public.

West of Park Lawn Road, options available for access to the rail corridor are limited to lands directly north of the west abutment of the Park Lawn bridge and from over the Park Lawn Bridge.

3.3.14 Stormwater Management

The following design considerations regarding stormwater management (SWM) will be incorporated into the station design:

- The SWM design for the Project will consider the following drainage and SWM objectives:
 - MECP Stormwater Management Planning and Design Manual (2003);
 - MTO Drainage Management Manual (2008);
 - Toronto Wet Weather Flow Management Guidelines (2006);
 - TGS Version 3 (City of Toronto, 2019);
 - TRCA Stormwater Management Criteria (2012);
 - GO Transit Design Requirements Manual (January 2017);
 - TRCA Erosion and Sedimentation Control Guideline for Urban Construction (2019);
 - Metrolinx Sustainable Design Standards (2021);
 - Metrolinx Asset Protection Package (MAPP); and
 - Christie Secondary Plan (2021) among other guidance;
- The SWM Design will incorporate Low Impact Development (LID) techniques provided by these design guides;
- The Christie Secondary Plan has committed to TGS Version 3, which includes retention of 5 mm of each rain event through infiltration, evapotranspiration, and reuse. To comply with the Christie Secondary Plan, the proposed GO Station could include infiltration trenches, permeable pavement, and green roofs. Runoff control to match post development flows to predevelopment flows for the 2 through 100-year events could be addressed through underground storage.
- Quality control will include removal of 80% TSS through a treatment train approach that will include oil grit separators (OGS) and additional filtration devices to meet TGS V3 and TRCA stormwater criteria, such as bioswales and filter units;

- The treatment train approach includes provision of green roofs and permeable paving, where appropriate, and storage tanks with flow control devices;
- Drainage and stormwater management provisions and connections for the station buildings, platforms, platform access structures, and north station site area; and
- SWM and drainage will be coordinated with 2150 Lake Shore.

3.3.15 Retaining Wall

A retaining wall is proposed to support the station platforms west of Park Lawn Road as the station extends westward into the Mimico Creek valley system. The retaining wall is intended to support the station platforms independent of the existing toe retaining wall that protects the existing Mimico Creek rail bridge. The retaining wall is proposed to be located at the back edge of the north platform near the top of the existing embankment slope using top-down construction. Use of the retaining wall limits the encroachment into the Mimico Creek valley system and keeps any fill outside of the TRCA's regulatory flood limit. The following design requirements should be considered in the design of the proposed rigid retaining wall:

- Independence of the wall from lateral support from the soil retained by the existing retaining wall (passive resistance);
- The live and dead loads from the construction of the proposed passenger platform will be carried by the proposed retaining wall, which will be designed as a non-yielding wall; and
- Embedment of the wall into the rock mass to a depth that will provide an adequate level of overturning resistance.

4. Existing Conditions

4.1 Natural Environment

4.1.1 Methodology

4.1.1.1 Desktop and Background Data Review

The Study area for the Natural Environment Report (NER) encompasses the Project footprint, as well as a 120-metre zone of influence (see Figure 4-1).

Available background information related to the Study Area's natural environment conditions (i.e., including features and functions) was collected and reviewed from a number of sources (see Appendix A, Section 4).

4.1.1.2 Agency Consultation

The City of Toronto was contacted on January 22, 2020, to obtain any natural heritage information that may not be currently mapped pertinent to the Study Area, including Environmentally Sensitive Areas. A response from the City of Toronto has not been received to date.

Data requests were also sent to TRCA on January 22, 2020 for any natural heritage features inclusive of fish, fish habitat and wetland. Information from TRCA was received on February 20, 2020 and included circa pre-2000 Ecological Land Classifications (ELC), habitat information, flora and fauna observations and regulation limits.

A meeting with the TRCA was held on May 12, 2020 in order to introduce the Project and discuss review times. The area surrounding the rail corridor on the west side of Park Lawn Road, adjacent to Mimico Creek was identified as an area of concern for the TRCA due to the proximity of the proposed station to the creek, as well as the slope stability. The TRCA staff indicated that erosion within the valley could impact structures constructed within the valley. TRCA staff recommended conducting geotechnical and geomorphological investigations to assess the slope hazard to determine the long-term stable top of slope (LTSTOS) (using a 3:1 ratio) plus a 10 m buffer and determination of the toe erosion allowance.

The MECP was also contacted on January 22, 2020 to obtain information concerning significant species (inclusive of Species at Risk (SAR)) and designated natural features or areas within or adjacent to the Study Area. Correspondence with MECP indicated that it is now the direction of the Ministry that desktop screenings be completed prior to issuing a data request. A preliminary desktop screening was sent to MECP on August 13, 2020 in the form of an Information Gathering Form to outline completed studies for the following species:

- Barn Swallow;
- Bank Swallow;

- SAR Bats; and
- American Eel.

A response from MECP was received on September 2, 2020 that stated that the Ministry was in agreement with the SAR assessments developed from field surveys and desktop research. Permitting advice was also provided at the time of the response indicating that additional studies may be required prior to submission of permit applications.

4.1.2 Field Surveys

An initial field investigation occurred April 17, 2020, to document general habitat conditions and refine information obtained through records review or information requests. In addition to the Field Survey, five additional site visits occurred during the summer of 2020 to document existing conditions in the Study Area. The dates of the site visits were:

- April 29, 2020 - Leaf-off Bat Snag Surveys, Raptor Stick Nest Search and Butternut Search;
- May 28, 2020 - Breeding and SAR Birds, vascular plants, and SAR plants;
- June 12, 2020 - Fish Habitat;
- June 17, 2020 - Breeding and SAR birds, vascular plants, and SAR Plants; and
- July 9, 2020 - Breeding and SAR birds, Vascular plants, SAR plants.

4.1.2.1.1 Aquatic Environment

Based on a records review and TRCA data, aquatic habitat within the Study Area was limited to Mimico Creek and the associated 305 m² cattail marsh located upstream of the Project Location. During the initial field investigation on April 17, 2020, Hatch biologists walked the channel of Mimico Creek to conduct a preliminary fish habitat assessment within the creek.

A detailed fish habitat assessment was completed in June 2020 to document fish habitat within Mimico Creek and to confirm if the cattail marsh upstream of the Project functions as fish habitat. The fish habitat assessment followed protocols in the Ministry of Transportation Environmental Guide for Fisheries. Additional detail regarding fish habitat was obtained from TRCA background reports.

The survey was conducted under low flow conditions to determine the extent of summer fish habitat. Channel width, water depth, substrate composition, in-water fish habitat (i.e., pools, riffles, etc.), overhanging vegetation, percent shading, general bank conditions and riparian coverage were documented on field forms and photos. Fish community surveys are not proposed due to the amount of data provided by the TRCA.

4.1.3 Terrestrial Environment

4.1.3.1 Vegetation and Ecological Land Classification

Toronto and Region Conservation Authority ELC mapping was verified and updated as needed during the April 17, 2020 site visit and where required, the remaining ecosites in the Study Area were classified. Prior to entering the field, Hatch compared TRCA ELC data to various years of imagery available on Google Earth and determined some ELC communities provided by TRCA were removed prior to 2002. Accordingly, 2018 Google Earth imagery was used to approximate the ELC community changes, which was followed up with ground-truthing from Public Rights-of-Way to provide an updated ELC assessment of the Study Area. Previous TRCA ELC work used a modified coding scheme that provides greater detail in cultural landscapes than the provincial ELC Vegetation Type List (Lee, 2008). Hatch continued to use TRCA ELC mapping techniques to provide continuity of the database within and surrounding the Study Area specifically the Ravine Natural Heritage Features adjacent to Mimico Creek.

A checklist for significant, or rare flora, including SAR, was prepared based on the records reviewed to evaluate the potential presence or absence of species that are historically known to be near or have the potential to be found in the Study Area. A list of vascular plants was compiled from the initial field investigation observations. This list is included in Appendix C in Appendix A of this EPR and was updated during future site investigations.

April 17, 2020 field investigations were limited to areas where permission to enter had been granted, but were updated during subsequent field investigations. The SAR list and other rare vegetation communities were also revised based on the results of the additional field visits.

4.1.3.2 Wildlife

A desktop screening for potential SAR, SAR habitat, significant wildlife habitat or other potential wildlife habitat was completed using a combination of multiple online databases.

Wildlife observations and wildlife signs (including browse, tracks/trails, animal scat, bird nesting activity, tree cavities, bat snags, burrows, excavated holes and vocalizations) were recorded during the site investigations.

Three additional targeted wildlife surveys occurred in 2020 as noted in Section 4.1.2. Protocols to be followed during these surveys included the following:

- Raptor Stick Nest Search - Currently there is no provincial or federal nest search protocol, given the size of the area and the timing of the next survey (early May) it is expected that any stick nest would be visible during the leaf-off snag survey occurring for SAR Bats. This field survey involves viewing all trees > 10 cm diameter from ground to canopy; and
- Three Breeding Bird Surveys - Standardized Surveys using Ontario Breeding Bird Atlas (OBBA) Guide for Participants.

4.1.3.3 *Herpetofauna*

No focused field surveys have been conducted to date. Herpetofauna habitat was identified during field surveys and compared to data provided by TRCA, Ministry of Northern Development, Mines, Natural Resources, and Forestry (MNDMNRF), and the Ontario Reptile and Amphibian Atlas. If at the detailed design stage impacts are identified to potential habitat, additional MNDMNRF and TRCA protocols will be followed to determine species presence and if breeding or hibernation habitats are present within the Study Area.

4.1.3.4 *Species at Risk*

Species at Risk include species listed under the *Species at Risk Act* (SARA) and *Endangered Species Act* (ESA), including Extirpated, Endangered, Threatened, and Special Concern species. Only those listed as Extirpated, Endangered or Threatened are afforded species and habitat protection under Ontario's ESA. The SAR Screening Table is provided in the Appendix E of Appendix A of this EPR. This table indicates the potential of a given SAR species to occur within the Study Area based on available habitat, previous occurrence records and to a lesser extent the known species distribution.

Four additional surveys occurred in 2020. Species at Risk were noted if encountered during the four site visits using the following protocols or survey methods to satisfy MECP requirements:

- Bat Snag Surveys - Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis & Tri-Colored Bat April 2017; and
- SAR Birds - OBBA.

4.1.3.5 *Significant Wildlife Habitat*

A Significant Wildlife Habitat (SWH) Criteria Schedule is provided in Appendix D of Appendix A of this EPR and is based on the records reviews, requested information and site investigations completed to date. Determination of SWH is broadly categorized and described in the NHRM (Ministry of Natural Resources, 2010b) and the Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000). The five categories of SWH are identified as:

1. Seasonal concentrations of animals;
2. Rare vegetation communities;
3. Specialized habitat for wildlife;
4. Habitat of Species of Conservation Concern (SCC); and
5. Animal Movement Corridors.

SWH within the Study Area was evaluated using the Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (Ministry of Natural Resources, 2015). The screening table was updated following each field survey.

4.1.4 Soils and Landforms

The Study Area is situated on the South Slope Plain Physiographic Region (Chapman & Putman, 1984). This region lies between the lower elevation Iroquois Sand Plain Physiographic Region to the north and Lake Ontario to the south (Chapman & Putman, 1984).

The Study Area exists in a bevelled till plains physiographic landform (Chapman & Putman, 1984). Soils in the vicinity are mostly formed from glacial lake deposits and consist of Lake Iroquois shallow water deposits (sand tills and silty sand till), older tills (silty clay to silt till), and older lakes deeper-water deposits (silt and clay) (Sharpe, 1980). The area surrounding Mimico Creek consists of modern river deposits containing sand, silt, minor gravel, and organic material. Bedrock geology is characteristic of the Upper Ordovician period containing limestone, dolostone, shale, and sandstone (Chapman & Putman, 1984).

4.1.5 Groundwater

Based on the review of the Approved Source Water Protection Plan for the Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source Water Protection Area (CTC Source Protection Region, 2015) it was confirmed that the Study Area does not contain any mapped wellhead protection areas, intake protection zones, or significant groundwater recharge areas. However, the Study Area is within a highly vulnerable aquifer for the protection of drinking water sources (CTC Source Protection Region, 2015).

4.1.6 Watercourses and Hydrological Features

The Study Area falls within the Mimico Creek Watershed. This watershed is highly urbanized with over 30 percent of its landmass consisting of industrial land uses (Toronto Transit Commission, 2020b). The form and function of the hydrology of Mimico Creek and its valley features have been negatively impacted by the urbanization of the surrounding areas. Due to the old infrastructure within the watershed, outdated stormwater management facilities often result in poor water quality, as well as increased erosion and flooding (Toronto and Region Conservation Authority, 2018). High chloride concentrations were reported within the watershed (TRCA, 2018), typical of highly urbanized areas with increased amounts of road salt usage.

Mimico Creek bisects the Study Area and continues to the southeast before discharging into Lake Ontario, approximately one kilometer (km) downstream. The watercourse originates near Brampton and is approximately 57.2 km in stream length (Toronto and Region Conservation Authority, 2013). Due to high stormwater conditions within the Creek, certain areas are artificially channelized with spillways.

A single small Cattail Marsh is noted upstream of the Study Area. This area is better described as a surface water drainage channel with associated wetland community along its peripheries and is not expected to provide hydrological stormwater retention to any measurable degree. Humber River is approximately 900 m northeast of the Study Area and is associated with the Lower Humber River Complex Provincially Significant Wetland

(PSW). The watershed divide between Mimico and Humber Rivers lies approximately 300 m to the east of the Study Area.

4.1.7 Aquatic and Fish Habitat

Mimico Creek originates north of the Study Area and generally flows in a north to south direction through developed areas throughout the watershed. Prior to entering the Study Area, the creek flows under the Gardiner Expressway in a concrete-lined channel that becomes natural substrate at the northern boundary of the Study Area. The concrete channel ends at a concrete weir that functions as a seasonal barrier to fish migration (Toronto and Region Conservation Authority, 2010). As the creek exits the concrete-lined channel, Mimico Creek follows a more natural pattern, flowing through a series of meanders before flowing under the rail corridor.

For the reach of Mimico Creek between the concrete-lined channel and the rail corridor, the channel ranged in width from 4 to 6 m and from 0.10 m to 0.50 m in depth. Bankfull width was approximately 10 - 15 m indicating widely fluctuating water levels in the channel. Aquatic habitat consisted of pools (20 percent), riffles (30 percent) and runs (50 percent) with substrates consisting of cobble, gravel, boulder, and silt. As the creek approaches the rail corridor, the channel turns to the west and flows along a rock wall and concrete retaining wall that were installed to minimize erosion caused by the creek.

The remaining banks of the reach are moderately unstable as evidenced by areas of exposed soil along the banks. The majority of in-stream cover is provided by cobble with scattered boulders that appear to have fallen from the rock wall. Overhead cover is provided by woody debris and overhanging vegetation that covers approximately 29 percent of the reach. Critical or limiting habitat was not observed within the upstream reach of the Study Area.

Between the rail corridor and the southern boundary of the Study Area, the channel ranges in width from 3 to 10 m and from 0.10 to 0.30 m in depth. Bankfull width was approximately 15 - 20 m indicating widely fluctuating water levels in the channel. Aquatic habitat consists of runs (40 percent), riffles (30 percent), and pools (30 percent) with substrates consisting of cobble, gravel, boulders, and silt. Instream cover is provided by cobble with scattered boulders with overhead cover provided by overhanging grasses and shrubs along the banks. The western banks are vertical, 2 - 3 m high, with exposed soil along approximately 60 percent of the channel indicating active erosion along the majority of the study reach. As the channel exits the Study Area, it begins to transition from riverine habitat to estuarine habitat that is directly connected to Lake Ontario. Critical or limiting habitat was not observed in this reach of the Study Area.

Fish species known to inhabit this reach of Mimico Creek include species known to inhabit both lakes and creeks. Many of the species that prefer lake habitats (i.e., Black Crappie, Freshwater Drum, White Bass) are likely moving between Lake Ontario and habitat in Mimico Creek near the lake. Habitat observed within the Study Area is suitable to support warmwater tolerant species such as Blacknose Dace, Brown Bullhead, Creek Chub, and

Pumpkinseed as the reach provides a combination of slow-moving habitats and faster flowing habitats with various substrates. The riffles with cobble substrates likely provide spawning habitat for minnow and sucker species. Both Brown Trout and Rainbow Trout have been recorded within the lower reach of Mimico Creek (Toronto and Region Conservation Authority, 2010), however their presence is attributed to the stocking of these species in neighboring watersheds and are not anticipated to be spawning in Mimico Creek or using this reach as a migratory corridor.

It should be noted that cool water species are present, as well as warm water species. The existing warm water classification is in reference to timing windows provided by TRCA and the MNMNR.

4.1.8 Vegetation Communities and Flora

The Study Area consists predominantly of urbanized lands, dominated by relatively small cultural vegetation communities with cultural meadows, thickets, and woodlands present. These cultural community types support many non-native and invasive species.

These species are indicative of the long-standing disturbance to the area and are common throughout the Study Area and regional area.

As previously noted, ELC data from the TRCA was obtained on February 20, 2020, and was used to assist in characterizing the vegetation communities within the Study Area. The April 2020 site visit was conducted to verify and update existing ELC classifications and classify the remaining ecosites in the Study Area.

The updated ELC classification identifies nine terrestrial ecosites, one wetland ecosite and one aquatic ecosite within 23 individual polygons within Study Area. These ecosites identified include:

- Turbid Open Aquatic (OAO1-T);
- Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FOD7-a);
- Broad-leaved Cattail Mineral Shallow Marsh (MAS2-1A);
- Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3);
- Native Deciduous Successional Woodland (CUW1-A3);
- Transportation Corridor (CV1-1);
- Exotic Cultural Thicket (CUT1-c);
- Fresh-Moist Oak-Lowland Maple Deciduous Forest (FOD9-2);
- Exotic Forb Meadow (CUM1-c);
- Exotic Cool Season Grass Old Field Meadow (CUM1-b);
- Anthropogenic Sand / Gravel Barren (SB02); and

- High Density Residential (CVR-2).

An annotated list of species identified in the ELC ecosites was completed following the 2020 field season. Species lists are a compilation of Hatch field work conducted in April 2020 and background information. No SAR plants or vegetation communities have been observed in the Study Area during initial field investigations. A list of locally and regionally significant plant species that have been recorded in the Study Area are included below in Table 4-1.

Table 4-1: Locally and Regionally Significant Plant Species

Common Name	Accepted Name	TRCA Rank ²	City of Toronto Rank ³
Black Willow	<i>Salix nigra</i>	L3	R
White Spruce	<i>Picea glauca</i>	L3	X+
Black Ash	<i>Fraxinus nigra</i>	L4	R ²
Black-Eyed Susan	<i>Rudbeckia hirta</i>	L4	X
Freeman's Maple	<i>Acer x freemanii</i>	L4	X
Pussy Willow	<i>Salix discolor</i>	L4	X
Red Maple	<i>Acer rubrum</i>	L4	X
Red Oak	<i>Quercus rubra</i>	L4	X
Softstem Bulrush	<i>Schoenoplectus tabernaemontani</i>	L4	X
White Birch	<i>Betula papyrifera</i>	L4	X
White Pine	<i>Pinus strobus</i>	L4	X
Wild Columbine	<i>Aquilegia canadensis</i>	L4	X

4.1.9 Significant Wildlife Habitat

The SWH is evaluated using site-specific attributes within the Study Area that are compared to the Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (Ministry of Natural Resources, 2015). The SWH Criteria Schedule is provided in Appendix D of Appendix A of this EPR. Of the identified ecosites within the Study Area, almost all corresponded with potential SWH designations to some degree as shown below in Table 4-2.

² TRCA ranks in column three represent the local rank (L-rank) assigned by the conservation authority based on a number of factors. Flora are ranked based on their local occurrence, population trends, sensitivity to development, and habitat dependency. Fauna species are ranked based on their local occurrence, population trends, sensitivity to development, habitat dependency, area sensitivity, and path isolation sensitivity. An L-rank of L1 – L3 indicates that the species is of regional concern (i.e. within the entire TRCA limits) while an L-rank of L4 indicates that the species is of urban concern (i.e. regionally widespread but particularly vulnerable to declines in urban areas).

³ City of Toronto ranks in column four represent the status of the species according to the Ontario Ministry of Natural Resources (2000) report on the Distribution and Status of the Vascular Plants of the Greater Toronto Area. The status of each species was determined based on its rarity. Plant rarity was determined according to the number of plant stations identified which is defined as a 1 km radius around each occurrence. A "variable cut-off" was used and determined based on the size of the site district. Native species found in highly specialized habitats covering <1% of the GTA were considered rare regardless of the station cut-off. A status or ranking of R indicates that the species is rare and native, X+ indicates that the species is native and was introduced in the municipality in which it was found, and R2 indicates that the species is rare and native with two known stations.

**Table 4-2: Candidate Significant Wildlife Habitat
Identified using Ecological Land Classification within the Park Lawn GO Station
Study Area**

Candidate Significant Wildlife Habitat	TRCA Identified Ecosite	Potential within Study area	Rationale
Reptile Hibernaculum	All except OAO1-T and CVR-2	Moderate	Terrain within Study Area is variable and could potentially contain areas located beneath the frost line or in damp areas such as ELC Code MAS2-1A.
Special Concern and Rare Wildlife Species	All	Moderate	A wide variety of habitats are present within the Study area; Special concern species have been recorded within one km of the Study area.

No confirmed Reptile Hibernacula was observed within the Study Area, and one Special Concern species (Monarch) was recorded during field investigations.

4.1.10 **Species at Risk**

A review of the MNRF Natural Heritage Information Centre (NHIC) database provided nine records of SAR wildlife within the one km square overlapping the Study Area. A search of the OBBA (Cadman M. D., Sutherland, Beck, Lepage, & Couturier, 2007) and Ontario's Reptile and Amphibian Atlas (iNaturalist, 2020) indicated the potential for 11 birds, and six herptile species, to occur within the Study Area. As indicated in the SAR Screening Table (Appendix E of Appendix A) a total of 20 SAR have previously been recorded near the Study Area. Of those 20, four are thought to have very low potential of occurring, while seven have low or minimal potential and nine have moderate to high potential. The SAR identified through the above-noted background sources with low to high potential to occur, and their corresponding S-rank⁴, ESA, Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and SARA status, are presented in Table 4-3. Species at Risk bats were not identified in the desktop review, however due to the forested habitat within the Study Area, they have also been included.

⁴ S-rank refers to the NatureServe conservation status system ranking designated at a subnational level (S-rank) for a particular next-lower geographical unit within a nation, such as a province or territory. The numbers and letters indicate the following:

1 — Critically imperiled — (typically having 5 or fewer occurrences, or 1,000 or fewer individuals).

2 — Imperiled — (typically having 6 to 20 occurrences, or 1,001 to 3,000 individuals).

3 — Vulnerable — (rare; typically having 21 to 100 occurrences, or 3,001 to 10,000 individuals).

4 — Apparently secure — (uncommon but not rare, but with some cause for long-term concern; typically having 101 or more occurrences, or 10,001 or more individuals).

5 — Secure — (common, widespread, abundant, and lacking major threats or long-term concerns).

B — Breeding — Conservation status refers to the breeding population of the species in the nation or province.

N — Nonbreeding — Conservation status refers to the non-breeding population of the species in the nation or state/province. R or? — Recorded within a nation or subnation, but local status not available or not yet determined. When combined with a global rank of G1 to G3, local status is 'Indeterminate,' but the entity is nevertheless presumed vulnerable, if still extant.

Table 4-3: Species at Risk with Low to High Potential to Use the Study Area

Common Name	Latin Name	S Rank	ESA	COSEWIC	SARA	Schedule	Preliminary Potential Presence Ranking	Rationale
Birds								
Bank Swallow	<i>Riparia</i>	S4B	Threatened	Threatened	Threatened	1	Confirmed	Foraging was observed throughout the Study Area in suitable foraging habitat over fields and open aquatic features such as Mimico Creek; There is a low potential for nesting habitat along the creek and associated ravine within the Study Area, however candidate nesting habitat is present along the western bank of Mimico Creek immediately south of the Study Area.
Barn Swallow	<i>Hirundo rustica</i>	S4B	Threatened	Threatened	Threatened	1	Confirmed	Foraging was observed throughout the Study Area; potential for nesting habitat in nearby buildings and under train bridges, however no nests were observed. Nesting activity was not observed in suitable habitat found within the creek.
Chimney Swift	<i>Chaetura pelagica</i>	S4B, S4N	Threatened	Threatened	Threatened	1	Low	Low potential for both foraging and nesting in the Study Area given the limited presence of suitable chimneys and the lack of individuals observed during field investigations.

Common Name	Latin Name	S Rank	ESA	COSEWIC	SARA	Schedule	Preliminary Potential Presence Ranking	Rationale
Common Nighthawk	<i>Chordeiles minor</i>	S4B	Special Concern	Special Concern	Threatened	1	Moderate	Potential for foraging throughout Study Area. Suitable nesting habitat on flat roofed buildings in the vicinity of the Project, as well as the vacant land of the former Mr. Christie Cookie Factory.
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	Special Concern	Special Concern	Special Concern	1	Low	Potential for foraging and nesting within cultural woodland and forest communities, however no individuals were observed during field investigations.
Peregrine Falcon	<i>Falco peregrinus</i>	S3B	Special Concern	Special Concern	Special Concern	1	Low	Potential for foraging throughout Study Area. Some suitable nesting habitat on taller buildings in the vicinity of the Project, however no individuals were observed during field investigations.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S4B	Special Concern	Endangered	Threatened	1	Low	Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	Special Concern	Threatened	Threatened	1	Low	Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.

Common Name	Latin Name	S Rank	ESA	COSEWIC	SARA	Schedule	Preliminary Potential Presence Ranking	Rationale
Fish								
American Eel	<i>Anguilla rostrata</i>	S1	Endangered	Threatened	Threatened	No Schedule	High	Recovery Strategy indicates that it is likely to be present within tributaries of Lake Ontario.
Herpetofauna								
Blanding's Turtle	<i>Emydoidea blandingii</i>	S3	Threatened	Endangered	Threatened	1	Low	Slight possibility to occur within Mimico Creek/cattail marsh within the Study Area, however no individuals were observed during field investigations.
Milksnake	<i>Lampropeltis triangulum</i>	S4	Special Concern	Special Concern	Special Concern	1	Low	Suitable habitat may occur throughout the Study Area. Human-made structures and railway structures may be suitable hibernacula; however no individuals were observed during field investigations.
Northern Map Turtle	<i>Graptemys geographica</i>	S3	Special Concern	Special Concern	Special Concern	1	Low	Slight possibility to occur within Mimico Creek within the Study Area, however no individuals were observed during field investigations.
Snapping Turtle	<i>Chelydra serpentina</i>	S3	Special Concern	Special Concern	Special Concern	1	Moderate	No individuals were observed during field investigations, however there is a moderate possibility to forage and travel within Mimico Creek.
Insects								
Monarch	<i>Danux plexippus</i>	SN2, S4B	Special Concern	Endangered	Special Concern	1	Confirmed	Individuals observed foraging on sparse stems of Milkweed within

Common Name	Latin Name	S Rank	ESA	COSEWIC	SARA	Schedule	Preliminary Potential Presence Ranking	Rationale
								open areas and meadow communities within the Study Area.
Mottled Duskywing	<i>Erynnis martialis</i>	S2	Endangered	Endangered	No Status	No Schedule	Low	Slight possibility to occur in dry areas within the Study Area such as empty lots or forest openings, however no plant species associated with Mottled Duskywing habitat or individuals of the species were observed.
Mammals								
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	Endangered	Not Assessed	No Status	No Schedule	Moderate	Potential to occur within forest communities and candidate snag trees.
Little Brown Myotis	<i>Myotis lucifugus</i>	S4	Endangered	Endangered	Endangered	1	Moderate	Potential to occur within forest communities and candidate snag trees.
Northern Myotis	<i>Myotis septentrionalis</i>	S3	Endangered	Endangered	Endangered	1	Moderate	Potential to occur within forest communities and candidate snag trees.
Tri-coloured Bat	<i>Perimyotis subflavus</i>	S3?	Endangered	Endangered	Endangered	1	Moderate	Potential to occur within forest communities and candidate snag trees.

4.1.11 Significant Natural Features

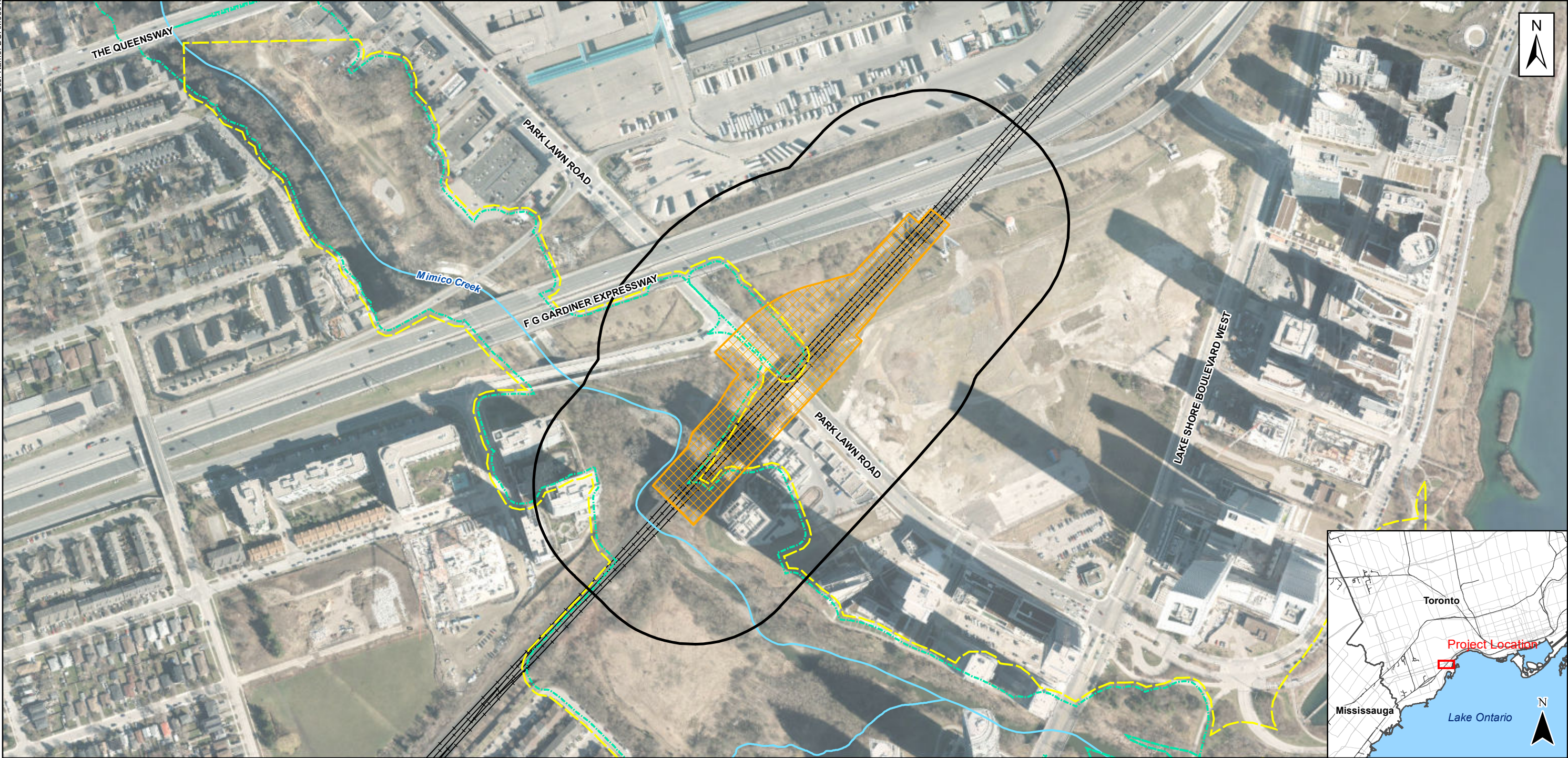
Based on a review of TRCA mapping, the Study Area is partially located within the TRCA's Regulated Area, as well as the Ravine and Natural Features Protection (RNFP) By-Law area. There are no other mapped natural heritage features (or areas) within the Study Area based on a review of the following MNRF databases:

- Lands Information Ontario (LIO);
- NHIC; and
- Natural Heritage Areas mapping (e.g., ANSIs, PSWs, and Environmentally Significant Areas).

The City of Toronto (City of Toronto, 2008) defines ravines as:

1. A discernible landform with a minimum two-metre change in grade between the highest and lowest points of elevation that may have vegetation cover and that has or once had water flowing through, adjacent to, or standing on, for some period of the year; and
2. Buffer areas, areas of tree canopy and environmentally significant areas that contribute to the ecological function of a ravine.

The bottom of the ravine within the Study Area that surrounds Mimico Creek is approximately 76 metres above sea level (masl), whereas the top of the ravine is approximately 89 masl, representing a 13 m change in elevation.

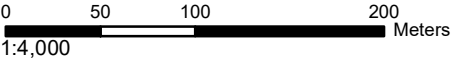


LEGEND

- Proposed Project Footprint (approximate)
- Study Area - 120 metres
- Toronto Region Conservation Authority (TRCA) Regulated Area
- Ravine and Natural Feature Plan (RNFP) Area
- Permanent Watercourse
- Railway

NOTES

1. Coordinate system - UTM NAD 1983 Zone 17N
2. Roads, Railways, Watercourses - Land Information Ontario; RNFP, City of Toronto 2019; TRCA Regulated Area, TRCA 2019
3. Station Footprint Based on Preliminary Station Design.



Project: Park Lawn GO Station	
Figure Title: Environmental Project Report - Designated Natural Heritage Features	
Prepared By:	Date: December 17, 2021
Version: PL.EP.100-1	Review: Figure: 4-1

4.2 Tree Inventory

Based on a review of the City of Toronto Interactive Map and TRCA Regulated Area Map, a portion of the Project falls within the TRCA Regulated Limits and the RNFP limits. Therefore, the Study Area is defined as the limits of development including a six metre assessment area beyond the GO Station footprint in accordance with the applicable City of Toronto Tree By-Law. Trees situated on private property or City-owned property within a six metre area from the development footprint were included in the tree inventory. As the RNFP regulatory limits require a 12-metre buffer, the Study Area has been expanded to 12 metres for those portions of the Project within the RNFP and TRCA limits.

Multiple property owners were identified within the Study Area and are shown on Figure 1-2 in Appendix B of this EPR.

4.2.1 Methodology

4.2.2 Desktop Review

Prior to conducting fieldwork, the Study Area was reviewed using Google Maps, Street view, Bing, Ontario Geo Hub and Google Pro to gain an understanding of the existing conditions.

Hatch reviewed the site location and applicable City of Toronto Tree By-Laws using the City of Toronto's Interactive Map (version 2), which displays property limits and RNFP limits. TRCA Regulated Area map was reviewed as well, to identify TRCA regulated limits within the Study Area. In addition, the following guidelines, documents, and by-laws were reviewed and used to guide the field work:

- City of Toronto City Street Tree By-Law (Article II of Chapter 813);
- City of Toronto Private Tree By-Law (Article III of Chapter 813);
- City of Toronto Ravine and Natural Feature Protection By-Law (Chapter 658);
- City of Toronto Parks By-Law (Article VII of Chapter 608);
- City of Toronto - Guidelines for Completion of an Arborist Report (City of Toronto, 2011);
- City of Toronto - Tree Protection Policy and Specifications for Construction Near Trees (City of Toronto, 2016);
- Migratory Birds Convention Act (MBCA), 1994;
- TRCA Regulation Mapping Tool, 2020;
- *Endangered Species Act* (ESA), 2007, O. Reg. 242/08;
- Canadian Food Inspection Agency (CFIA) Directive (D-03-08): Phytosanitary Requirements to Prevent the Introduction Intro and Spread with Canada of the Emerald Ash Borer, *Agrilus planipennis* (Fairmaire), Appendix 5&6 of Directive #D-03-08;

- Metrolinx Vegetation Guideline (Metrolinx, 2020); and
- TRCA Guideline for Determining Ecosystem Compensation, (TRCA, 2018).

4.2.3 Fieldwork

Fieldwork was completed between April and June 2020 to inventory individual trees within the Study Area. Tree identification number, tree species (common and botanical name), location (i.e., private property, City property, Metrolinx ROW, Developer's lands, RNFP/TRCA Regulation limits), dripline radius, tree condition and any comments related to tree health and existing conditions, were logged in a Microsoft Excel table labelled Appendix A in Appendix B of this EPR (Tree Inventory Plan).

Assessments were conducted from the ground level only. As part of the fieldwork, photographs using a digital camera or smartphone were included. Work was completed by an International Society of Arboriculture (ISA) Certified Arborist in good standing, as well as supported by Environmental Field Staff to assist with fieldwork, figures and report writing. Any cavities or crevices with potential for wildlife use were noted and the information forwarded to appropriate disciplines.

Individual trees and shrubs within the Metrolinx-owned property that were greater than or equal to 10 centimetres DBH were numbered. Trees of all diameters situated within lands designated RNFP lands were included in the inventory, with those greater than or equal to 10 cm DBH being numbered. Those trees and shrub less than 10 centimetres Diameter at Breast Height (DBH) within the Metrolinx-owned property, other private property, and RNFP/TRCA limits were counted using a tally system. For those trees outside the Metrolinx-owned property, and situated on private property, that are over 30 centimetres DBH were numbered as per the City of Toronto Private Tree By-Law. Those trees of all sizes located on City-owned property were numbered as per the City of Toronto City Street or Parks Tree By-Law(s). Trees that are inaccessible due to existing conditions (i.e., steep, or unsafe terrain, debris with sharp edges), property constraints/limitations (i.e., fences, retaining walls, barriers) or with no Permission to Enter (PTE) were provided a Tree ID number and assessed within a distance where species and diameter could still be determined. The Tree Inventory Chart, in Appendix A of Appendix B of this EPR, includes a column 'Assessment Approximate (No PTE)', which indicates the trees that were not physically tagged with a number tree tag.

4.2.4 Description of Existing Conditions

4.2.5 Description of Trees

Trees observed throughout the Study Area are comprised mainly of native and non-native tree species. Trees ranged in sized from less than 10 cm to 152 cm DBH. Appendix A in Appendix B of this EPR provides the identification number of inventoried trees, botanical (Latin) and common names, size, conditions, dripline radius, location, tree category, Tree Protection Zone (TPZ), address, preservation, removal, and/or injury notes, permit

requirements and remarks. The photographic inventory of trees identified is provided in Appendix C in Appendix B of this EPR.

Field investigations were undertaken April 20, and June 2-3, 2020 within the Study Area. A total of 242 trees were surveyed; in addition, stem counts were completed for RNFP and TRCA Regulated Areas where they intersected the Project limit.

Thirty-one species and varieties were identified for the Project that were greater than 10 cm DBH. These include Apple spp. (*malus spp.*), Black Locust (*Robinia pseudoacacia*), Black Walnut (*Juglans nigra*), Black Willow (*Salix nigra*), Blue Beech (*Carpinus caroliniana*), Blue Spruce (*Picea pungens*), Cottonwood (*Populus deltoides*), Dogwood (*Cornus spp.*), Eastern White Cedar (*Thuja occidentalis*), Flowering Dogwood (*Cornus florida*), Green Ash (*Fraxinus pennsylvanica*), Hackberry (*Celtis occidentalis*), Kentucky Coffee Tree (*Gymnocladus dioica*), Manitoba Maple (*Acer negundo*), Norway Maple (*Acer platanoides*), Norway Spruce (*Picea abies*), Red Cedar (*Juniperus virginiana*), Russian Olive (*Elaeagnus angustifolia*), Scots Pine (*Pinus sylvestris*), Serviceberry (*Amelanchier sp.*), Siberian Elm (*Ulmus pumila*), Staghorn Sumac (*Rhus typhina*), Sugar Maple (*Acer saccharum*), Sweet Cherry (*Prunus avium*), Trembling Aspen (*Populus tremuloides*), White Birch (*Betula papyrifera*), White Elm (*Ulmus americana*), White Mulberry (*Morus alba*), White Pine (*Pinus strobus*), White Spruce (*Picea glauca*), and Yellow Birch (*Betula alleghaniensis*).

A total of 33 percent of trees were found to be in good condition, 61 percent were in fair condition, less than five percent were in poor condition, and less than five percent were dead. Dead trees include trees #313, #319, #325, #422, and #424. While dead trees are exempt from permitting requirements, their condition shall be assessed as part of the Tree Inventory Plan and Arborist Report in order to qualify for exemption prior to removal. Trees in fair or poor condition showed signs and symptoms of abiotic and biotic defects leading to decline including:

- Deadwood ranging between five to greater than 30 percent;
- Weakly formed unions (i.e., included bark);
- Poor tree form due to abnormal development of scaffold branches causing injury to other branches;
- Sprouts at the base and on the trunk;
- Vine suppression;
- Lean and contorted growth;
- Lack of vigour;
- Broken branches;
- Trunk wounds and cracks; and

- Defoliation from Cankerworm.

It is noted that several Ash trees were observed during the field investigations; many of these trees showed signs of Emerald Ash Borer (EAB) infestation. Most Ash trees that did not show signs of EAB infestation were noted to be in declining health and condition or dead.

4.2.5.1 *Description of Stem Count Data*

Stem counts for vegetation under 10 cm was completed where the Study Area intersected the RNFP area and the TRCA regulated areas.

Approximately 405 stems were inventoried throughout the Study Area. Twelve tree species and varieties were identified which include: Ash spp. (*Fraxinus spp.*), Basswood (*Tilia americana*), Black Locust (*Robinia pseudoacacia*), Bur Oak (*Quercus macrocarpa*), Cherry spp. (*Prunus spp.*), Elm spp. (*Ulmus spp.*), Manitoba Maple (*Acer negundo*), Norway Maple (*Acer platanoides*), Maple spp. (*Acer spp.*), Staghorn Sumac (*Rhus typhina*), White Elm (*Ulmus americana*), and Willow spp. (*Salix spp.*).

4.2.6 *Species at Risk*

During the field investigations, a screening was undertaken for any woody vegetative SAR within the Study Area. No Butternuts were identified during this field investigation. One planted Kentucky Coffee Tree (*Gymnocladus dioica*), Tree #173 was observed within the Study Area located on Park Lawn Road as a City of Toronto street tree. Although MECP has not been contacted yet, previous correspondence for similar assignments has resulted in an exemption from the ESA permit process based on the origin and use as an amenity tree within a street setting.

4.3 *Archaeological Resources*

4.3.1 *Methodology*

Archaeological Services Inc. (ASI) was retained by Hatch to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Park Lawn GO Station in the City of Toronto (Figure 4-2). The Study Area buffer is 50 m.

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (*Ontario Heritage Act*, R.S.O. 1990, c. O.18 [as Amended in 2019], 1990, as amended in 2018) and the 2011 Standards and Guidelines for Consultant Archaeologists (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) (MHSTCI 2011), formerly the Ministry of Tourism, Culture and Sport.

The Master Plan of Archaeological Resources of the City of Toronto (Interim Report) (ASI et al., 2007) was consulted.

A draft of the Stage 1 Archaeological Assessment Report was shared with potentially interested Indigenous Nations for their review and comment.

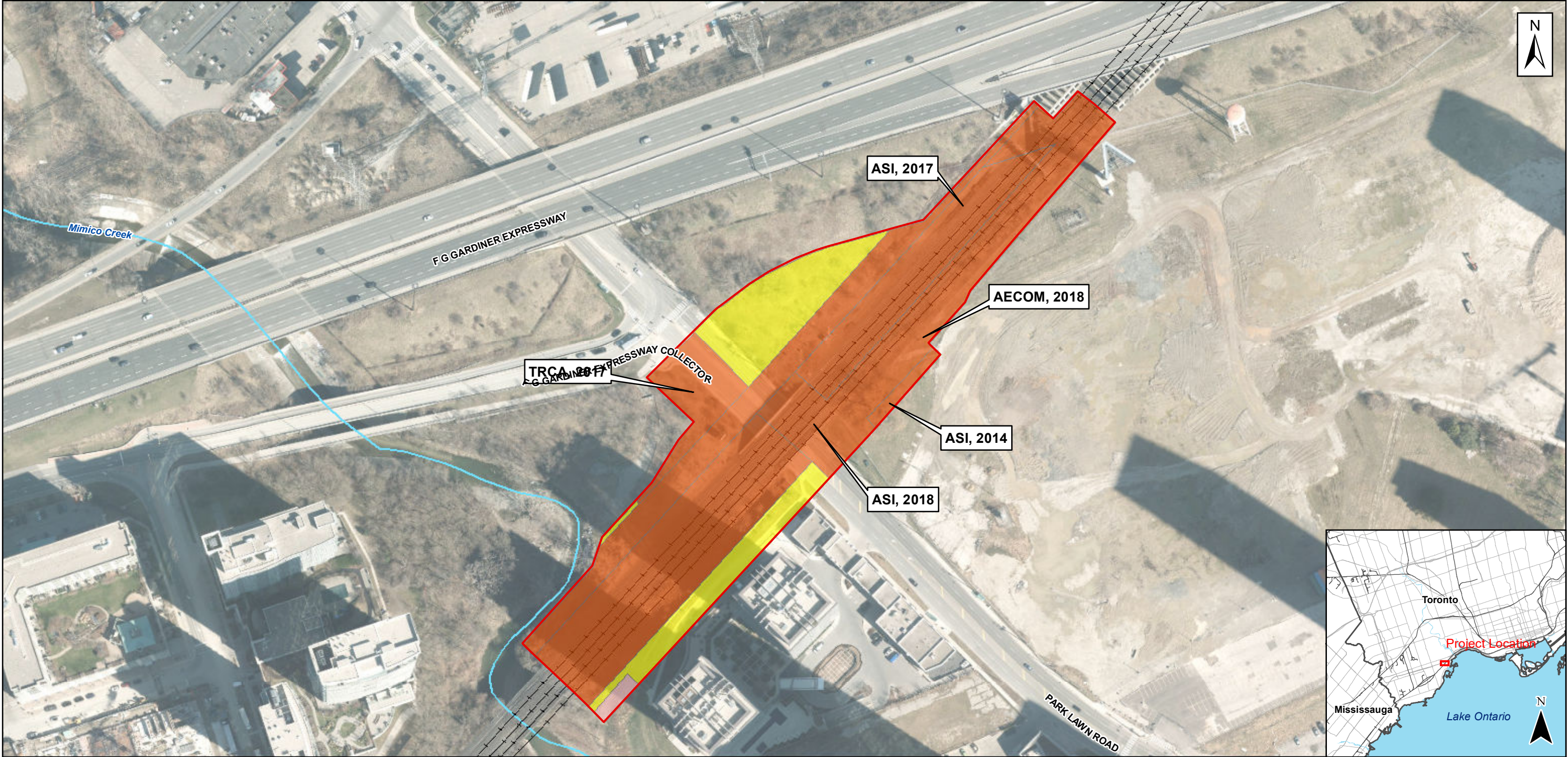
4.3.2 Stage 1 Archaeological Assessment

A Stage 1 Archaeological Assessment (Project Information Form P380-0066-2020) was undertaken on May 18, 2020 by ASI. The Archaeological Assessment was entered into the Ontario Public Register on November 1, 2021. A Stage 1 Archaeological Assessment consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect current condition and contacting MHSTCI to find out whether, or not there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and determine if further archaeological assessment (e.g., Stage 2-4) is necessary. The Stage 1 Archaeological Assessment, and MHSTCI letter are included in Appendix C.

The Stage 1 background study determined that one previously registered archaeological site is located within one kilometre of the Study Area and is not within 50 metres. The property inspection of the proposed footprint determined that areas which had not been previously assessed do not retain archaeological potential and do not require further survey.

In light of these results, the following recommendations are made:

1. The Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or having been previously assessed. These lands do not require further archaeological assessment; and,
2. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.



LEGEND

- | | |
|---|--|
|  Study Area |  Disturbed - No Potential |
|  Railway |  Previously Assessed |
|  Permanent Watercourse |  Slope - No Potential |

- NOTES**
1. Coordinate system - UTM NAD 1983 Zone 17N.
 2. Roads, Railways, Watercourses - Land Information Ontario.
 3. Station Footprint Based on Preliminary Station Design.



Project: Park Lawn GO Station	
Figure Title: Environmental Project Report - Stage 1 Archaeological Findings	
Prepared By: 	Date: December 17, 2021
Version: PL.EP.100-1	Review:  Figure: 4-2

4.4 Built Heritage Resources and Cultural Heritage Landscapes

4.4.1 Methodology

A Cultural Heritage Report: Existing Conditions and Preliminary Impacts Assessment (Cultural Heritage Report) was undertaken on July 16, 2020 by ASI for the proposed Park Lawn GO Station. A copy of the Cultural Heritage Report is included in Appendix D. The assessment for this report consisted of data collection, background historic research, review of secondary source material, and field review. A total of one potential built heritage resource was identified within or adjacent to the rail corridor as listed below.

Based on the results of the background research and field review, one potential Built Heritage Resource (BHR) was identified within the Project Study Area. More information on this property is presented in Appendix A of Appendix D and mapping is provided in Appendix B of Appendix D of this EPR. A Heritage Impact Assessment (HIA) was completed by ERA, as part of the 2150 Lakeshore Development, which identified the BHR, as identified in Table 4-4. A copy of the HIA is included in Appendix D.

Table 4-4: Identified Cultural Heritage Resources within the Study Area

Reference Number	Type of Property	Location	Ownership	Results of Heritage Impact Assessment
BHR-01	Water Tower	Former Mr. Christie Factory Site	Private	Previously Identified (ERA Architects Inc, 2019).

A portion of the Study Area was assessed for known or potential BHRs and CHLs during the GO Rail Network Electrification TPAP (2017) and the OnCorr Due Diligence Project (2019-2020). During the course of these assessments, the railway bridge over Mimico Creek, located at the west end of the Study Area, was identified as requiring further heritage evaluation for cultural heritage value or interest (CHVI). A Cultural Heritage Evaluation Report (CHER) was prepared and finalized in early 2020 which confirmed that the Mimico Creek Bridge at Mile 5.95 does not have CHVI (ASI, 2020b). The Gardiner Expressway Bridge over Lakeshore West rail corridor at Mile 5.68 was also identified as a potential BHR and required further heritage evaluation for CHVI. A CHER was prepared and finalized in 2016 which confirmed that the Gardiner Expressway Bridge at Mile 5.68 does not have CHVI (ASI Archaeological Services Inc., 2016). A copy of both CHERs is included in Appendix D.

4.5 Socio-economic Environment and Land Use

4.5.1 Methodology

The Socio-Economic and Land Use (SELU) Study Area is defined by a circle with a 400 m radius around the footprint of the proposed GO Station. The 400 m Study Area radius provides the team with sufficient data on the surrounding uses, major points of interest and features that exist in proximity to the proposed station location and could be affected by construction and operation activities.

It should be recognized, that due to the lack of SELU features within the 400 m Study Area, a catchment area of 800 m from the Project footprint was used to capture points of interest.

Statistics were compiled in order to describe the current and future social and economic context which influence the use of the GO Station, as well as land use and growth in the vicinity of the GO Station. Additional details related to the socio-economic environment, can be found in the SELUS, provided in Appendix E of this EPR.

4.5.2 Existing Conditions

4.5.2.1 Population and Economic Characteristics

This Project is located in the Toronto neighbourhood of Mimico, and directly borders the neighbourhood of Stonegate - Queensway, both of which are located in the former borough of Etobicoke. Mimico's boundaries roughly consist of the Canadian Pacific Railway (CPR) railway to the far west and the Canadian National Railway (CNR) railway to the southwest, the Gardiner Express to the north, the Humber River to the east, Lake Ontario to the south, and Dwight Avenue to the west. Stonegate-Queensway's boundaries consist of Islington Avenue to the west, Bloor Street to the north, the Humber River to the east and the CNR railway and the Gardiner Expressway to the south.

Combined, the two neighbourhoods in the Study Area cover a much larger geographic area than the Study Area's 400 m radius from the proposed station footprint. In order to depict a more accurate picture of the Study Area's demographics, census data from the four census dissemination areas (DAs) that are located within the Study Area were used.

As of 2016, the total population of Mimico was 33,964 (City of Toronto, 2018a), and the population of Stonegate-Queensway was 25,051 (City of Toronto, 2018b). In total, the population of the two neighbourhoods in 2016 was 59,015, which represented 2 percent of the City of Toronto's total population. The total population of the Study Area census DAs was 12,949, which represents 21.9 percent of Mimico and Stonegate-Queensway's combined population.

The largest and smallest age groups in 2016 in the Mimico Neighbourhood were Working Age (25- 54) at 52 percent of the population, and Youth (15-24) at nine percent of the population. Within the Stonegate-Queensway Neighbourhood, the largest and smallest age groups in 2016 were Working Age (25-54) at 43 percent of the population, and Youth (15-24) at 10 percent.

The Study Area DAs had a working age proportion of 64 percent, much higher than the City's overall proportion of 45 percent. This is due to a low ratio of youth in the Study Area DAs.

Population density in the Study Area DAs was 10,528 per km². The overall Mimico population density was slightly above the City of Toronto average (4,334 per km²) at 4,915 per km², while Stonegate-Queensway was well below at 3,199 per km². Stonegate-Queensway is characterised by single-detached housing typologies, and many natural features such as the Mimico Creek, the west bank of the Humber River, and a large

cemetery, leading to the low population density. The high population density in the Study Area DAs reflects the high density nature of the dwellings in the Study Area.

Between 2001 and 2016 the City of Toronto population increased 10.1 percent from 2,481,494 to 2,731,571. In comparison, the neighbourhood populations in the Study Area increased significantly. The total population of neighbourhoods in the Study Area in 2001 was 48,070 (City of Toronto, 2003), increasing 23 percent to 59,015 in 2016. The total population of DAs in the Study Area in 2001 is unavailable as the DA boundaries have changed since that time. This information is summarized in Table 4-5.

Table 4-5: Neighbourhood, City of Toronto, and Ontario Demographics

Demographic	Study Area Dissemination Areas	Mimico	Stonegate Queensway	City of Toronto
Population (2016)	12,949	33,964	25,051	2,731,571
Population (2001)	N/A	24,195	23,875	2,481,494
Working Age (25-54 years)	64%	52%	43%	45%
Population Density per km ²	10,528	4,915	3,199	4,334

4.5.2.2 Family Household Size and Dwelling Type

In 2016, couples with no children made up between 50 percent (Mimico) (City of Toronto, 2018a), 35 percent (Stonegate - Queensway) (City of Toronto, 2018b), and 61 percent (Study Area DAs) of families in private households in the Study Area. Couples with children made up between 32 percent (Mimico), 48 percent (Stonegate-Queensway), and 39 percent (Study Area DAs) of families in private households in the Study Area. The most prevalent dwelling type in Mimico was 5+ storey apartments (City of Toronto, 2018b), ground-related housing in Stonegate-Queensway (City of Toronto, 2018a), and 5+ storey apartment in the Study Area DAs. The most prevalent dwelling type in the City of Toronto is ground-related housing⁵ (City of Toronto, 2018c). This data is presented in Table 4-6.

⁵ Ground-related housing is the percentage of private dwellings that are not in high-rise apartment buildings (i.e., single, and semi-detached houses, row/townhouse, apartment units in buildings less than 5 storeys, apartments or flats in duplexes and other dwellings such as mobile homes) (Toronto, 2018c)

Table 4-6: Family Household Size in DAs, Neighbourhoods, and the City of Toronto

Demographic	Study Area Dissemination Areas	Mimico	Stonegate Queensway	City of Toronto
Couples with No Children	61%	50%	35%	35%
Couples with Children	39%	32%	48%	44%
Most Prevalent Size of Family	2	2	2	2
Most Prevalent Dwelling Type	5+ Storey Apartments	5+ Storey Apartments	Ground-related Housing	Ground-related Housing

4.5.2.3 Languages Spoken

In 2016 the most common spoken language at home in the neighbourhoods and in the Study Area DAs was English, with between 80 percent for both Mimico and Stonegate - Queensway (City of Toronto, 2018a) (City of Toronto, 2018b) and 82 percent of the population in the Study Area DAs speaking English at home, while 71 percent of the City of Toronto's population spoke English at home. In both neighbourhoods, one percent of the population spoke French at home along with one percent in the DAs. This is comparable to Toronto with one percent of the population speaking French at home. The population speaking a non-official language at home in the neighbourhoods in the Study Area was 19 percent for both neighbourhoods, and 17 percent for the DAs. In the City of Toronto this was higher at 29 percent. This data is presented in Table 4-7.

Table 4-7: Languages Spoken in Neighbourhoods and the City of Toronto

Demographic	Study Area Dissemination Areas	Mimico	Stonegate Queensway	City of Toronto
Population Speaking English at Home	82%	80%	80%	71%
Population Speaking French at Home	1%	1%	1%	1%
Population Speaking a Non-Official Language at Home	17%	19%	19%	29%

4.5.2.4 Income Statistics

As shown in Table 4-8, in 2016 the median household income of Mimico was \$67,525 (City of Toronto, 2018a), \$85,138 in Stonegate-Queensway (City of Toronto, 2018b), and \$70,518 for the Study Area DAs. These were higher than the City of Toronto median household income of \$65,829. The low-income population in both neighbourhoods and the Study Area DAs were lower than that of the City of Toronto in 2016.

Table 4-8: Median Household Income and Low-Income Population in Neighbourhoods, and the City of Toronto

Demographic	Study Area Dissemination Areas	Mimico	Stonegate Queensway	City of Toronto
Median Household Income (2016)	\$70,518	\$67,525	\$85,138	\$65,829
Low-Income Population 18-64 Years (2016)	13%	18.6%	11.6%	20.2%

4.5.2.5 *Employment Rate*

The participation rate and employment rate for Mimico, Stonegate-Queensway, and the Study Area DAs are higher than that of the City of Toronto, while unemployment was lower in the two neighbourhoods and the DAs than that of the City of Toronto. Participation rate is measured as the percentage of the population, which is in the labour force, while employment rate is measured as the percentage of the labour force which is employed. This information is presented in Table 4-9.

Table 4-9: Participation Rate, Employment Rate and Unemployment Rate in Neighbourhoods and the City of Toronto

Demographic	Study Area Dissemination Areas	Mimico	Stonegate Queensway	City of Toronto
Participation Rate	77.3%	70.9%	67.5%	64.7%
Employment Rate	73.5%	66.5%	63.0%	59.3%
Unemployment Rate	5.2%	6.2%	6.7%	8.2%

4.5.2.6 *Existing Land Use*

The data used to complete this section was collected through the Open Data Toronto portal.

4.5.2.7 *Existing Land Use and Physical Neighbourhood Composition*

The predominant dwelling types within the Study Area DAs are apartment buildings with five or more storeys. The least common dwelling type was single detached housing. There is a concentration of high-rise apartments to the south, southeast, and west of the proposed Project footprint.

The Study Area is located in the Mimico neighbourhood of Toronto. It crosses a major arterial road, Park Lawn Road, as well as being adjacent to the Gardiner Expressway, and just north of another major arterial road, Lake Shore Boulevard West (City of Toronto, 2018d). The Study Area is located near numerous parks and natural features.

The general surrounding of the Project footprint are summarized below:

- North - To the north of the Project footprint are natural areas and employment lands, primarily occupied by the Ontario Food Terminal, the main produce distribution centre for Toronto;
- East - To the east of the Project footprint is high-density apartment developments in the sub neighbourhood referred to as Humber Bay Shores, and the Humber River;
- South - To the south of the Project footprint is more high-density apartment developments in the Humber Bay Shores area, along with Humber Bay Park on Lake Ontario; and
- West - To the west of the Project footprint is residential primarily comprised of townhouse and single-detached housing typologies.

Socio-Economic and Land Features

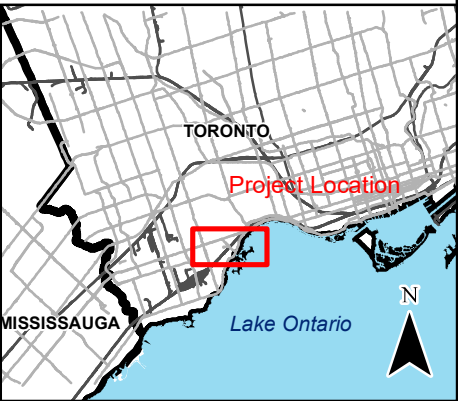
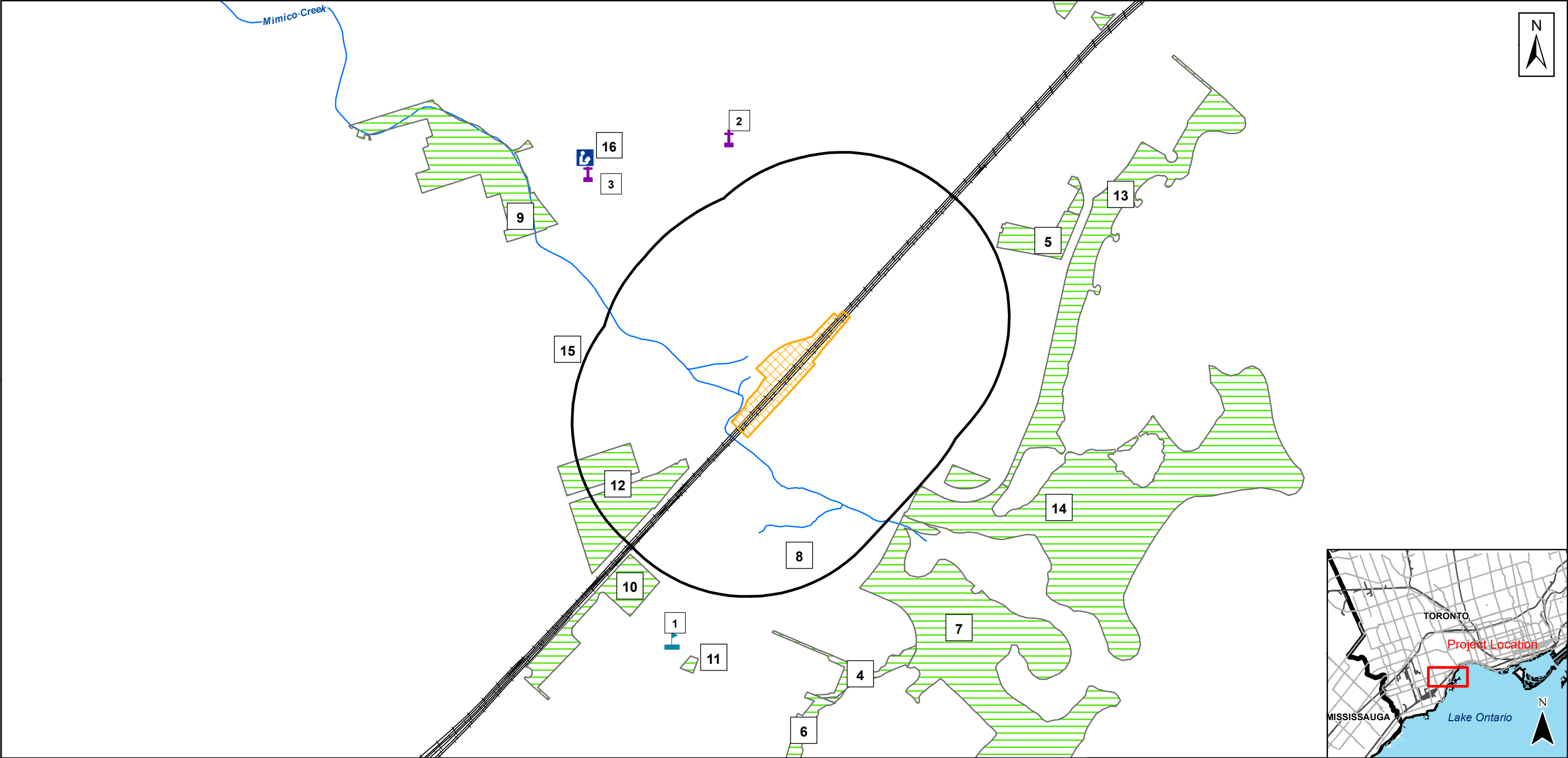
The existing socio-economic and land use features near the site were identified. These features were categorized as follows:

- Institutional Uses - Generally included are elementary, secondary, and post-secondary schools, places of worship, and government institutions;
- Recreational Uses, Parks and Open Spaces - Generally included are recreational centres, community amenities, parks and open spaces, and protected areas such as the Mimico Creek; and
- Community Groups and Resources - Generally included are groups or organizations that work toward community benefit.

Socio-economic and land use features were identified using City of Toronto Open Data (City of Toronto, 1998-2020a). Due to the lack of socio-economic land use features in the Study Area, a catchment area of 800 m from the Project footprint was used to capture these features. Table 4-10 summarizes the SELU points of interest within 800 m of the Project footprint. Specific points of interest are also shown in Figure 4-3.

Table 4-10: Points of Interest within the Study Area

Key Feature ID	Feature Type	Feature Name
1	Institutional	David Hornell Junior School
2	Institutional	Church of the Transfiguration
3	Institutional	St. James Anglican Church
4	Recreational Uses and Parks	Humber Bay Promenade Park
5	Recreational Uses and Parks	Jean Augustine Park
6	Recreational Uses and Parks	South Humber Park
7	Recreational Uses and Parks	Mimico Waterfront Park
8	Recreational Uses and Parks	Humber Bay Park West
9	Recreational Uses and Parks	Flora Voisey Park
10	Recreational Uses and Parks	Jeff Healey Park
11	Recreational Uses and Parks	Manchester Park
12	Recreational Uses and Parks	Alexander Park
13	Recreational Uses and Parks	Grand Avenue Park
14	Recreational Uses and Parks	Humber Bay Shores Park
15	Recreational Uses and Parks	Humber Bay Park
16	Recreational Uses and Parks	Dalesford Park
17	Institutional	Humber Bay Branch (library)



LEGEND				School	NOTES 1. Coordinate system - UTM NAD 1983 Zone 17N 2. Sources: Roads, Railways, Watercourses - Land Information Ontario; RNFP, City of Toronto 2019. 3. Places of Worship, Schools, and Parks - Open Data Toronto 4. Station Footprint Based on Preliminary Station Design  0 165 330 660 Meters 1:10,000
	Study Area - 400 Meters			Place of Worship	
	Proposed Project Footprint (approximate)			Library	
	Railway			Recreational Uses and Parks	
	Permanent Watercourse				
Project: Park Lawn GO Station					
Figure Title: Socio-Economic and Land Use Study - Points of Interest					
Prepared By: 		Date: December 17, 2021			
Version: PL.TI.100-1		Review: 		Figure: 4-1	

4.5.2.8 *Institutional Uses*

No schools exist within the Study Area. Due to this, a catchment area of 800 m from the Project footprint was used to capture institutional uses. The only school within 800 m is David Hornell Junior School.

There are no Hospitals within the Study Area or within the expanded 800 m boundary.

There are two places of worship located within the 800 m catchment area: Church of the Transfiguration and St. James Anglican Church.

There is one library located within the 800 m catchment area: Humber Bay Branch.

4.5.2.9 *Recreational Uses, Parks and Open Spaces*

While only two parks exist within the Study Area, numerous parks are located within 800 m of the Project footprint.

The Project's close proximity the Lake Ontario places it in proximity to a string of public parks, open spaces, and recreation activities along the shores of Lake Ontario. This includes Humber Bay Parks East and West, along with waterfront promenades.

There are no community centres or City of Toronto youth services located within the Study Area.

The Mimico Creek runs north-south on the western edge of the Study Area and is designated as Natural Area. Being a part of the Parks and Open Space Areas in the City of Toronto, these areas contain many of the City's natural habitat areas, recreation trails, stormwater management facilities and include some privately owned lands which adjoin a ravine. The City of Toronto OP states that any development in Parks and Open Space Areas will protect, enhance, or restore trees, vegetation and other natural heritage features and maintain or improve connectivity between natural heritage features (4.3.6 (Development Criteria in Parks and Open Spaces)). In addition, the OP notes that City owned land in the Green Space System (2.3.2.4) and in Parks and Open Space Areas (4.3.8) cannot be sold or disposed of but lands may be exchanged for other nearby land of equivalent or larger area and comparable or superior green space utility.

4.5.2.10 *Community Groups and Resources*

There are a few community associations within close proximity to the Study Area. The associations serve the residents in the Mimico and Humber Bay Shore areas and work to enhance the quality of life in their respective communities through active engagement with their residents. These are:

- Humber Bay Shores Condominium Association;
- Humber Bay Shores Ratepayers & Residents Association; and
- Mimico Residents Association.

The Business Improvement Areas (BIAs) nearest to the Study Area are the Mimico By The Lake BIA along Lake Shore Blvd west of Park Lawn, and the Mimico Village BIA further west on Royal York Road.

4.5.2.11 Public Transit

The Lakeshore West GO line runs along the existing rail corridor through the Study Area. The line runs both regular and express trains, and connects downtown Toronto to Burlington, with occasional trips to Hamilton, St. Catharines, and Niagara Falls. The Project would be a new station on the Lakeshore West GO line.

The TTC is responsible for public transit in the City of Toronto. The TTC serves the Study Area and the broader neighbourhood via the 501 and 508 streetcars (along Lake Shore Blvd) (Toronto Transit Commission, 2020a), 66B bus (along Park Lawn Road), 176 bus (Mimico GO neighbourhood bus route), and the 145 express bus (along Lake Shore Blvd).

Route 501 is on the Ten-Minute Network, and Route 66B is regular service. Route 508, 176, and 145 all operate at limited times of day with varying frequencies.

The transit routes within the Study Area are presented in Table 4-11 (Toronto Transit Commission, 2020b), TTC service in the Study Area is shown in Figure 4-4.

Table 4-11: Transit Routes within the Study Area

Route Name / Number	Direction	Stops within the Study Area
501 Queen Streetcar	East-west, every ten minutes	Lake Shore Blvd West at Park Lawn Road 2155 Lakeshore Blvd West
508 Lake Shore Streetcar	East-west, no-service in off-peak hours, limited operation	Lake Shore Blvd West at Park Lawn Road 2155 Lakeshore Blvd West
66B Local Bus	North-south, regular service	Park Lawn Road at Gardiner Expressway 88 Park Lawn Road Park Lawn Road at Lakeshore Blvd West 2155 Lakeshore Blvd West
176 Local Bus	East-west, no service in off-peak hours, limited operation during the day	88 Park Lawn Road Park Lawn Road at Lakeshore Blvd West 2155 Lakeshore Blvd West
145 Express Bus	East-west, no service in off-peak hours, limited operation during the day	Lake Shore Blvd West at Park Lawn Road 2155 Lakeshore Blvd West
Lakeshore West GO	East-west on rail corridor	There are currently no stops in the Study Area. The Project would add a new station/stop

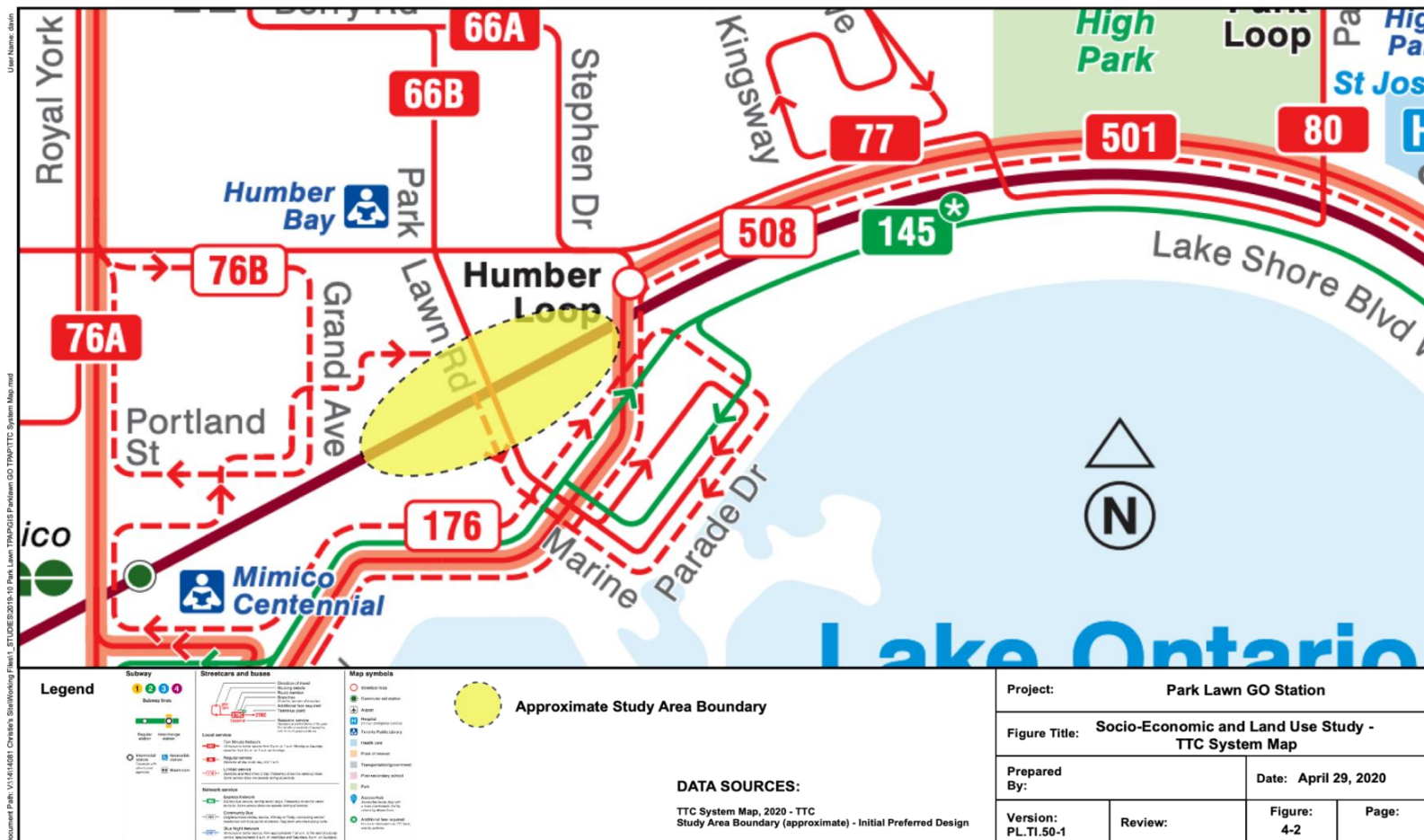


Figure 4-4: TTC System Map

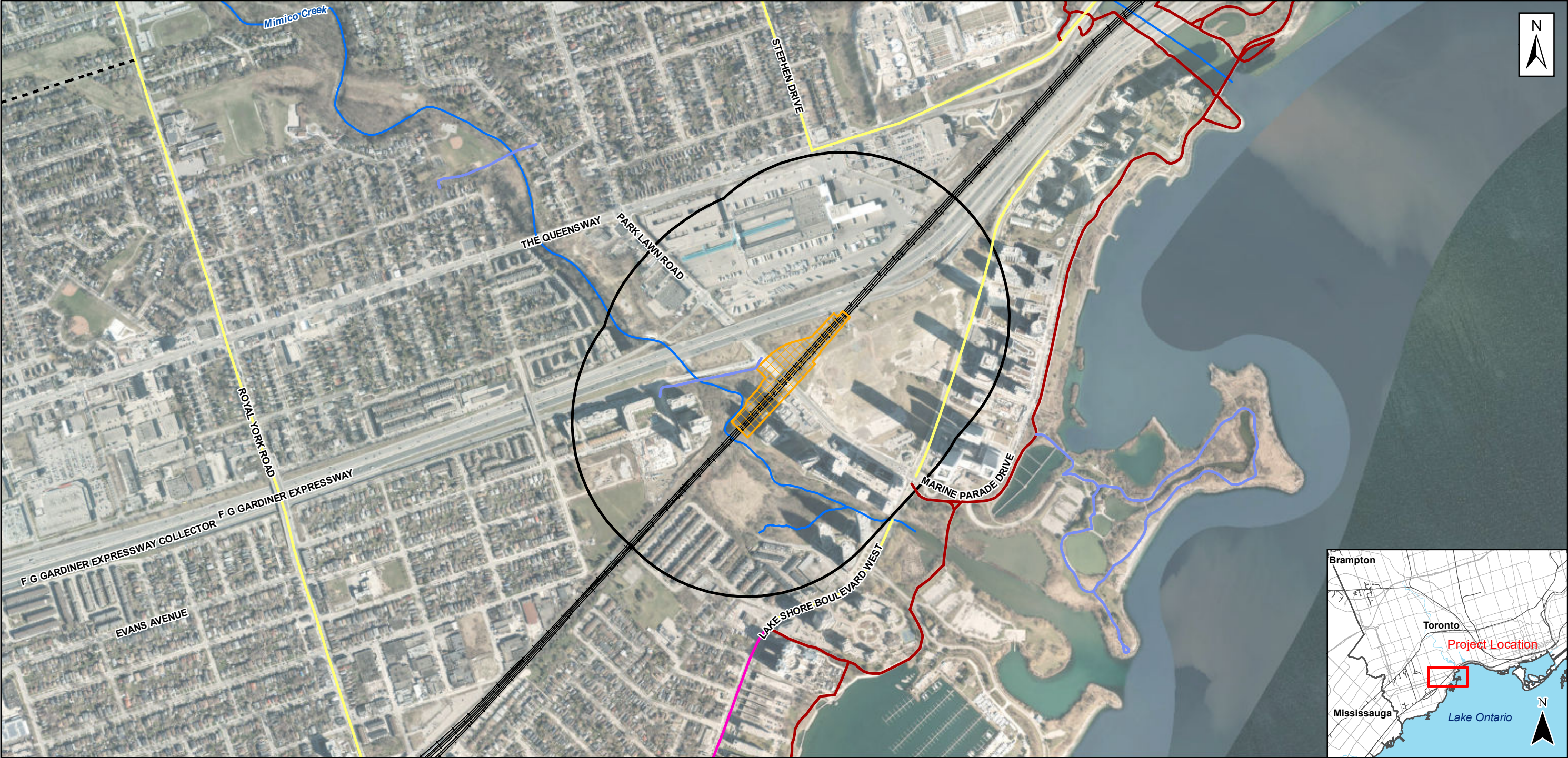
4.5.2.12 *Cycling Infrastructure*

The Study Area is well served by cycling amenities. Lake Shore Boulevard has eastbound and westbound bicycle lanes on certain segments. There is a major multi-use pathway (MUP) known as the Humber Bay Park Trail which runs along the waterfront south of the Study Area, as well as minor multi-use trails throughout Humber Bay Park. There is a minor multi-use trail to the northwest of the Project footprint along the Gardiner Expressway eastbound offramp which connects over the Mimico Creek to the adjacent residential developments.

The cycling network is shown in Figure 4-5.

On June 9, 2016 Toronto City Council approved the 10-Year Cycling Network Plan to connect, grow and renew infrastructure for Toronto's cycling routes. On July 17, 2019 Toronto City Council approved the Cycling Network Plan Update, which provides a new timeframe to improve road work coordination, accountability, and implementation (City of Toronto, 2019a). The Cycling Network Plan now consists of a longer-term overall proposed network, as well as a detailed three year rolling implementation program (currently 2019 to 2021).

The Humber Bay Park Trail, east of Mimico Creek, is scheduled to be renewed in the current 2019 to 2021 implementation program.



LEGEND			
	Proposed Project Footprint (approximate)		Bike Lanes
	Study Area - 400 Metres		Cycle Tracks
	Railway		Major Multi-use Pathway
	Permanent Watercourse		Minor Multi-use Pathway
			Suggested On-Street Routes

NOTES

1. Coordinate system - UTM NAD 1983 Zone 17N
2. Roads, Railways, Watercourses - Land Information of Ontario
3. Trails and Pathways - Toronto Open Data
4. Station Footprint Based on Preliminary Station Design

0180360720

1:10,000Meters

Project: Park Lawn GO Station	
Figure Title: Environmental Project Report - Trails and Pathways	
Prepared By: HATCH	Date: December 17, 2021
Version: PL.EP.100-1	Review: Figure: 4-5

4.5.2.13 *Travel Statistics*

According to 2016 Statistics Canada Data, in Toronto, 46 percent of commuters were the driver of a private vehicle, while 37 percent used public transit, nine percent walked, and three percent bicycled. About 69 percent of respondents had a commute of less than 45 minutes (City of Toronto, 2018). In the Study Area DAs, 69 percent of commuters were the driver of a private vehicle, 23 percent used public transit, two percent walked, and one percent bicycled. Approximately 65 percent of respondents had a commute time of less than 45 minutes in the Study Area DAs. (Statistics Canada, 2017).

4.5.2.14 *Utilities*

Several utilities are located within the Study Area either along or crossing the Lakeshore West rail corridor. In addition to railway signal and fibre optic lines located along the north side of the corridor, the following utilities are located within the Study Area:

Bell Canada:

- Direct buried cable located along south side of the rail corridor; and
- Communication duct bank crosses the rail corridor at Park Lawn Road.

City of Toronto:

- Watermain crosses the rail corridor at Park Lawn Road; and
- Storm and sanitary sewers cross the rail corridor west of Mimico Creek.

Enbridge Gas

- Two natural gas pipelines cross the rail corridor at Park Lawn Road.

Rogers:

- Communication conduit along north side of the rail corridor; and
- Fibre optic crosses the rail corridor at Park Lawn Road.

Telus:

- Cable and communication duct bank located along south side of the rail corridor,

Toronto Hydro:

- Overhead transmission lines along south side of the rail corridor; and
- Overhead and underground transmission lines cross the rail corridor at Park Lawn Road.

Zayo:

- Communication conduit located along north side of the rail corridor.

4.5.2.15 Residential Uses

The Study Area contains a large amount of residential development, primarily in the form of high-rise condominiums. It is common for condominium towers in the Study Area to have a retail/commercial component at grade along Park Lawn Road and Lakeshore Blvd.

There are no Toronto Community Housing developments in or in proximity to the Study Area (Toronto Community Housing Corporation, 2020).

4.5.2.16 Employment Uses

The Study Area contains a large amount of employment lands to the north of the existing rail corridor. As previously mentioned, the employment lands house the Ontario Food Terminal, which is the main produce distribution centre for Toronto.

4.5.3 Existing Visual Characteristics**4.5.3.1 Proposed Park Lawn GO Station Site and Surroundings**

The area where the Project will be located is an existing railway corridor that uses a railway overpass on Park Lawn Road, and an underpass of the Gardiner Expressway. The only pedestrian crossing is located under the rail corridor on Park Lawn Road. There is also a minor MUP located along the Gardiner Expressway eastbound offramp which connects pedestrians from the Project footprint to residential uses on the west side of Mimico Creek. The surrounding land uses consist of high-rise apartments, residential townhomes, and industrial uses. Residential development in the form of high rise apartment buildings is the predominant use immediately to the south and southeast of the Project footprint. The employment land uses are located north of the Project footprint.

The employment land to the north of the Project footprint is largely occupied by the Ontario Food Terminal, a one-to-two storey warehousing facility that is the main produce distribution centre in Toronto. Park Lawn Road is the only arterial road that runs north-south through the Study Area, cutting underneath the rail corridor and the Gardiner Expressway.

Photographs 4-1 and 4-2 illustrate the condition north of the Project footprint.



Photograph 4-1: Ontario Food Terminal (looking north)



Photograph 4-2: Park Lawn Road under Rail Corridor (looking north)

To the south and southeast of the Project footprint is largely high-rise apartment buildings with commercial uses at grade along Park Lawn Road and Lake Shore Boulevard West, as shown in Photograph 4-3.



Photograph 4-3: High-rise Apartments south of the Rail Corridor (looking south)

The Study Area contains a large amount of natural open space along Mimico Creek. The area south of the proposed Project footprint has developed rapidly in recent years and is likely to continue to do so as the previous Mr. Christie site is transitioned to a higher use. Landscape features are largely limited to the parks and open spaces south of Lake Shore Boulevard, along the waterfront promenades and Humber Bay Park. There are some plantings on Park Lawn Road but no street furniture. The same condition exists on Lake Shore Boulevard east of Park Lawn Road.

4.5.3.2 *Built Form*

The area has the following characteristics in terms of built form:

- Mixed-use high-rise buildings with massing and step backs to reduce their dominance. Façades are articulated to clearly define the ground-oriented commercial uses along the street;
- Buildings are oriented toward the street, often with ground floor retail or office space;
- Buildings are set back from the street, with grade related retail at the sidewalk line;
- Where landscaped areas exist, they are provided in interior courtyard spaces; and
- Warehousing is in the form of one and two storey buildings with large amounts of truck only parking and loading.

4.5.3.3 *Public Realm*

There are very few existing public realm features within the Study Area. While the broader area around the Study Area includes neighbourhood parks, waterfront parks, and

waterfront promenades, with the majority of public realm features being south of Lake Shore Boulevard, the only major park in the Study Area is the Grand Avenue Park.

Grand Avenue Park is characterized by a large, manicured lawn with no other public realm features, as shown in Photograph 4-4. The proposed development at 2150 Lake Shore will address the lack of public realm in the Study Area.



Photograph 4-4: Grand Avenue Park from Grand Avenue (view northeast)

4.5.3.4 Movement

The Lakeshore West rail corridor bisects an area lacking any form of urban grid structure in the Study Area. There is only one road which crosses the rail corridor in the Study Area, Park Lawn Road. Park Lawn Road has sidewalks on both sides of the street, allowing for pedestrian movement under the rail corridor and the Gardiner Expressway. There are no pedestrian crossings aside from Park Lawn Road in the Study Area.

There are sidewalks or pathways along the majority of the roads in the network, providing pedestrian-oriented features supportive of people traveling on foot within the Study Area. It is noteworthy to recognize:

- Most intersections, both major and minor, have pavement markings for pedestrian crossings;
- Wayfinding signage includes road and street signs, however no wayfinding signage relating to points of interest currently exist;
- Not all, but most, bus stops include shelters; and
- There is some cycling infrastructure throughout the Study Area, although there is no cycling infrastructure on Park Lawn Road, making accessing the Study Area from the north not cycle-supportive.

4.5.4 Current Development Applications

The City of Toronto Planning Services Development Projects database was consulted to confirm the status of current development applications within the Study Area (City of

Toronto, 1998-2020e). The intent of this exercise was to compile and review these applications to enable the team to further characterize growth within the Study Area and identify any conflicts between the Project and future development.

With the exception of the OPA for 2150 Lake Shore associated with the Park Lawn GO station, there are currently no active applications in the area. Since 2016, six Projects have been built or are currently under construction. These recent developments feature mixed uses with predominantly residential components in tower form. These towers range between 13 and 66 storeys in height. Development is listed in Table 4-12.

Table 4-12: Development Activity Summary

Address Map ID	Application Type	Description	Application Status
251 Manitoba Street Map ID 1	OPA/ZBA	A 29-storey apartment building with a 5-storey podium and a mid-rise building.	Under Construction
2161 Lake Shore Blvd W Map ID 2	OPA/ZBA	A 54-storey residential tower, a 4-storey commercial building, and a 14-storey residential building with grade related commercial space.	Under Construction
2183 Lake Shore Blvd W Map ID 3	OPA/ZBA	Two mixed-use buildings, 49 and 66-storeys in height, with a total of 1,280 residential units.	Under Construction / Built
10 Park Lawn Road Map ID 4	SPA	A 45-storey mixed-use building with 523 residential units and approximately 1200 m ² of commercial floor space.	Built (2018)
2153 Lake Shore Blvd W Map ID 5	OPA/ZBA	Two residential towers, 49 and 14-storeys in height, and a 3-storey non-residential building fronting Lake Shore Boulevard West.	Built (2017)
2143 Lake Shore Blvd W Map ID 6	OPA/ZBA	Two residential towers and one commercial tower. "Tower A" is a 16-storey residential building, "Tower B" is a 50-storey residential building, and "Tower C" is a 5-storey commercial building.	Built (2018)
2157 Lake Shore Blvd Map ID 7	OPA/ZBA	13-storey hotel building with a restaurant on the ground floor.	Under Review
2150 Lake Shore Blvd W Map ID 8	OPA/ZBA (May 2020)	A comprehensive mixed-use development proposing the Park Lawn GO station, new streets, parks and open spaces, and a range of uses including	Under Review

Address Map ID	Application Type	Description	Application Status
		residential, employment, retail, and institutional.	

4.6 Air Quality

4.6.1 Methodology

The objectives of the AQIA are:

- To predict the concentrations of the selected contaminants resulting from rail traffic along the Lakeshore West rail corridor and buses from adjacent roadways for the three scenarios:
 - Existing Conditions (2020);
 - Future, without the Park Lawn GO Station (2028) (No-Build); and
 - Future, with the Park Lawn GO Station (2028) (Build).
- To predict the combined effect of the Project and ambient background concentrations at representative worst-case receptors; and
- To use these predictions to assess potential impacts of the Project according to applicable guidelines.

To satisfy the study objectives, existing and planned sensitive receptors within the Study Area for the Park Lawn GO Station were confirmed and documented. The predicted air quality impacts associated with the development of the Park Lawn GO Station have been assessed and compared to threshold limits. A sensitive receptor for the purposes of this AQIA is defined by the MECP (MECP, Guideline A-11: Air Dispersion Modelling Guideline for Ontario, 2017) to include a:

- Place of residence;
- Child care facility;
- Health care facility;
- Senior citizen's residence;
- Long-term care facility; or
- School.

In cases where one of these scenarios lead to an excessive concentration of one of the selected pollutants, mitigation measures will be suggested to reduce the severity of potential impacts on air quality.

The AQIA Study Area is bounded by one kilometre to the northeast and one kilometre to the southwest, for a total of two kilometres along the Lakeshore West rail corridor, to incorporate trains accelerating out of and decelerating into the GO Station. Predicted local air quality impacts associated with roadways and railways tend to drop off significantly at downwind distances greater than 300 metres, therefore the sensitive receptors included in this assessment were restricted to within 300 metres of the rail corridor.

For the three scenarios, rail traffic, scheduled bus traffic and on-road vehicles travelling on local roads near the station were utilized to determine impacts of the Park Lawn GO Station on sensitive receptors within the Project Study Area. The modelled concentrations due to GO Transit operations were added to background sources and the resulting sums were compared to the most stringent air quality thresholds in order to evaluate the potential for adverse effects. The Contaminants of Concern (COCs) that were assessed in the AQIA included in Table 4-13.

Table 4-13: Contaminants of Concern

Contaminants of Concern
Particulate Matter less than 2.5 μm (PM _{2.5})
Particulate Matter less than 10 μm (PM ₁₀)
Nitrogen Dioxide (NO ₂)
Carbon Monoxide (CO)
Ozone (O ₃)
Acrolein
Benzene
1,3-Butadiene
Acetaldehyde
Formaldehyde
Benzo(a)pyrene

A qualitative assessment was also undertaken for Total Suspended Particulate (TSP).

All the dispersion models completed provided hourly results. Where the criterion was on an hourly basis, the maximum hourly result was reported. If the criterion was on a daily (24 hour) basis, the maximum 24 hour concentration result was reported. The annual results were the average of the hourly values for the year. The results were separated by contaminant and the following parameters are presented in the results tables:

- Receptor ID;

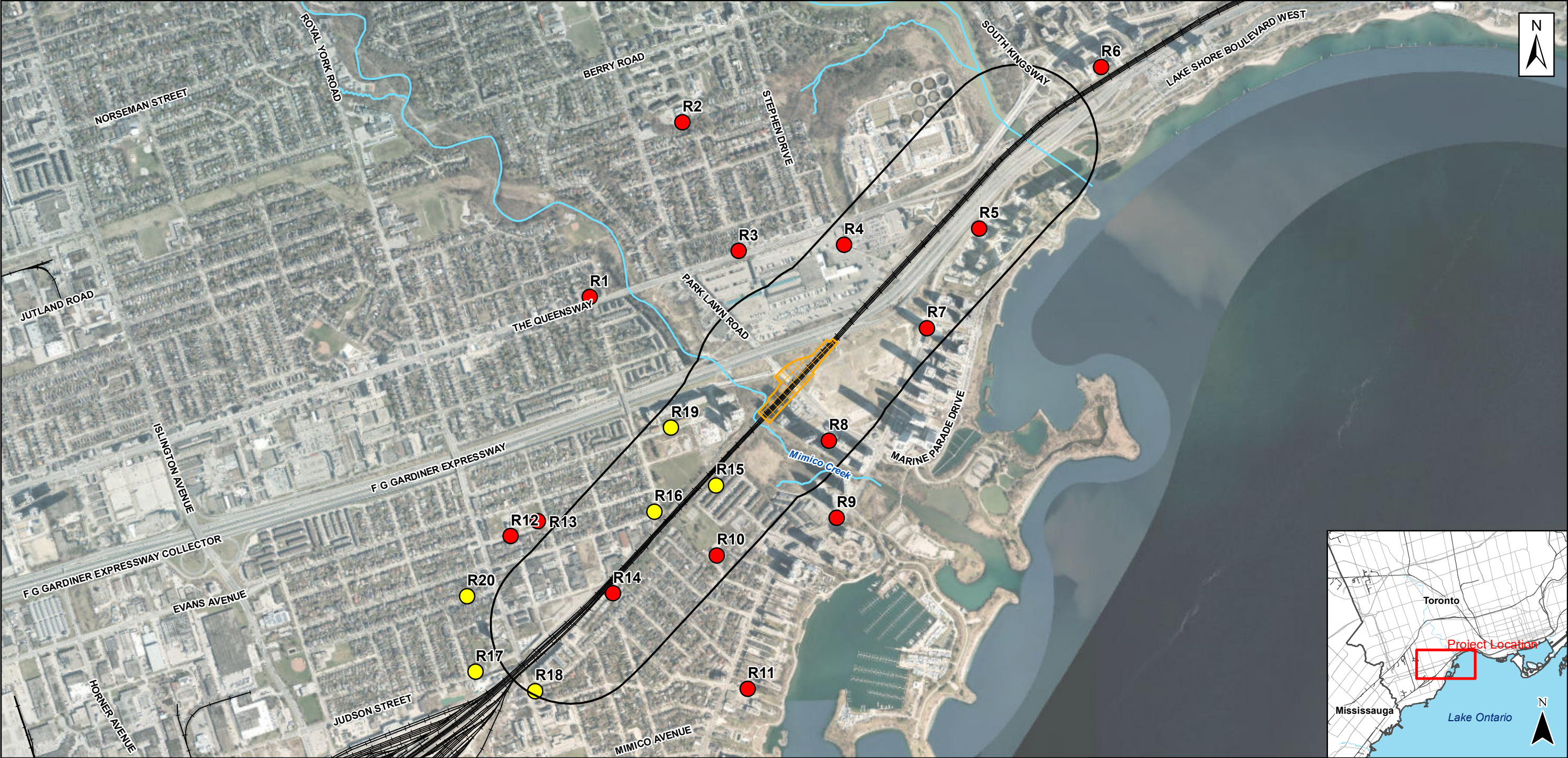
- Address (POI);
- Averaging Period;
- Scenario;
- The 90th percentile background value (from the MECP and National Air Pollution Surveillance (NAPS) air quality monitoring stations). This value is summed with the modelled concentration to result in the maximum cumulative predicted concentration;
- Criterion (applicable limit value);
- The maximum concentration predicted;
- The median concentration predicted;
- The 90th percentile concentration predicted;
- The maximum cumulative concentration predicted for the most impacted receptor;
- The median cumulative concentration predicted;
- The 90th percentile cumulative concentration predicted;
- The maximum cumulative percentage (%) of criterion; and
- The 90th percentile cumulative percentage (%) of criterion.

It is to be noted that emission rates for passenger vehicles, buses and heavy vehicles tend to decrease over time as new pollution control technologies are introduced in the transportation sector.

Receptor locations for the GO Station are shown in Figure 4-6.

4.6.2 Existing Conditions

Existing conditions for the dispersion modelling are shown in Table 4-14 (Carbon Monoxide), Table 4-15 (Nitrogen Dioxide), Table 4-16 (PM_{2.5}), Table 4-17 (PM₁₀), Table 4-18 (Benzene)m, Table 4-19 (1,3 Butadiene), Table 4-20 (Formaldehyde), Table 4-21 (Acetaldehyde), Table 4-22 (Acrolein) and Table 4-23 (B(a)P).



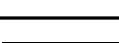
LEGEND		NOTES		Project: Park Lawn GO Station		
	Proposed Project Footprint (approximate)	1. Coordinate system - UTM NAD 1983 Zone 17N 2. Sources: Roads, Railways, Watercourses - Land Information Ontario; RNFP, City of Toronto 2019. 3. Station Footprint - Masterplan Concept. 02505001,000 Meters 1:15,000		Figure Title: Environmental Project Report - Critical and Sensitive Receptors		
	Study Area - 300 Metres			Prepared By: 		
	Railway			Date: December 17, 2021		
	Permanent Watercourse			Version: PL.EP.100-1	Review: 	Figure: 4-6
Receptors						
	Critical					
	Sensitive					

Table 4-14: Summary of Model Predicted Results for Most Impacted Sensitive Receptor - Carbon Monoxide

Receptor ID	Address	Averaging Period	Scenario	Background Concentration ($\mu\text{g}/\text{m}^3$)	Criterion ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Median Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	90 th Percentile Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	1-HR	Existing	412	36200	452	415	422	1.2%	1.2%
		1-HR	Future No-Build	412	36200	503	418	430	1.4%	1.2%
		1-HR	Future Build	412	36200	633	429	429	1.7%	1.2%
		8-HR	Existing	400	15700	417	404	408	2.7%	2.6%
		8-HR	Future No-Build	400	15700	429	407	415	2.7%	2.6%
		8-HR	Future Build	400	15700	496	420	446	3.2%	2.8%

Table 4-15: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Nitrogen Dioxide

Receptor ID	Address	Averaging Period	Scenario	Background Concentration (µg/m³)	Criterion (µg/m³)	Maximum Cumulative Concentration (µg/m³)	Median Cumulative Concentration (µg/m³)	90 th Percentile Cumulative Concentration (µg/m³)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	1-HR	Existing	46.3	400	128.1	52.8	65.5	32%	16%
		1-HR	Future No-Build	46.3	400	229	57.4	81.0	57%	20%
		1-HR	Future Build	46.3	400	531	82.6	165.0	133%	41%
		1-HR (CAAQS 2025)	Future No-Build	46.3	83	229	57.4	81.0	275%	99%
		1-HR (CAAQS 2025)	Future Build	46.3	83	531	82.6	165.0	640%	199%
		24-HR	Existing	38.9	200	66.3	47.3	53.7	33%	27%
		24-HR	Future No-Build	38.9	200	88.2	53.9	65.4	44%	33%
		24-HR	Future Build	38.9	200	196.4	89.3	127.3	98%	64%
		Annual	Existing	25.2	60	33.8	N/A	N/A	56%	N/A
		Annual	Future No-Build	25.2	60	40.6	N/A	N/A	68%	N/A

Receptor ID	Address	Averaging Period	Scenario	Background Concentration (µg/m³)	Criterion (µg/m³)	Maximum Cumulative Concentration (µg/m³)	Median Cumulative Concentration (µg/m³)	90 th Percentile Cumulative Concentration (µg/m³)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
		Annual	Future Build	25.2	60	76.5	N/A	N/A	127%	N/A
		Annual	Future No-Build	25.2	23	40.6	N/A	N/A	176%	N/A
		Annual	Future Build	25.2	23	76.5	N/A	N/A	332%	N/A

Table 4-16: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - PM_{2.5}

Receptor ID	Address	Averaging Period	Scenario	Background Concentration (µg/m³)	Criterion (µg/m³)	Maximum Cumulative Concentration (µg/m³)	Median Cumulative Concentration (µg/m³)	90 th Percentile Cumulative Concentration (µg/m³)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Existing	14.1	27.0	14.9	14.4	14.5	55%	54%
		24-HR	Future No-Build	14.1	27.0	15.5	14.5	14.8	57%	55%
		24-HR	Future Build	14.1	27.0	17.8	15.3	16.1	66%	60%
		Annual	Existing	7.9	8.8	8.2	N/A	N/A	93%	N/A
		Annual	Future	7.9	8.8	8.3	N/A	N/A	94%	N/A
		Annual	Future	7.9	8.8	9.1	N/A	N/A	103%	N/A

**Table 4-17: Summary of Model Predicted Results for the Most Impacted
Sensitive Receptor – PM₁₀**

Averaging Period	Scenario	Background Concentration (µg/m³)	Criterion (µg/m³)	Maximum Cumulative Concentration (µg/m³)	Median Cumulative Concentration (µg/m³)	90 th Percentile Cumulative Concentration (µg/m³)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
24-HR	Existing	26.1	50	27.6	26.7	26.9	55%	54%
24-HR	Future No-Build	26.1	50	28.7	26.9	27.4	57%	55%
24-HR	Future Build	26.1	50	33.0	28.3	29.8	66%	60%

Table 4-18: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Benzene

Receptor ID	Address	Averaging Period	Scenario	Background Concentration ($\mu\text{g}/\text{m}^3$)	Criterion ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Median Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	90 th Percentile Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Existing	0.95	2.3	0.97	0.96	0.96	42%	42%
		24-HR	Future No-Build	0.95	2.3	0.99	0.96	0.97	43%	42%
		24-HR	Future Build	0.95	2.3	1.06	0.99	1.01	46%	44%
		Annual	Existing	0.64	0.45	0.65	N/A	N/A	144%	N/A
		Annual	Future No-Build	0.64	0.45	0.65	N/A	N/A	145%	N/A
		Annual	Future Build	0.64	0.45	0.68	N/A	N/A	150%	N/A

Table 4-19: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - 1,3-Butadiene

Receptor ID	Address	Averaging Period	Scenario	Background Concentration (µg/m³)	Criterion (µg/m³)	Maximum Cumulative Concentration (µg/m³)	Median Cumulative Concentration (µg/m³)	90 th Percentile Cumulative Concentration (µg/m³)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R7	2150 Lake Shore Blvd W Etobicoke, ON M8V 1A3	24-HR	Existing	0.1	10	0.1	0.1	0.1	1.0%	1.0%
		24-HR	Future No-Build	0.1	10	0.1	0.1	0.1	1.0%	1.0%
		24-HR	Future Build	0.1	10	0.1	0.1	0.1	1.0%	1.0%
		Annual	Existing	0.06	2	0.06	N/A	N/A	3.0%	N/A
		Annual	Future No-Build	0.06	2	0.06	N/A	N/A	3.0%	N/A
		Annual	Future Build	0.06	2	0.06	N/A	N/A	3.0%	N/A

Table 4-20: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Formaldehyde

Receptor ID	Address	Averaging Period	Scenario	Background Concentration (µg/m³)	Criterion (µg/m³)	Maximum Cumulative Concentration (µg/m³)	Median Cumulative Concentration (µg/m³)	90 th Percentile Cumulative Concentration (µg/m³)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Existing	4.2	65.0	4.32	4.24	4.27	6.7%	6.6%
		24-HR	Future No-Build	4.2	65.0	4.32	4.24	4.27	6.7%	6.6%
		24-HR	Future Build	4.2	65.0	4.51	4.32	4.38	6.9%	6.7%

Table 4-21: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Acetaldehyde

Receptor ID	Address	Averaging Period	Scenario	Background Concentration ($\mu\text{g}/\text{m}^3$)	Criterion ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Median Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	90 th Percentile Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	30-MINS	Existing	0	500.0	0.14	0.01	0.03	0.03%	0.01%
		30-MINS	Future No-Build	0	500.0	0.30	0.02	0.06	0.06%	0.01%
		30-MINS	Future Build	0	500.0	0.73	0.05	0.18	0.1%	0.04%
		24-HR	Existing	1.55	500.0	1.59	1.56	1.57	0.3%	0.3%
		24-HR	Future No-Build	1.55	500.0	1.62	1.57	1.59	0.3%	0.3%
		24-HR	Future Build	1.55	500.0	1.75	1.61	1.66	0.4%	0.3%

Table 4-22: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Acrolein

Receptor ID	Address	Averaging Period	Scenario	Background Concentration ($\mu\text{g}/\text{m}^3$)	Criterion ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Median Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	90 th Percentile Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	1-HR	Existing	0	4.5	0.03	0.002	0.01	0.6%	0.1%
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	1-HR	Future No-Build	0	4.5	0.1	0.004	0.01	2.3%	0.1%
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	1-HR	Future Build	0	4.5	0.15	0.01	0.04	3.3%	0.8%
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Existing	0.24	0.4	0.25	0.24	0.24	62%	61%
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Future No-Build	0.24	0.4	0.26	0.24	0.25	65%	63%
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Future Build	0.24	0.4	0.29	0.26	0.27	73%	67%

Table 4-23: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - B(a)P

Receptor ID	Address	Averaging Period	Scenario	Background Concentration ($\mu\text{g}/\text{m}^3$)	Criterion ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Median Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	90 th Percentile Cumulative Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Cumulative % of Criterion (%)	90 th Percentile Cumulative % of Criterion (%)
R16	4 Grand Ave, Etobicoke, ON M8Y 2Y5	24-HR	Existing	1.2E-04	5.0E-05	1.38E-04	1.30E-04	1.31E-04	276%	263%
		24-HR	Future No-Build	1.2E-04	5.0E-05	1.38E-04	1.30E-04	1.32E-04	276%	263%
		24-HR	Future Build	1.2E-04	5.0E-05	1.48E-04	1.34E-04	1.38E-04	296%	275%
		Annual	Existing	7.7E-05	1.0E-05	7.70E-05	N/A	N/A	770%	N/A
		Annual	Future No-Build	7.7E-05	1.0E-05	7.70E-05	N/A	N/A	770%	N/A
		Annual	Future Build	7.7E-05	1.0E-05	7.70E-05	N/A	N/A	770%	N/A

4.7 Noise and Vibration Assessment

The objective of the Noise and Vibration Impact Assessment (NVIA) was to assess the potential increase in noise and vibration levels at nearby noise sensitive land uses as a result of the proposed Park Lawn GO Station and related accelerating and decelerating rail traffic. In addition, short-term construction noise and vibration impacts on nearby noise and vibration sensitive land uses was also assessed.

The Study Area for the NVIA Scope of Work consists of a 500-metre radius around the boundary of the Station Footprint. The Study Area encompasses the future Park Lawn GO Station, as well as the nearby Noise and Vibration Sensitive Areas (NSA & VSA).

Within the Study Area, a dense population of sensitive areas has been identified. Worst-case representative noise and vibration sensitive receptors were selected. This impact assessment was based on the Preliminary Design that is currently being advanced.

4.7.1 Methodology

Sensitive Receptors were selected to determine noise and vibration level compliance based on the geographical and land use context in the vicinity of the proposed Park Lawn GO Station as described below.

Based on the Ministry of the Environment and Energy (MOEE)/GO Transit Draft Protocol for Noise and Vibration Assessment (Ministry of Environment and Energy, 1994) (hereafter referred to as the MOEE/GO Transit Draft Protocol), Sensitive Receptor refers to a residential dwelling or place where people ordinarily sleep, learn, or pray, or a commercial/industrial operation that is exceptionally sensitive to noise and vibration such as a hospital. A copy of the Protocol is provided in Appendix A in Appendix G of this EPR for reference. Table 4-24 contains a brief description of points of reception and summarizes receptor location setbacks, elevations, and receptor heights used in the analysis.

Table 4-24: Points of Reception Description

Noise Receptor	Daytime	Nighttime
Period	07:00 to 23:00 hours	23:00 to 07:00 hours
Living Space	Any outdoor location on the property of a sensitive land use where sound originating from the Project is received and which is no less than 15 m from the nearest track's centre line	
Receptor Location	3 m from the unit in the front or backyard whichever is most exposed to the noise source (Low density residential). Plane of the apartment bedroom/living room (High density residential).	Plane of a bedroom window.
Height	1.5 m (Low density residential) Worst-case plane of the apartment bedroom/living room elevation (High density residential).	Worst-case plane of a bedroom window elevation.

Representative noise and vibration receptors were identified based on the existing NSAs in proximity of the proposed GO Station location, as well as future development. The selected noise and vibration receptors represent a variety of conditions, including near-proximity to the proposed GO Station and tracks, full and partial exposure to the station and the tracks, low-density and high-density sensitive uses, and locations that would exhibit different background noise conditions. The selected worst-case representative receptors were used when modelling noise and vibration levels for the scenarios. The identified receptors for this study are listed in Table 4-25. These include both existing and proposed dwellings. also includes noise and vibration monitoring locations, as listed in Table 4-26.

Table 4-25: Identified Points of Reception

Receptor	Address	Land Use
R-01	2121 Lake Shore Boulevard West, Etobicoke, ON M8V 4E9	Residential
R-02	245 Dalesford Road, Etobicoke, ON M8Y 4H7	Residential
R-03	2150 & 2194 Lake Shore Boulevard West, 23 Park Lawn Road	Future Residential
R-04	2150 & 2194 Lake Shore Boulevard West, 23 Park Lawn Road	Future Residential
R-05	2157 Lake Shore Boulevard West, Etobicoke, ON M8V 0A8	Residential
R-06	90 Park Lawn Road, Etobicoke, ON M8Y 0B6	Residential
R-07	36 Park Lawn Road #1, Etobicoke, ON M8V 0E5	Residential
R-08	185 Legion Road North, Etobicoke, ON M8Y 0A7	Residential
R-09	161 Legion Road North, Etobicoke, ON M8Y 0B3	Residential
R-10	251 Manitoba Street, Etobicoke, ON M8Y 1E3	Future Residential
R-11	157 Harbourview Crescent, Etobicoke, ON M8V 3V6	Residential
R-12	60 Annie Craig Drive, Etobicoke, ON M8V 0C5	Residential
R-13	32 Legion Road, Etobicoke, ON M8V 4C5	Residential
R-14	2230 Lake Shore Boulevard West, Etobicoke, ON M8V 0B2	Institutional

Locations for noise and vibration monitoring were chosen to determine the existing ambient noise and vibration levels in proximity to the proposed Park Lawn GO Station. These locations are listed in Table 4-26 below and are shown in Figure 4-7.

Table 4-26: Noise and Vibration Monitoring Locations

Monitoring Location	Address
NM-01	60 Annie Craig Drive, Etobicoke, ON M8V 0C5
NM-02	90 Park Lawn Road, Etobicoke, ON M8Y 0B6
NM-03	157 Harbourview Crescent, Etobicoke, ON M8V 3V6
VM-01	2150 & 2194 Lake Shore Boulevard West, 23 Park Lawn Road
VM-02	Manchester Park by 91 Harbourview Crescent, Etobicoke, ON M8V 4A9

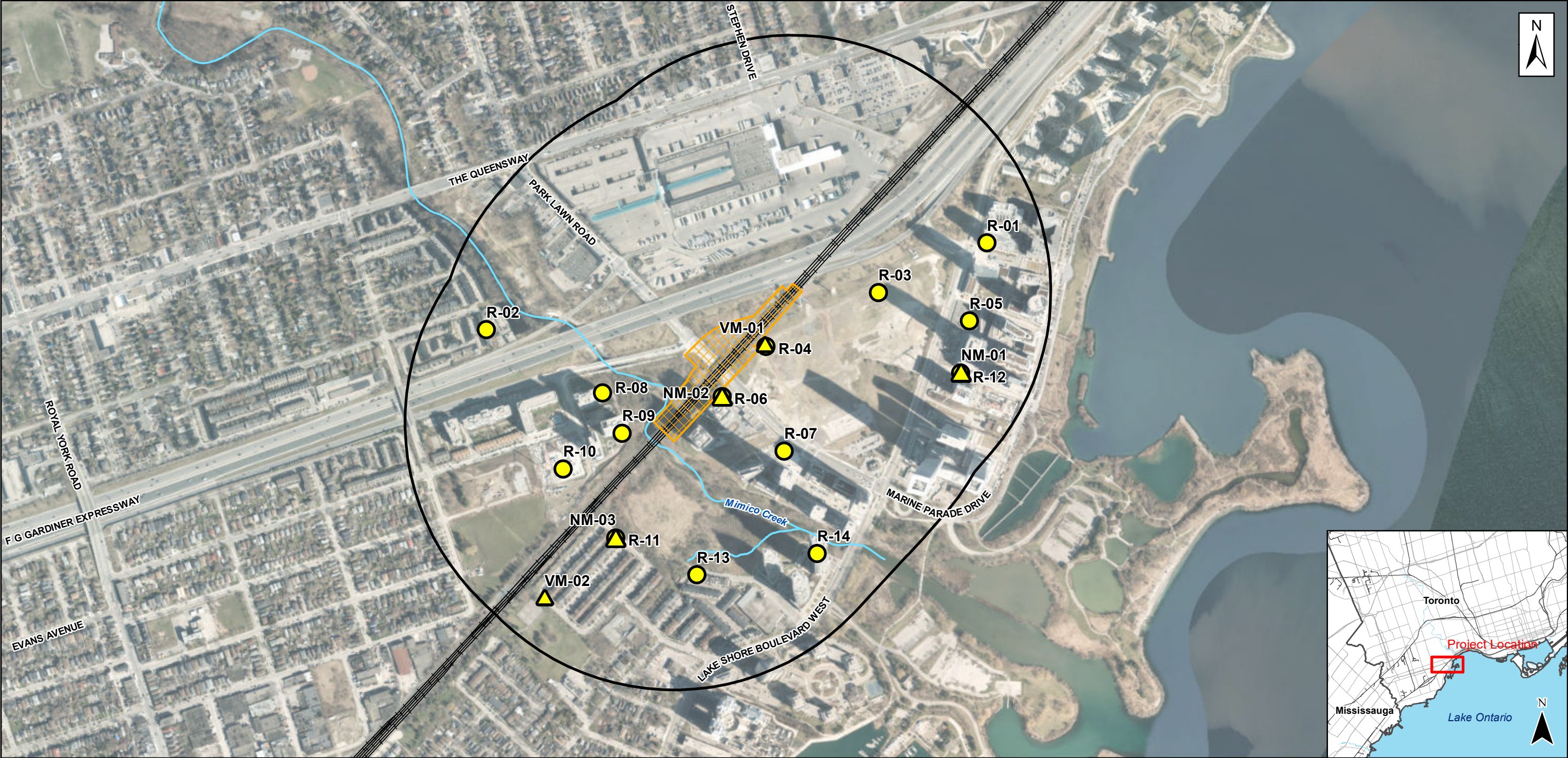
Convergence Instruments "Noise Sentry RT" integrating sound level meters were utilized for the noise monitoring. Calibration was completed before and after each measurement. Instrumentation specification can be found in Appendix B of Appendix G in this EPR.

The LDS Dactron Focus II Dynamic Signal Analyzer with high sensitivity seismic transducers model 3191A with sensitivities of 4,804 mV/g and 4,700 mV/g were utilized for the vibration measurements. Two transducers were ground mounted to bare earth per monitoring location equidistant to the track. This is to account for potential variations in ground composition, allow a comparison of measurements at the same distances, and provide redundancy in case of equipment failure.

4.7.2 Description of Existing Conditions

4.7.2.1 Baseline Noise Monitoring Results

Table 4-27 lists the measured minimum one-hour sound level ($L_{eq\ 1hr}$) identified at each monitoring location as per the measured baseline noise monitoring data, acquired on February 2020. Noise monitoring data can be found in Appendix C of Appendix G in this EPR. The modelled noise levels correspond to existing train traffic volumes extracted from existing GO train schedules, information provided by VIA/CN, and vehicular traffic volumes in the vicinity of the Park Lawn GO Station from data from the transportation team. Existing train and traffic volume data is included in Appendix D of Appendix G in this EPR. Table 4-27 presents the measured and modelled noise levels.



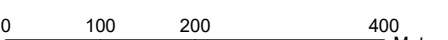
LEGEND		NOTES		Project: Park Lawn GO Station	
	Proposed Project Footprint (approximate)		Receptor	Figure Title: Environmental Project Report - Noise and Vibration Receptor and Monitoring Locations	
	Study Area - 500 Metres		Monitor		
	Railway	 0 100 200 400 Meters 1:8,000		Prepared By: 	
	Permanent Watercourse			Date: December 17, 2021	
Version: PL.EP.100-1		Review: 		Figure: 4-7	

Table 4-27: Modelled and Measured Existing Noise Levels

Noise Monitor ID	Corresponding Receptor ID	Baseline Measurements		Modelled Results		Difference	
		Day [dBA]	Night [dBA]	Day [dBA]	Night [dBA]	Day [dB]	Night [dB]
NM-01	R-12	60	56	54	50	-6	-6
NM-02	R-06	61	54	62	56	1	2
NM-03	R-11	55	47	54	49	-1	2

Considering the CadnaA model is accurate to approximately +/- 3 dB, the following differences between measured and modeled results identifies the level measurement to model correlation:

- 3 dB or less = **Good**
- 3-5 dB = **Fair**
- >5 dB = **Poor**

During the daytime, modelled sound levels at NM-02 and NM-03 show “good” correlation with a difference of 3 dB or less from measured sound levels. Similarly, during the nighttime, modelled sound levels at NM-02 and NM-03 show “good” correlation with a difference of 3 dB or less from measured sound levels.

CadnaA tended to under-predict sound levels at NM-01 during the daytime and during the nighttime (-6 dB). These differences could be attributed to:

- The lack of traffic data for the local roadways in the vicinity of the receiver (Silver Moon Drive and laneway north of 60 Annie Craig Drive). As this monitor is located more than 350 metres from the major noise sources in the area (e.g., Gardiner Expressway, Lakeshore West train traffic), sound levels due to local traffic become more significant; and
- Construction activities were observed north of 60 Annie Craig Drive and west of Silver Moon Drive. Noise due to construction activities is likely a contributor to monitored sound levels. Thus, quieter modelled sound levels are expected at this monitoring location as they do not include construction noise sources.

Overall, this comparison shows good correlation between measured and modelled baseline levels, which in turn supports the modeling approach and the use of the modeling software.

4.7.2.2 Baseline Vibration Monitoring Results

A total number of four train passes were measured at VM-01 and five train passes at VM-02. The measured existing vibration levels were compared to the vibration model by comparing the monitoring data to the modelled baseline conditions results. Table 4-28 summarizes this comparison. Vibration monitoring data is presented in Appendix C of Appendix G of this EPR.

Table 4-28: Comparison Between Modelled and Measured Vibration Levels

Monitor Location	Channel	Distance from Tracks (m)	Ave. Measured Vibration Level of all train passes (mm/sec, RMS) ⁺	Max. Measured Vibration Level of all train passes (mm/sec, RMS) ⁺	Predicted Vibration Level (mm/sec, RMS)*
VM-01	1	24.5	0.07	0.12	0.30
	2	24.5	0.09	0.13	
VM-02	1	44.5	0.02	0.03	0.15
	2	44.5	0.01	0.02	

* Based on a train speed of 95 km/h.

⁺ Based on the peak running RMS over a 1-sec time window across the passing period of the documented trains.

The measured vibration levels are significantly lower than those predicted at the same location. This is expected as the United States Federal Transit Administration (FTA) General Method is conservative - it is based on the upper range of measured data for various systems across North America. Further, predicted vibration levels were based on GO train speeds of 95 km/h whereas trains travelled noticeably slower during vibration monitoring.

4.8 Traffic and Transportation Infrastructure

4.8.1 Methodology

The Study Area for the Transportation Brief extends from The Queensway in the north / west, Lake Shore Boulevard West to the south / east, Park Lawn Road to the south / west and the Humber River to the north / east.

The Study Area for the Brief has been identified based upon a consideration of an area which will be influenced by travel to and from the proposed Park Lawn GO Station, while also noting the limited vehicle trip generation Projected to be associated with the Station and that other studies, including the Park Lawn Lake Shore TMP, will be providing a detailed assessment of a broader area.

4.8.1.1 Existing Conditions (2019)

The Existing Conditions assessment provides a detailed review of the existing transportation conditions in the area. A base year of 2019 was adopted, consistent with the date of the traffic counts and the 2150 Lake Shore Boulevard West traffic study and noting that 2020 and 2021 have been pandemic-affected., The assessment adopted the following methodology:

- Existing traffic, pedestrian, cycling, and transit data was collected and collated in order to establish base Existing Conditions. Data related to traffic operations such as vehicle

delay studies and intergreen studies were also collected and collated for the purpose of calibrating Existing Conditions, whilst existing traffic signal timings were obtained to determine existing signal phasing;

- Existing activity conditions within the Study Area were established for the AM and PM weekday peak hour periods on the basis of the abovementioned data;
- Traffic operations analysis of Existing Conditions were undertaken using the Synchro analysis software, in accordance with City of Toronto guidelines; and
- A qualitative assessment of the current cycling, pedestrian and transit operations in the area was undertaken which identifies the current strengths and weaknesses on the area networks.

4.8.1.2 *Near Term Horizon (2028)*

The Near Term Horizon assessment provides a detailed review of the Projected Near Term transportation conditions (aligning with expected station opening) and provides an assessment of the station impacts, adopting the following methodology:

- Information regarding planned area development applications and Projects that are anticipated to be completed within the Near Term Horizon (i.e., 2028 time-frame) were reviewed based upon available City database sources and other policy documents. This includes a review of the first phase of development on the 2150 Lake Shore;
- Activity related to the abovementioned planned area developments during the AM and PM peak hours were established from transportation studies submitted to the City of Toronto;
- Committed and planned area street, transit, active transportation network improvements and changes that will influence the Near Term Horizon transportation network operations and travel patterns were reviewed;
- Future traffic conditions were established for the AM and PM peak hours for the Near Term Horizon reflecting forecast traffic conditions on the existing and modified / planned street network considering existing traffic activity levels, new planned development activity, proposed changes to the area street and active transportation networks and transit service levels in the area;
- Travel demand forecasts related to the Park Lawn GO Station were established for the AM and PM peak hours at the Near Term Horizon to assess the implications and impacts of the Park Lawn GO Station; and
- Traffic operations analyses of Future conditions were undertaken using the Synchro analysis software, in accordance with City of Toronto guidelines.

4.8.1.3 *Longer Term Horizon (2041)*

The Longer Term Horizon conditions are the subject of considerable study by the City as part of the Park Lawn Lake Shore TMP and area specific development approvals processes. These processes are ongoing and will determine the form and scale of area development proposed for the area and related supporting infrastructure.

The assessment provided as part of the Transportation Brief, as provided in the Appendix H of this EPR, is focused on providing a high level overview and qualitative discussion of the GO Station within the broader development of the area. This is appropriate given that these processes are ongoing, that the station is not Projected to generate substantial levels of traffic, that new development beyond the Near Term will build upon the implementation of the GO Station and that these studies are extensive and will consider the role / function of the station in the broader Longer Term. As such, the following methodology was adopted:

- A detailed review of ongoing planning proposals, processes and initiatives was undertaken, including new development statistics, a break down of the planned uses proposed, new streets and connections, new local transit facilities and other active network linkages;
- On the basis of the above, a qualitative review was undertaken regarding the operation and impacts of the Park Lawn GO Station in the Longer Term; and
- Recommendations are made with respect to required facilities in the Longer Term to support the GO Station including key pedestrian, cycling and PUDD and how they may be provided in the context of development planning in the area.

4.8.2 *Description of Existing Conditions*

4.8.2.1 *Potential Infrastructure Improvements*

As part of the processes outlined above, a variety of new infrastructure is being contemplated to support the proposed area development. The principal elements part of the Park Lawn GO Station include:

Transit

- Construction of the Park Lawn GO Station.

Infrastructure elements of adjacent developments include:

Roads

- Construction of Public Street A, which is a new east-west road link proposed to extend from the Park Lawn Road / Gardiner Expressway Eastbound Off Ramp / Legion Road intersection to the Lake Shore Boulevard West / The Marginal Boulevard intersection, primarily through the 2150 Lake Shore;
- Construction of Public Road 'B' ("Loop Road") within the 2150 Lake Shore;

- Potential construction of a Legion Road extension from its current southern limit near the Gardiner Expressway eastbound off ramp to Park Lawn Road, to its current northern limit near Lake Shore Boulevard West;
- Potential construction of a new north-south street extending from the Lake Shore Boulevard West / Brookers Lane intersection to The Queensway. The Gardiner Expressway ramps which currently connect to Lake Shore Boulevard West are proposed to be realigned to connect to this new north-south street; and
- Potential adjustments to lane configurations resulting in two traffic lanes along Park Lawn Road.

Transit

- Construction of a mobility hub within the 2150 Lake Shore, which is proposed to accommodate TTC services;
- Diversion of streetcar routes 501 and 508 into the mobility hub via the abovementioned Public Street 'B' (Loop Road); and
- Separation of streetcar and traffic lanes along Lake Shore Boulevard West.

Active Transportation

- Urbanization of surrounding streets, improving the pedestrian realm;
- Construction of cycle tracks along Lake Shore Boulevard West, Park Lawn Road, The Queensway, the abovementioned new north-south street, and Legion Road extensions, and within the 2150 Lake Shore Boulevard West site;
- Additional pedestrian crossings at proposed signalized intersections along Lake Shore Boulevard West and Park Lawn Road; and
- Construction of high quality pedestrian facilities through the 2150 Lake Shore.

4.8.2.2 Existing Transportation Conditions

Traffic operations analysis results for Existing Conditions indicate that the area road network is currently operating within theoretical capacity, albeit a number of intersections/movements are in high demand.

The Study Area currently has reasonable access to TTC streetcar and bus services, but limited access to higher order rail service. Utilization of the TTC transit services vary, with the streetcar services in the highest demand.

Pedestrian infrastructure in the area includes sidewalks along both sides of key roads in the area, with signalized intersections providing crossing opportunities. However, mid-block connections are limited, whilst the 2150 Lake Shore site is currently a large impermeable block which prevents through connections.

Bicycle infrastructure in the area includes a number of off-road trails such as the Humber Bay Park East Trail, however on-road facilities are limited.

4.9 Slope Stability Analysis

4.9.1 Methodology

A total of three boreholes (i.e., BHs 21-S5, 21-07, and 21-08) were advanced west of Park Lawn Road in the locations shown on the borehole location plan as part of the Slope Stability Analysis (Appendix I of this EPR). The boreholes were advanced to depths ranging from 6.9 m to 17.1 m below ground surface (mbgs). Borehole details including coordinates, surface elevations and termination depths are provided in Appendix I. BH21-S5 and BH21-07 were terminated on power auger refusal on suspected bedrock. BH21-08 encountered bedrock at a depth of 6.5 m and was cored to the termination depth of the borehole at 17.1 mbgs.

Groundwater conditions were observed during the drilling and immediately following the drilling in the open boreholes. No monitoring wells were installed as part of the field work for this investigation. However, groundwater monitoring wells were installed in boreholes advanced to support the geotechnical investigation for the proposed station buildings at the locations indicated in the borehole location plan in Appendix A of Appendix I.

Borehole drilling was carried out by a track mounted drill rig owned and operated by Geo-Environmental Drilling. Geotechnical engineering staff from Hatch provided fulltime supervision of the field work and was tasked with directing drilling operations, confirming borehole locations, logging the soil samples retrieved from the boreholes, observing the changes in ground water levels, and directing the boreholes backfilling operations. Borehole drilling was advanced using 206 mm outside diameter hollow stem augers. Representative samples of the soil strata penetrated were obtained during drilling, utilizing a 50 mm diameter split barrel sampler. The sampler was advanced by dropping a 63.5 kg (140 lb) hammer from a free-fall height of 760 mm, in accordance with the Standard Penetration test method (ASTM D1586).

All soil samples retrieved from this geotechnical investigation were shipped to the Hatch Advanced Soil Laboratory in Niagara Falls, Ontario (a Canadian Council of Independent Laboratories (CCIL) certified laboratory) for detailed examination by the geotechnical engineer and completion of assigned laboratory testing on select samples.

4.9.2 Existing Conditions

4.9.2.1 Subsurface Conditions

In general, the subsurface conditions at all borehole locations consist of topsoil overlying silty sand to sandy silt fill underlain by native silt with clay to with various amounts of sand

and clay extending to the borehole termination depths in BH21-S5 and BH21-07 and to bedrock in BH21-08.

4.9.2.2 Groundwater Observations

Wet soil conditions (wet sampler) were observed in BH21-07 at a depth of 5.0 m bgs. No standing water was observed in the open boreholes at the termination of drilling all boreholes. No monitoring well was installed as part of the investigation program. Groundwater monitoring wells were installed in boreholes to the east of the TRCA regulated lands. The groundwater observations within these wells are presented in Table 4-29.

Table 4-29: Groundwater Monitoring Well Installation Summary

Borehole Number	Easting	Northing	Ground Surface Elevation (masl)	Groundwater Level (mbgs)	Groundwater Elevation (masl)
BH21-S3	622,255.1	4,831,459.0	86.9	1.7	85.2
BH21-S4	622,309.1	4,831,448.5	87.0	7.7	79.2
BH21-S6	622,266.7	4,831,361.7	85.4	9.1	76.2

It should be noted that groundwater levels are subject to seasonal variations and may be impacted by significant weather events. Seepage and perched water conditions, particularly during excavation operations, could also exist in the permeable soil layers.

4.9.2.3 Toe Erosion Consideration

An estimate of the rate of erosion of the shoreline along the south bank of Mimico Creek has been provided by Water's Edge (as summarized in Section 4.10 and Appendix J of this EPR) (Water's Edge, 2021). The estimate indicates that erosion at the toe of the slopes, along the inside bend of Mimico Creek to the east of the existing retaining wall, will be approximately 5.1 to 6.9 m per 100 years where no erosion protection measures are provided.

4.9.2.4 Existing Slope Condition

The slope surfaces are generally vegetated and covered by trees, bushes, and grass. The toe of the north embankment slopes are susceptible to erosion by Mimico Creek. The ongoing erosion has led to the construction of a concrete retaining wall to the east of the Park Lawn Bridge along the southern bank of Mimico Creek to protect the embankment and the eastern abutment of the existing Mimico Creek bridge. Additional slope reinforcement has been placed further to the east of the existing retaining wall in the form of a gabion basket wall and armor stone (riprap) to support the slope where historical instability has been observed (Beacon Environmental Ltd., 2017). The erosion mitigation measures have been documented in Appendix J of this EPR.

Evidence of existing slope instabilities, such as exposed roots, leaning vegetation, and slope repair works, were noted during the field investigation site visits (as noted in Appendix J of this EPR).

The existing retaining wall at the toe of the western extent of the railway embankment was repaired in 2017; however, it cannot be relied upon to support the slope over the design life of the proposed construction of the passenger platform. The retaining wall, as discussed below, is susceptible to scour and erosion due to the water flowing in Mimico Creek. As such, the retaining wall, in its current configuration, which is assumed to be a cast-in-place cantilevered wall with no tie-back anchors, is ignored when assessing the slope stability of the proposed station platforms.

The existing retaining wall is intended to stabilize the railway embankment and the Mimico Creek rail bridge west of the west end of the proposed GO Station platform.

4.9.3 Previous Assessments

Several geotechnical investigations have occurred on the east side of the Study Area at 2150 Lakeshore Boulevard (Geo-Canada Ltd, 2004; Conestoga-Rovers and Associate (CRA), 2013; Golder Associates Ltd, 2015; Golder Associates Ltd, 2019). Subsurface conditions within the site consist of 100 mm to 150 mm thick layer of asphalt that is found in the parking lot areas. Below the asphalt, a layer of non-cohesive granular fill is present, comprising of various layers of grey/brown sand and gravel with some silt that ranged from 0.3 m to 0.7 m. The non-cohesive layer was underlain by a layer of cohesive fill materials comprising of silty clay with varying amounts of sand and gravel to a depth of approximately 2.1 m. A layer of sandy silty clay till was found beneath the fill layers in boreholes located around the site which extended to depths of 6.5 mbgs. Bedrock was encountered at depths ranging from 4.9 to 6.1 mbgs consisting of primarily shale with siltstone and limestone, characteristic of the Georgian Bay Formation. However, it should be noted that the bedrock is not exposed along the creek bank.

Geotechnical investigations at 2150 Lake Shore (Geo-Canada Ltd, 2004; Conestoga-Rovers and Associate (CRA), 2013; Golder Associates Ltd, 2015; Golder Associates Ltd, 2019) found that water levels in the monitoring wells varied between 0.7 m (elev. 84.3 m) to 2.90 m (elev. 81.9 m) bgs in overburden screened wells.

Groundwater levels in monitoring wells screened within the bedrock varied between 7.9 m (elev. 76.0 m) to 11.5 m (elev. 73.5 m) bgs. Groundwater conditions are expected to develop within and above fine-grained materials, especially during and following a period of sustained precipitation.

The areas west of Park Lawn Road adjacent to Mimico Creek have had a number of geotechnical investigations conducted related to bank stability adjacent to the Lakeshore West Rail Corridor. A segment of Mimico Creek parallel to the rail corridor currently consists of a concrete and gabion basket retaining wall that was previously installed to support the rail line. Over time the gabion wall structure and the riprap failed and was deposited into the creek bed and a large cavity was formed by a number of gabions being washed out. Construction work completed by SEMA Railway Structures (SEMA) in 2017 included the

installation of an access road, backfilling of the concrete wall, repair of the failed railway embankment and the installation of new rip rap.

4.10 Geomorphology

4.10.1 Methodology

4.10.1.1 Rapid Geomorphic Assessment

Channel stability was assessed using a Rapid Geomorphic Assessment (RGA) (MOE, 2003). The RGA assessment focuses entirely on the geomorphic component of a river system. The RGA method consists of four factors that summarize various components of channel adjustment, specifically: aggradation, degradation, channel widening and planform adjustment. Each factor is assessed separately, and the total score indicates the overall stability of the system. This methodology has been applied to numerous streams and rivers and details the ranking criteria. Generally, the lower the score, the more stable the channel is. There are three Stability Indices, including 'In Regime', 'Transitional/Stressed', and 'In Adjustment'. Further details are included in Appendix J.

4.10.1.2 Rapid Stream Assessment Technique

The Rapid Stream Assessment Technique (RSAT) was developed by John Galli and other staff of the Metropolitan Washington (DC) Council of Governments (Galli et al, 1996). The RSAT systematically focuses on conditions reflecting aquatic-system response to watershed urbanization. It groups responses into six categories, presumed to adequately evaluate the conditions of the river system at the time of measurement on a reach-by-reach basis. Specifically, the RSAT categorizes the channel based on channel stability; channel scouring and sediment deposition; physical in-stream habitat; water quality; riparian habitat conditions; and biological conditions.

River channel stability and cross-section characterization is a critical component of RSAT. The entire channel was inspected for signs of instability (such as bank sloughing, recently exposed non woody tree roots, general absence of vegetation within the bottom third of the bank, recent tree falls, etc.) and channel degradation or downcutting (such as high banks in small headwater streams and erosion around man-made structures).

A rapid assessment of soil conditions along the riverbanks was conducted to identify soil texture and potential erodibility of the watercourse bank. Qualitative water quality measurements were also made (temperature, turbidity, colour, and odour) along with an indication of substrate fouling (i.e., the unwanted accumulation of sediment).

The RSAT also typically involves a quantitative sampling and evaluation of benthic organisms. As no benthic sampling was undertaken, the score was based on site conditions and general observations of water quality.

The interpretation of the RSAT Score, is broken down into Excellent, Good, Fair, Poor or Degraded.

4.10.1.3 *Erosion Rate Calculation*

For this assessment, provided in Appendix J of this EPR, the 1992, 2009 and 2018 air photo delineations were used to calculate the 100-year erosion rate. Calculating erosion rates is dependent on high quality and high resolution aerial photography, precise orthorectification and minimal canopy coverage. While it can be difficult to delineate the watercourse in places due to canopy coverage, the watercourse could generally be delineated.

Measurement points were selected based on where active erosion was observed on the meander bend that is of greatest concern to the development of the GO Station. In addition, this bank is where active erosion was noted, and it is where infrastructure has been constructed to protect the bank.

4.10.2 *Description of Existing Conditions*

The reach of Mimico Creek is situated downstream of the Gardiner Expressway and generally flows from north to south, with an average bankfull width and depth of 12.44 m and 0.45 m respectively. The upstream end of the study reach has been fully hardened using concrete. While this reduces the erosion risk directly beneath the Gardiner Expressway off ramp bridge, it makes for a more hydraulically efficient system. Therefore, when the watercourse reconnects with the downstream alluvial watercourse, the increased water velocity has formed a large scour hole immediately downstream from the outlet from the concrete channel. Downstream from this scour pool the channel exhibits regular riffle-pool sequences. These cascade down to where the east bank has been armoured at the meander bend. The bend has been protected using large pieces of armourstone that have since slumped and begun falling into the creek. Downstream from the armourstone bank protection, further bank and slope protection consist of a short section of gabion basket wall and longer section of concrete retaining wall. While these walls appear to be in good condition with little to no outflanking from fluvial processes, a deep scour pool has formed directly adjacent to the concrete wall. While this does not appear to have undercut the wall, it is imperative that it is monitored as the existing slope stability is dependent on that wall.

Downstream from the wall, the watercourse widens and shallows, transitioning into the conditions found downstream from the railway bridge.

The west bank is generally very shallow and leads to a forested area. For much of the reach, a rocky beach can be found on the bank of the river, resulting in small changes in water levels having significant changes to the bankfull width. On the east bank, aside from where it has been armoured, there is evidence of erosion with exposed roots, leaning vegetation and freshly exposed soil. The riparian zone is well forested, with several paths through the trees and recent plantings.

Air photos from 1992, 2009 and 2018 were analyzed for changes in stream planform using GIS mapping where the photos were used to delineate the bankfull limits of the channel

which the meander axis and beltwidths are based on. The historic air photos were used to provide a reasonable representation for how the river has adjusted in the past 28 years.

Mimico Creek has remained relatively uniform across the study period. However, active erosion was observed and is evidenced by the bank-hardening infrastructure that is in place. In addition to erosion, other factors will contribute to the perceived migration in the air photo delineations. These factors include the development of canopy vegetation, and differences in water levels when the air photo was taken.

The RGA and RSAT for Mimico Creek was completed north of the railway bridge. Results of the RGA indicate that the reach of Mimico Creek near the crossing is “Transitional/Stressed” due to the erosion on the east bank and in the scour pool alongside the armourstone wall. Results of the RSAT indicated that Mimico Creek was assessed as “Good” due to the lack of significant sediment deposits, good riparian buffer and channel diversity, despite the recent erosion surrounding the eastern banks.

5. Impact Assessment of the Preferred Design

5.1 Natural Environment

5.1.1 *Potential Effects*

5.1.1.1 *Construction*

Soils and Landforms

Construction activities have the potential to cause increased erosion and sediment within the Study Area. Increased erosion can result in many structural changes within the soil potentially leading to soil compaction, drainage alterations, and bank degradation. Erosion can also lead to increased transportation of harmful substances over the land (i.e., fertilizers, pesticides).

Results from the fluvial geomorphology assessment report by Water's Edge, in Appendix J of this EPR, recommend continuing to maintain the existing gabion basket, concrete retaining walls, and armourstone revetment to prevent further erosion and meander movement. A Slope Stability Analysis was completed in order to ensure any structures and/or platforms do not result in a load that could cause mass movement (Appendix I).

Channel morphology also has the potential to be affected by construction activities if provisions to ensure bank stability are not addressed. Changes in channel morphology would be expected if bank degradation or drainage alterations occur, resulting in potential changes to the meander belt and floodplain limits within the area.

Groundwater

Construction activities have the potential to cause adverse effects to groundwater quality due to contamination from spills. The release of controlled or hazardous substances during construction either into the groundwater directly, or through soil leaching has the ability to lead to groundwater degradation.

Dewatering activities have the potential to result in changes to groundwater levels both on-site and off-site, as well as the potential of affecting the discharge rates to watercourses and waterbodies that are located downstream. The diversion or interception of this groundwater can lead to reduced flows in Lake Ontario tributaries, such as Mimico Creek if left unmitigated.

Fish Habitat

Impacts to hydrologic features from construction activities include the degradation of water quality within Mimico Creek. Increased erosion has the potential to lead to increased sedimentation in the creek, in turn creating a rise in Total Suspended Solids (TSS) in the water column that can result in the alteration of fish movement, behavior and feeding, reproduction and spawning ability. Sediment deposition can infill spawning habitats and reduce fish productivity in the watercourse. Erosion can also lead to the transport of many

contaminants such as heavy metals, pesticides and sewage to the watercourse which may lead to an increased uptake in contaminants from local fish species. Additionally, many heavy metals are known to bioaccumulate and biomagnify within the food web, increasing the changes of behavioral and physiological impairments in wildlife.

Construction activities have the potential to result in flow alterations within Mimico Creek from any cofferdams placed during in-water works and channel morphology changes due to erosion and bank degradation. Increased velocities within the creek have the potential to limit the passage of migratory species if they exceed the swimming speeds of select species.

Construction activities also have the potential to lead to a reduction of aquatic and riparian habitat due to clearing and grubbing, heavy machinery, and foot traffic.

Vegetation

Construction activities are expected to disturb approximately 2.53 ha of terrestrial environment within the Study Area. Of the 2.53 ha, approximately 1.5 ha is comprised high density residential and transportation corridor); 1.03 ha is comprised of terrestrial vegetation communities. Table 5-1 outlines the number of hectares expected to be disturbed in each of the nine terrestrial ecosites found on the site.

Table 5-1: Summary of Disturbed Land within the Ten Terrestrial Ecosites as a Result of the Proposed Project

Ecosite Name	Ecosite Code	Total Area	Total Area disturbed by construction activities
Fresh-Moist Manitoba Maple Lowland Deciduous Forest	FOD7-a	1.42	0.27
Fresh-Moist Willow Lowland Deciduous Forest	FOD7-3	1.16	Not Disturbed
Exotic Cultural Thicket	CUT1-c	1.63	0.42
Fresh-Moist Oak-Lowland Maple Deciduous Forest	FOD9-2	0.07	Not Disturbed
Exotic Forb Meadow	CUM1-c	0.41	Not Disturbed
Exotic Cool Season Grass Old Field Meadow	CUM1-b	1.84	0.17
Anthropogenic Sand / Gravel Barren	SB02	2.24	Not Disturbed
Native Deciduous Successional Woodland	CUW1-A3	1.12	0.16
High Density Residential	CVR-2	2.21	0.20

Ecosite Name	Ecosite Code	Total Area	Total Area disturbed by construction activities
Transportation Corridor	CV1-1	5.36	1.30

The Study Area hosts a number of invasive species due to the long history of disturbance at the site. Invasive species have the potential to proliferate due to land disturbance and clearing activities within the Study Area during construction activities. Invasive species often out compete other native species due to their resistance to native disease, reduced predation from native species and their ability to utilize resources in a way that native plants may not.

Wildlife

Construction activities and pre-construction activities include the clearing and grubbing of land surrounding the proposed GO Station. As many migratory birds have been confirmed to reside or utilize the Study Area, tree clearing has the potential to result in the destruction of nesting habitat. Clearing and grubbing will result in a loss of up to 1.03 ha of terrestrial vegetation communities and will impact a total of 2.53 ha including the transportation corridors and condominium properties. In addition to the direct loss of nesting habitat, vegetation removal also presents the potential for habitat fragmentation and the alteration of current forest edge boundaries, which may alter avian movement and behavior.

Construction activities will result in a loss of habitat for some species that are utilizing the area. This includes many of the mammal species known to utilize the area, including coyotes, squirrels, beavers, and rabbits. Due to the tolerant nature of these species to urbanized settings and the abundance of viable habitat surrounding Mimico Creek that will remain following construction, impacts to mammals within the area are not considered to be significant. Amphibians and reptiles have not been noted within the Study Area during field investigations, however some species may utilize the area surrounding Mimico Creek for various life processes. Areas surrounding the creek have the potential to contain hibernaculum, overwintering habitat, and foraging for herpetofauna within the area. Impacts to herpetofauna are expected to be insignificant due to the abundance of habitat within Mimico Creek and the higher quality habitat located to the south of the Study Area at the mouth of Mimico Creek and Lake Ontario.

Construction activities have the potential to create dust, which may settle on adjacent vegetation, disturbing wildlife, and their habitat.

No impacts to butterflies are anticipated from the proposed works due to the lack of habitat found within the site. Individual Monarchs were observed foraging on sparse stems of Milkweed within open areas and meadow communities within the Study Area.

Significant Wildlife Habitat

Construction activities have the potential to result in a loss of Reptile Habitat (Hibernaculum). No reptiles have been noted within the Study Area to date, however some

species may utilize the area surrounding Mimico Creek for various life processes. Areas surrounding the creek have the potential to contain hibernaculum, overwintering habitat and foraging for reptiles within the area. Impacts to reptiles are expected to be insignificant due to the abundance of habitat within other areas of Mimico Creek, including the higher quality habitat located to the south of the Study Area at the mouth of Mimico Creek near Lake Ontario.

Construction activities also have the potential to result in the loss of Special Concern species habitat. Nine species listed as Special Concern were identified as having potential to inhabit the Study Area (Table 4-3). Over the course of field investigations conducted in 2020, no species listed as Special Concern were observed within the area apart from Monarch. Though very few Special Concern species were observed, there is still a potential for Special Concern species to utilize the Study Area, however, impacts to these species are expected to be insignificant due to the lack of many defining criteria for the identification of species/habitats of conservation concern as outlined in Appendix Q of the Significant Wildlife Habitat Technical Guide (Ministry of Natural Resources, 2000). Some of the defining criteria include assigning a higher level of significance to sites that are undisturbed, diverse, contain the fewest non-native species, and have substantial habitat connections, all of which are lacking within the Study Area. Due to the lack of observations of Special Concern species, limited number of defining criteria present with the Study Area, and higher quality habitat closer to Lake Ontario, impacts to species of conservation concern are not expected to be significant.

Species at Risk

No impacts to Bank Swallows are expected from the proposed works due to the proximity of the candidate nesting habitat from the Project Footprint, however appropriate mitigation shall be developed to avoid this sensitive area during construction. The remainder of Mimico Creek remains as foraging habitat for the species, however no impacts to the species are expected due to the wide availability of foraging habitat elsewhere along the creek during construction. Furthermore, construction is unlikely to reduce the Mimico Creek valley's function as foraging habitat.

No impacts to Barn Swallows are expected from the proposed works due to the lack of nesting occurring within the Study Area. As previously noted, the Lake Shore Boulevard West bridge over Mimico Creek 300 m south of the Study Area appears to be preferable habitat for the species. The remainder of Mimico Creek remains as foraging habitat for the species, however no impacts to the species are expected due to the wide availability of foraging habitat elsewhere along the creek during construction. If any displacement within the Study Area due to construction activities were to occur, the Lake Shore Boulevard West bridge provides alternative habitat.

No impacts to Chimney Swifts are expected during construction activities within the Study Area due to the lack of confirmed species observations. Additionally, any potential habitat (bridges/buildings) is not expected to be disturbed during construction.

Should detailed design determine that in-water work is required, approval under the ESA will be required for impacts to American Eel habitat. If in-water work or work directly adjacent to Mimico Creek is anticipated, a number of potential impacts such as further erosion, sedimentation, loss of habitat and flow alterations may result.

No impacts to Blanding's Turtles are expected during construction activities within the Study Area due to the lack of confirmed species observations and suitable habitat. Although Mimico Creek has the potential to provide habitat for critical life processes, this habitat has not been observed within the Study Area during field investigations.

No New Jersey Tea or Prairie Root were observed within the Study Area during vegetation inventory in 2020, therefore no impacts to Mottled Duskywing are expected during construction activities within the Study Area due to the lack of confirmed species observations and habitat.

Construction activities have the potential to cause a loss of habitat for SAR bats within the Study Area. Vegetation clearing and site preparation within the Project Footprint would result in the removal of five potential snags. A large majority of the snags, including the highest quality snags, are located outside of the Project footprint, and are not expected to be impacted, therefore it is anticipated that bats would use these if habitat within the Project footprint was removed. If impacts to SAR bats and their habitat cannot be avoided, future consultation with the MECP and coordination with ongoing adjacent Metrolinx Projects will determine if compensation is required (Ministry of Natural Resources, 2007).

Significant Natural Features

Construction activities have the potential to result in a loss or alteration of ravine habitat and a decrease in Biodiversity.

Ravine system are an integral part of Toronto's natural heritage landscape as they contain a high level of biodiversity that has otherwise been lost within the urban setting. Construction activities are expected to disturb a small portion of the ravine on the west side of Park Lawn Road, between Mimico Creek and the Lakeshore West rail corridor. Construction activities have the potential to not only cause habitat loss within the platform locations but could also lead to an alteration in the topography of the area, and in turn an alteration of the ravine system. Alterations in the ravine system can lead to the displacement of wildlife that would otherwise utilize the area. If wildlife cannot find suitable habitat to relocate to, decreases in biodiversity in the area could result. Due to the small area of impact and the abundance of higher quality ravine habitat elsewhere along Mimico Creek, construction impacts are not expected to have significant effects on the ravine system as a whole.

Additional opportunities to enhance the access route to Mimico Creek for maintenance of the existing toe wall structure toe wall should be further assessed during detailed design, as well as potential restoration measures.

5.1.1.1.1 Operation

Soils

All areas that had the potential to result in erosion and sedimentation during construction will be graded and stabilized to an appropriate level by the time of operation, resulting in no impacts to soils. Fill materials under permanent structures and other disturbed areas will likely have a significantly different composition than the soils present prior to construction, resulting in the potential for contamination within the soil if not stabilized following construction. Similar impacts to landforms, topography and geology would be expected from both construction and operation phases if bank stability concerns are unaddressed

Groundwater

No impacts to groundwater quantity or quality are expected during the operational stage of the Project.

Fish Habitat

A detailed Slope Stability Analysis was completed in order to assess the bank stability of Mimico Creek north of the rail corridor (Appendix I). If appropriate planning and mitigation measures are developed, no impacts to hydrological features, watercourses or aquatic environment are anticipated during operation.

Vegetation

As mentioned above, 1.03 ha of terrestrial vegetation communities are expected to be disturbed during construction. Post construction, most of the disturbed land will be eliminated in areas where permanent structures, roads or other infrastructure are located. In some areas, the disturbed ground may be revegetated to provide new cultural vegetation communities within the Study Area. Though the area of disturbance is quite large and many ecosites will be eliminated by the GO Station, it should again be noted that there were no SAR or significant vegetation communities identified within the Study Area. As the vegetation communities are not considered sensitive, the loss of ecosites does not likely represent a significant loss of ecosite diversity within the city, or the province, however appropriate mitigation measures have been developed in order to reduce negative impacts vegetation within the Study Area

Wildlife, Significant Wildlife Habitat and Species at Risk

Species within the area are highly adapted to trains as the area contains four active tracks with trains speeds up to 80 km/h. The majority of the Study Area does not contain fencing or barriers between the rail corridor and the naturalized areas; therefore, it is assumed that

species within the area are well adapted to trains, therefore the impacts from potential collisions are considered insignificant.

There is a risk of bird strikes from birds hitting the Station building, given that the Park Lawn GO Station will be located in a valley corridor, within a natural heritage system and adjacent to Lake Ontario. In addition, there is a potential impact from light spillage.

No impacts from operations on potential reptile hibernaculum are expected.

Significant Natural Features

The operational stage of the Project is expected to cause a loss of ravine habitat within the Study Area due to the extension of the north and south platforms of the proposed station. Though the platforms themselves are not expected to be more than a few metres in width, infrastructure required in order to support the platforms within the ravine are expected to contribute to an overall loss of habitat. A loss of habitat would lead to the permanent displacement of wildlife utilizing that area of the ravine. As the loss of ravine habitat would be minimal compared to the overall size of the ravine system, the loss is not expected to cause impairment to the overall ravine system surrounding Mimico Creek.

5.1.2 Mitigation Measures

5.1.2.1 Soils and Landforms

- Retain existing vegetation within the Study Area to the extent practicable to reduce soil erosion. Vegetation removal will be kept to a minimum, limited to within the construction disturbance area. Areas for vegetation removal will be refined during detailed design, if required (e.g., change in construction disturbance area, final staging areas);
- A Soil Management Plan (SMP) as defined by Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19) will be prepared by a Qualified Professional as defined in Ontario Regulation 153/04: Records of Site Condition (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for managing soil materials on-site (includes excavation, location of stockpiles, reuse, and off-site disposal);
- Erosion and Sediment Control drawings, including TRCA Standard Notes (<http://www.trca.on.ca/dotAsset/93458.pdf>), and a report (ESC Plan) which follow the Erosion and Sediment Control Guideline for Urban Construction, December 2019, will be developed as part of the O. Reg. 166/06 application to detail the mitigation measures required during construction. The ESC measures will be implemented prior to Project construction and maintained during the construction phase in accordance with an ESC Plan. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed;

- Disturbed areas within the construction site will be stabilized and re-vegetated as soon as conditions allow;
- The ESC measures will be left in place until disturbed areas within the construction site have been stabilized and will then be removed;
- Wet weather restrictions shall be applied during site preparation and excavation;
- Deleterious substances (including stockpiled material) will be used and stored in a manner that prevents any of the substances from entering a natural feature (at least 30 m away from Mimico Creek);
- 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. 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 Spills Action Centre at 1-800-268-6060;
- Refueling is to occur at least 30 m from a watercourse; if this distance cannot be maintained, a spill tray is to be placed under the fueling point;
- During operation, any major maintenance work that would result in the replacement or upgrade of major infrastructure components requiring earth-moving will be conducted in accordance with the applicable mitigation measures listed under the construction phase;
- An Emergency Response and Communications Plan will be developed and followed throughout the operations and maintenance phase (includes spill response and contingency plans); and
- Mitigations measures and recommendations related to potential impacts of the proposed station platforms on the bank stability along Mimico Creek are included in the Slope Stability Analysis Report (Appendix I).

5.1.2.2 Groundwater

- Mitigation measures for ESC included in Section 5.1.2.1 will be sufficient to mitigate any potential contamination of groundwater. A detailed ESC Plan, as noted in Section 5.1.2.1, will be prepared during detailed design in order to outline the specific mitigation

required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed;

- A site-specific Dewatering Management Plan shall be followed in order to determine groundwater levels and aquifer recharge rates to mitigate any impacts to groundwater quantity;
- Stormwater management for the Station will be designed to meet the standards set forth in the TGS (Version 3) (City of Toronto, 2019) and the TRCA's stormwater management criteria (water quantity, water quality, erosion control and water balance for groundwater and natural features). The SWM report will include a water balance for the site. The SWM report will be included as part of the submission for the O. Reg. 166/06 application package to be prepared during detailed design;
- All requirements under the *Ontario Water Resources Act* (OWRA), R.S.O. 1990, c. O.40 with respect to water taking, management and discharge to the quality of water discharging into natural receivers will be met, including the following mitigation measures and best practices;
 - Approval of water takings in accordance with the MECP Permit to Take Water process or within the Environmental Activity and Sector Registry (EASR) framework; and
 - Any discharge from dewatering will be discharged subject to a City of Toronto Discharge Agreement and follow the Toronto Sewer Use By-law.

5.1.2.3 *Aquatic Habitat*

- Mitigation measures for ESC, bank stability and spills will reduce impacts to hydrological features and aquatic habitat on site. A detailed ESC Plan, as noted in Section 5.1.2.1, will be created during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed;
- In-water work must occur from July 1 to March 31 of any given year due to the warmwater classification of the watercourse in order to avoid sensitive life stages such as migration, spawning and rearing;
- If in-water work will occur during construction, the area will be isolated using cofferdams and dewatered in accordance with a Dewatering Plan prepared during detailed design;
- Fish removals will be conducted by qualified biologists in isolated areas prior to dewatering. All fish will be enumerated and reported in accordance with the MNRF. A

Licence to Collect Fish for Scientific Purposes will be obtained from the MNRF if fish relocations are required;

- Fish will be released unharmed into suitable habitat downstream of the work area;
- If an invasive species is encountered during the fish relocation it will be euthanized and removed from the watercourse in accordance with MNRF conditions;
- The work area shall be delineated and workers shall be made aware of the limits to construction activities;
- Heavy machinery or equipment requiring fuel shall be stored at a minimum of 30 m from the watercourse;
- Site preparation shall be phased for the winter months to avoid impacts to aquatic wildlife in the summer months;
- Riparian vegetation removal shall be kept to the minimum required for construction;
- Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem. This will be shared with Curve Lake First Nation for input and feedback;
- Metrolinx is committed to having meaningful conversations with Indigenous Nations to understand and recognize that species deemed to be invasive may hold cultural value. Invasive species management plans, if required, will be shared with Curve Lake First Nation for review and input during detailed design; and
- Metrolinx is committed to having meaningful engagement with Curve Lake First Nation in the event that in-water works and restoration are required. If in-water works are required, then additional studies would be undertaken and will be circulated for input to Curve Lake First Nation.

5.1.2.4 *Vegetation*

- A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures;
- Ecological compensation shall follow the basal area approach;
- Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto and TRCA permitting processes;
- Removal of trees and shrubs shall be completed mechanically;
- Herbicides may be applied in combination with other methods or selectively, using advanced application technologies and appropriate timing in accordance with the Metrolinx Vegetation Guideline (2020) for areas where mechanical removal is not possible or to prevent regrowth of invasive species. Choosing which herbicide to apply

in response to IVM needs is dependent on: time of year; stage of plant growth; site-specific considerations and sensitivities; soil moisture before, during, and after application; precipitation (rain or snow); and temperatures of soil and air before treatment. It may also consider the use of the product with the least adverse non-target impacts available that will achieve the necessary control. Only chemicals approved (at the time of application) by the appropriate federal and provincial government shall be used. Personnel involved in the handling and application of herbicides must do so in accordance with Metrolinx protocols and policies. Herbicides must be applied in accordance with the federal Pest Control Products Act, the *Ontario Pesticides Act*, and Ontario Regulation 63/09 and in accordance with all label directions. All personnel applying chemicals shall have valid applicator's licenses.

- Any tree clearing or limb trimming will be limited to meet necessary safety clearances;
- Tree removal and pruning will be conducted by a Qualified Professional arborist to limit tree damage;
- The incorporation of a green roof on the station buildings will be considered as a part of the design to help address the impact of local heat islands in the City and to mitigate the impacts associated with vegetation loss;
- An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan will include site specific techniques and procedures outlining the removal and transportation of invasive species;
- Disturbed areas within the construction site will be revegetated as soon as conditions allow;
- Any equipment will be thoroughly cleaned prior to entering the site and when being transported between sites. Equipment cleaning must occur at least 30 m from Mimico Creek;
- If an invasive species is removed, the species will be disposed of appropriately in an off-site location;
- A Soil Management Plan (SMP) as defined by Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19) will be prepared by a Qualified Professional as defined in Ontario Regulation 153/04: Records of Site Condition (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for managing soil materials on-site (includes excavation, location of stockpiles, reuse, and off-site disposal);
- In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank;

- Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem, and this will be shared with Curve Lake First Nation for input and feedback;
- Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design;
- Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation;
- Where revegetation is required, a native seed mix, which does not contain invasive species, will be used;
- Ash trees, leaves, logs, or wood chips will not be removed out of the Regulated Area, as identified on the Canadian Food Inspection Agency (CFIA) website (Canadian Food Inspection Agency, 2015). This is necessary to prevent the spread of the EAB to uninfested areas in Ontario. The Contractor must dispose of all wood at a registered Waste Facility; and
- If extensive invasion of non-native species is identified as a result of the Project, contingency measures may include an applicable herbicide application. A herbicide application plan will be developed as required and submitted to the TRCA for review.

5.1.2.5 *Wildlife and Significant Wildlife Habitat*

- Additional studies to support detailed design will be completed in Fall 2021 to identify if hibernaculum are located within the Project footprint. The results of the work will be included with the O. Reg. 166/06 application package for TRCA review;
- A Wildlife Management Plan shall be developed during detailed design and followed accordingly;
- Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species' buffers and timing windows. During the detailed design phase of the Project Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation;
- The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits. Sweeps will be conducted by a qualified Ecologist;
- Exclusionary fencing shall be installed to eliminate access to the Project footprint in advance of construction to prevent reptiles, amphibians, and some mammals to the site;

- Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site;
- Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds;
- If vegetation must be removed during the breeding bird timing window:
 - Nesting activity searches will be conducted in areas defined as simple habitat (i.e., the CUM1-1 community) by a qualified Ecologist/Avian Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of confirmed breeding evidence, as defined by OBBA criteria (Cadman M. D., Sutherland, Beck, Lepage, & Couturier, 2007).
 - If an active nest or confirmed nesting activity of a migratory bird is observed in simple habitat, regardless of the timing window recommended, a species specific buffer area following ECCC guidelines will be applied to the nest or confirmed nesting activity wherein no vegetation removal will be permitted until the young have fledged from the nest. The radius of the buffer will depend on species, level of disturbance and landscape context (Government of Canada, 1994), which will be confirmed by a qualified Ecologist/Avian Biologist, but will protect a minimum of 10 m around the nest or nesting; and
 - The results of all nesting activity searches will be documented at the end of each survey day, including information on the searcher, date, time conducted, weather conditions, habitat type, vegetation community type, observations of breeding activity, observations of confirmed nests including co-ordinates, and, if required, the buffer applied to identified breeding/nesting sites.
- If vegetation removal must occur in complex habitats within the above-listed timing windows and absolutely cannot be avoided, the same best management practices (BMPs) such as nest and nesting activity searches described above will be undertaken;
- Suitable human-made structures within the Study Area shall be inspected by a qualified Ecologist/Avian Biologist for evidence of active bird nests during the breeding bird timing window prior to the onset of construction activities in order to determine appropriate nesting preventative measures (e.g., netting);
- Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions;
- Light spillage will be taken into consideration during detailed design and shall include the use of Dark Sky compliant fixtures as outlined in TGS Version 3; and
- Bird-friendly building design principles in accordance with the highest applicable TGS shall be taken into consideration (i.e., visual markers applied to the first exterior surface shall be considered).

5.1.2.6 *Species at Risk*

- During the detailed design phase, the Park Lawn GO Station construction (including pre-construction land clearing) will be designed to avoid the loss of any Confirmed Habitat of Endangered or Threatened Species to the extent possible;
- Where loss cannot be avoided, the MECP will be contacted and all requirements under the ESA, will be met, including any species-specific registration, compensation and/or permitting requirements;
- Any vegetation clearing shall take place outside of the breeding bird timing window; generally, from April 1 to August 31 of any given year (Different windows may apply to habitats of SAR, subject to permitting requirements);
- Timing windows for any necessary removal of any confirmed Endangered or Threatened Species habitat will be developed in consultation with the MECP in association with any self registration or permitting requirements;
- General wildlife mitigation during construction and operations will be implemented to minimize effects to all species. This includes avoiding sensitive breeding windows for all species regardless of their status under the *Species of Risk Act*;
- Should a SAR be encountered that is not identified on relevant permits, all work will cease within the immediate work area and the MECP will be contacted;
- In the case of SAR Birds: all activities will stop and the Contractor (with assistance from a qualified Ecologist/Avian Biologist) will discuss mitigation measures with the Environmental Inspector. In addition, the MECP and Environment and Climate Change Canada (ECCC) (if the species is considered a migratory bird) will be contacted to discuss applicable mitigation options. The Contractor will proceed based on the mitigation measures established through discussions with the MECP and/or ECCC;
- Candidate Bank Swallow Habitat and Barn Swallow habitat shall be identified to all construction personnel prior to construction activities. Workers will also be trained in the identification of all potential SAR within the Study Area; and
- In order to mitigate impacts to American Eel, various mitigation measures shall be implemented if in-water works are required within Mimico Creek. These include ESC measures, appropriate dewatering, and cofferdam installation if in-water works are required and adherence to sensitive timing windows for fish species throughout the creek.

5.1.3 *Monitoring Activities*

5.1.3.1 *Construction*

The following monitoring activities will be applied:

- The TRCA will be engaged during detailed design in order to determine the scope of an Environmental Monitoring and Contingency Plan (EMCP) in accordance with TRCA Standards. The EMCP will be included as part of the O. Reg. 166/06 application package to be prepared during detailed design;
- A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained, and enforced;
- The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone;
- Workers will report any instances of spills to their supervisors;
- Areas of revegetation will require watering and will be monitored by an Environmental Inspector or Environmental Monitor for at least two years to confirm at least an 80 percent survival rate and confirm that non-native and invasive species are not becoming pervasive as a result of the Project. A compensation/restoration strategy will be developed with the TRCA and the City of Toronto as the Project progresses;
- Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem, and this will be shared with Curve Lake First Nation for input and feedback;
- Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design;
- Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation;
- The Environmental Inspector will monitor dewatering occurring within 120 m of natural features. The Environmental Inspector will confirm that the water treatment is working appropriately and that no sediment is entering significant natural features;
- An Environmental Inspector will conduct regular inspections of dust emissions, to be defined prior to Project construction, to confirm dust control watering frequency and rates are adequate;
- Species at Risk: Monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA; and

- Nests of Migratory Birds: An Environmental Inspector will conduct regular monitoring, to be defined prior to pre-construction land clearing, to confirm that activities do not encroach into nesting areas or disturb active nesting sites.

5.1.3.2 Operation

- Monitoring will be undertaken subject to the scale of the maintenance work. Monitoring similar to that required during construction may be required for large-scale maintenance and replacement work;
- Contractors, GO Station staff and maintenance contractors are responsible for monitoring the effects of trimming and herbicide application. Any significant concerns will be reported to superiors for timely resolution; and
- GO Station staff and maintenance contractors are responsible for reporting spills and other issues and ensuring their timely resolution.

5.2 Tree Inventory

5.2.1 Potential Effects

Trees recommended to be preserved are those that will not be affected by the Project once the recommended mitigation measures have been implemented. Trees recommended to be removed are those deemed to be within the construction envelope (Project Footprint) and would not be able to withstand construction related activities or changes to grading. This designation may also be applied to trees that are dead, in poor condition, or trees that could pose future safety concerns. There are trees in good condition and of 10 cm DBH or smaller that could be recommended for transplant if transplanting is desired by the regulatory agencies and the Developer. This approach can be explored further during the detailed design stage. It should be noted that transplanting trees is dependent on available space within the Project Footprint. Trees identified with the potential for injury are those where the minimum TPZ encroaches into the construction envelope (Project footprint). In order to identify appropriate TPZs, Tree Protection Policy and Specification for Construction Near Trees (City of Toronto, 2016) was used to determine the minimum requirements for TPZ of city owned and private trees as illustrated in Table 5-2.

Table 5-2: City of Toronto's Minimum Tree Protection Zone Determination

Trunk Diameter (DBH) cm ⁶	Minimum Protection Distances Required ⁷ City Owned and Private Trees	Minimum Protection Distances Required Trees in Areas Protected by the Ravine and Natural Feature Protection By Law (whichever of the two is greater)
<10 cm	1.2 m	The dripline ⁸ or 1.2 m
10-29 cm	1.8 m	The dripline or 3.6 m

6 Diameter at Breast Height (DBH) is the measurement of the tree trunk taken at 1.4 m above the ground level.

7 Minimum Tree Protection Zone Distances are to be measured from the outside edge of the tree base.

8 The dripline is defined as the area beneath the outermost branch tips of a tree.

Trunk Diameter (DBH) cm ⁶	Minimum Protection Distances Required ⁷ City Owned and Private Trees	Minimum Protection Distances Required Trees in Areas Protected by the Ravine and Natural Feature Protection By Law (whichever of the two is greater)
30 ⁹ -40 cm	2.4 m	The dripline or 4.8 m
41-50 cm	3 m	The dripline or 6 m
51-60 cm	3.6 m	The dripline or 7.2 m
61-70 cm	4.2 m	The dripline or 8.4 m
71-80 cm	4.8 m	The dripline or 9.6 m
81-90 cm	5.4 m	The dripline or 10.8 m
91-100 cm	6 m	The dripline or 12 m
>100 cm	6 cm protection for each 1 cm diameter	12 cm protection for each 1 cm diameter or the dripline ¹⁰

Encroachment into TPZ will result in an injury or require removal depending on the extent of the encroachment. Generally, trees with a 25 percent encroachment or greater into the TPZ are recommended for removal. As a result of analysis, trees were given one of the three following preservation assignments:

- Preserve: No encroachment into the TPZ by proposed construction activities (i.e. grading, retaining walls, noise walls, and property acquisition areas);
- Injure: Minor encroachment (< 25 percent) into the TPZ by proposed construction activities; and
- Remove: Significant encroachment (25 percent and greater) into the TPZ by proposed construction activities.

It is also important to note that where the tree condition is assessed by the ISA Certified Arborist to be declining in health and condition or dead and only a minor encroachment is to occur to the tree, instead of injuring this tree, it will be removed. The reason for this approach being that an injury to a tree in decline will lead to the eventual death and structural failure of the tree. To ensure the safety of the ROW, it is important to reduce the potential for trees to fail and fall within the ROW impacting railway safety.

5.2.1.1 Construction and Tree Removal

Tree removal is required to accommodate the Project Footprint including land clearing, grading and construction. Trees on lands immediately adjacent to the Project Footprint may be impacted due to their crowns and root zones overlapping the proposed construction works (i.e., grading). Clearing of trees also has the potential to disturb or destroy nests of migratory birds which are protected under the MBCA. Disruption to migratory breeding

⁹ Diameter 30 cm at which trees qualify for protection under Private Tree By-law.

¹⁰ Converted from ISA Arborist Certification Study Guide, general guideline for tree protection barriers of 1 foot of diameter from the stem for each inch of stem diameter.

birds can be mitigated for by ensuring vegetation removal takes place outside of the MBCA active breeding season.

The Preferred Station Design (2020) was utilized to determine which trees should be identified for removal in the Study Area. Tree removals are defined as a significant encroachment (25 percent and greater) into the TPZ by proposed construction activities. Included in removals were five dead trees: #313, #319, #325, #422, and #424. These trees would be exempt from any City permitting.

Table 5-3 details the quantity of tree removals per applicable tree category in relation to their location and land ownership classification. For further details relating to species type, size, and condition, refer to Appendix A of Appendix B of this EPR.

Table 5-3: Tree Removal Chart Summary

Tree Category	Tree Category Description	Potential Removals
1	Trees with diameters of 30 cm or more, situated on private property on the Project Footprint.	11
2	Trees with diameters of 30 cm or more, situated on private property, within 6 m of the proposed construction on the Project Footprint.	5
3	Trees of all diameters situated on City owned parkland within 6 m of the Project Footprint.	18
4	Trees of all diameters situated within lands designated under City of Toronto Municipal Code, Chapter 658, Ravine Protection.	66
5	Trees of all diameters situated within the City road allowance adjacent to the Project Footprint.	1
6	Trees with diameters of 10 cm to 29 cm situated on private property within the Project Footprint or Study Area.	77
	Total	178

5.2.1.2 Construction and Tree Injury

Tree injury occurs when either tree protection hoarding cannot be placed at the minimum required distance from the trunk due to constraints or conflicts, or where the minimum TPZ overlaps with the construction limits. As defined in Section 6.0 of Appendix B of this EPR, tree injuries are minor encroachment (less than 25 percent) into the TPZ by proposed construction activities. Table 5-4 details the quantity of trees that have been identified as an injury based on their TPZ relative to the Project Footprint.

Table 5-4: Tree Injury Chart Summary

Tree Category	Tree Category Description	Potential Injuries
1	Trees with diameters of 30 cm or more, situated on private property on the subject site.	0
2	Trees with diameters of 30 cm or more, situated on private property, within 6 m of the proposed construction on the subject site.	0

Tree Category	Tree Category Description	Potential Injuries
3	Trees of all diameters situated on City owned parkland within 6 m of the subject site.	0
4	Trees of all diameters situated within lands designated under City of Toronto Municipal Code, Chapter 658, Ravine Protection.	9
5	Trees of all diameters situated within the City road allowance adjacent to the subject site.	0
6	Trees with diameters of 10 cm to 29 cm situated on private property within the Project Footprint or Study Area.	0
	Total	9

5.2.1.3 Construction and Tree Preservation

The current inventory of trees located outside the Project Footprint but are within the Study Area and have been identified for preservation (i.e., retention). Table 5-5 details the trees to be preserved.

Table 5-5: Tree Preservation Chart Summary

Tree Category	Tree Category Description	Trees to be Injured
1	Trees with diameters of 30 cm or more, situated on private property on the subject site.	0
2	Trees with diameters of 30 cm or more, situated on private property, within 6 m of the proposed construction on the subject site.	0
3	Trees of all diameters situated on City owned parkland within 6 m of the subject site.	0
4	Trees of all diameters situated within lands designated under City of Toronto Municipal Code, Chapter 658, Ravine Protection.	19
5	Trees of all diameters situated within the City road allowance adjacent to the subject site.	0
6	Trees with diameters of 10 cm to 29 cm situated on private property within the Project Footprint or Study Area.	1
	Total	20

5.2.1.4 Operations and Tree Maintenance

Deterioration of tree vitality over time for trees that will be protected was the only identified effect during the operations and/or maintenance phase of the Project. It is noted that new growing conditions (i.e., new exposure to wind, sunscald, and root damage) may result in failure of trees or their branches.

5.2.2 Mitigation Measures

A number of mitigation measures have been identified as described below, to address the predicted effects associated with Project construction and operations/maintenance phases. These mitigation measures may be updated during the detailed design phase once construction works and potential effects are better understood.

5.2.2.1 Construction and Permits

The types of permits and the quantity of trees that will require permitting will be determined during the detailed design process. Where permits are required, the Developer will obtain all applicable documents and approvals. The Developer will continue to adhere to municipal By-laws and policies for tree removals on municipal land and private properties. Tree protection measures will follow municipal By-Laws, regulations, and policies. Regulated trees that are dead and identified to be removed are exempt from permit requirements.

5.2.2.2 Construction and Compensation

Tree replacement may be required to compensate for tree removals as a result of Project implementation. The compensation quantities will be determined during the detailed design stage upon confirming tree removals and injuries and determining which trees will be compensated for. Tree compensation that will be paid cash-in-lieu to the City must be submitted prior to permit issuance.

Compensation will follow the approach set forth in the Metrolinx Vegetation Guideline, 2020 (Metrolinx, Vegetation Removal and Compensation Guideline, 2020). Table 1 in the guide provides a compensation approach based on tree location.

Compensation will also follow guideline ratios of City of Toronto for tree replacement of private 30cm DBH and greater, any park and City trees, replaced at ratios 3:1, 1:1 and 1:1 respectively. Compensation for RNFP removals for trees >10 cm is 3:1, <10 cm is 1:1, and tree injuries is a compensation replacement of 1:1 with hedges a ratio of 1:5m hedge removed.

Where ecological compensation, which involves the replacement of trees at a ratio representative of their ecosystem functions and services, is greater than bylaw/regulation requirements, the bylaw/regulation shall be followed and the difference between the two shall be implemented through ecological compensation.

5.2.2.3 Construction Timing

- Timing windows for trees that have been identified as part of the habitat of a SAR will be confirmed by the MECP;
- To reduce the possibility of contravention of the MBCA, vegetation removal should be scheduled to occur outside of the overall bird nesting season of April 1 and August 31 in any given year. Some birds may nest before or after this peak bird nesting season due to annual seasonal fluctuations. Therefore, if a nest of a migratory bird is found within the construction area outside of this nesting period it will receive protection; and
- If vegetation must be removed during the overall bird nesting season:
 - Nesting activity searches will be conducted in areas defined as simple habitat by a qualified Ecologist/Avian Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of

confirmed breeding evidence, as defined by Atlas of the Breeding Birds of Ontario criteria (Cadman M. , Sutherland, Beck, Lepage, & Couturier, 2007);

- If an active nest or confirmed nesting activity of a migratory bird is observed in simple habitat 11 , regardless of the timing window recommended, a species-specific buffer area following ECCC guidelines will be applied to the nest or confirmed nesting activity wherein no vegetation removal will be permitted until the young have fledged from the nest. The radius of the buffer will depend on species, level of disturbance and landscape context (Government of Canada, 2020) which will be confirmed by a qualified Ecologist/Avian Biologist, but will protect a minimum of 10 metres around the nest or nesting activity;
- The results of all nest searches will be documented at the end of each survey day in a Technical Memorandum, including information on the searcher, date, time conducted, weather conditions, habitat type, vegetation community type, observations of breeding activity, observations of confirmed nests including co-ordinates, and, if required, the buffer applied to identified breeding/nesting sites. If vegetation removal must occur in complex habitats within the above-listed timing windows and absolutely cannot be avoided, the same BMP such as nest and nesting activity searches described above will be undertaken; and
- If a nesting migratory bird (or species at risk protected under the ESA) is identified within or adjacent to the construction site, regardless of the timing window recommended, all activities will stop and the Contractor (with assistance from a qualified Ecologist/Avian Biologist) will discuss mitigation measures with the ISA Certified Arborist.

5.2.2.4 *Tree Preservation Measures*

The City of Toronto has detailed protection measures stated in their specifications and details from their Tree Protection Policy and Specifications for Construction Near Trees (July 2016). Applicable notes for preservation measures from the City's document have been included on the Figures in Appendix D in Appendix B of this EPR. Measures beyond the City standard tree protection hoarding may be required to protect trees where there is potential for 'tree injury' (i.e., a reduction in the minimum tree protection zone or work that may be required within a TPZ).

11. Simple habitat refers to habitat that contains few nesting spots or few species of migratory birds, where identification of active nests or confirmed nesting activity can be completed with confidence. According to (Environment and Climate Change Canada, 2020), examples of simple habitat include the following:

- Urban parks consisting mostly of lawn with a few isolated trees.
- Vacant lot with few possible nest sites.
- Previously cleared area where there is a lag between clearing and construction activities (and where ground nesters may have been attracted to nest in cleared areas or in stockpiles of soil); or Structure such as a bridge, beacon, tower, or building (often chosen as a nesting spot by robins, swallows, phoebes, nighthawks, gulls, and others).
- Structure such as a bridge, beacon, tower, or building (often chosen as a nesting spot by robins, swallows, phoebes, nighthawks, gulls, and others).

If it is determined that any City regulated trees require pruning, a pruning plan must be submitted to the City for approval. Trees will be pruned in a manner that minimizes physical damage and promotes quick wound closure and regeneration following ISA BMP Tree Pruning (ISA, 2019). All tree maintenance and pruning should be carried out by a qualified tree care specialist that is also an ISA Certified Arborist or under the supervision of an ISA Certified Arborist. If earthworks are required immediately adjacent to a TPZ, and there is a potential to encounter roots, it is recommended that an exploratory exercise with an air spade be conducted, as described below. Any trees to be removed or pruned post permit issuance must be done with the approval of Urban Forestry.

Vertical Root Protection: If it is determined that root pruning must occur to facilitate a grade change or other earthworks, the roots will be pruned in accordance with acceptable arboricultural standards which may include:

- Maintenance and pruning will be avoided during hot and dry weather;
- Exposed roots should be neatly cut with a sharp saw;
- Ends of severed roots should be covered with a plastic bag held in place by a rubber band to protect them from drying out;
- If tree maintenance is to occur during hot weather, exposed roots should be wrapped with dampened burlap, especially if there is a delay in pruning or filling with soil;
- Trees to be pruned should be watered after digging, along with an application of soil and mulch;
- Backfill with excavated material and reinstate to original condition or better; and
- Upon completion reinstate tree protection barrier to original location.

Horizontal Root Protection: in select locations where excavation will require the temporary removal of tree protection barrier and works within a TPZ, Horizontal Root Protection in conjunction with air spade exploration is recommended to reduce the potential for compaction. Horizontal root protection should follow detail TP-1 of the City of Toronto and will include:

- One layer of non-woven geotextile material;
- A layer of at least 30 cm coarse wood chip;
- Placement of 1.2 m x 1.2 m timber frame or equivalent to hold woodchips where needed;
- Minimum two layers of 19 mm thick plywood board or one layer steel plate;
- Application to be reviewed and approved by the Contract Administrator prior to installation; and

- Upon completion, remove boards and spread mulch in a two-metre diameter around the trunk to a depth of 75 mm, and reinstate tree protection barrier to original location.

Root Pruning Practices: As previously noted, if it is determined that root pruning may be required, an exploratory exercise with an air spade should be conducted. The following are standard ISA BMPs for Root Management (ISA, 2017) for root pruning:

- All approved root pruning is to take place by or under the supervision of an ISA Certified Arborist and in accordance with best arboricultural practice;
- Pruned root ends will be neatly and squarely trimmed, and the area will be backfilled with clean native fill as soon as reasonably possible to prevent desiccation and promote root growth;
- The exposed roots will not be allowed to dry out. Exposed roots should be wrapped with dampened burlap, so that the roots maintain optimum soil moisture during construction and backfilling operations; and
- Backfilling will occur as soon as reasonably possible and will include use of clean, uncontaminated topsoil from an approved source. It is recommended that the texture of backfill be coarser than existing soils, and that the backfill is applied directly onto existing soils (i.e., remove air pockets, sod, etc.).

Branch Pruning Practices - All trees identified for preservation (i.e., those to be protected and retained), including those for injury will be protected using the prescribed hoarding details as identified in the City of Toronto Specifications for Construction Near Trees. In addition to the tree protection barrier specifications, the following are standard ISA BMPs for Tree Pruning (ISA, 2019) for branch pruning:

- All limbs damaged or broken during construction should be pruned cleanly, utilizing bypass secateurs in accordance with best arboricultural practices. Should there be a potential risk of transfer of disease from infected to non-infected trees; tools must be disinfected after pruning each tree by dipping in methyl hydrate. This practice is particularly important during periods of tree stress and when pruning many members of the same genera (i.e., tree branch versus limbs versus epicormic shoots), within which a disease could be spread quickly (i.e., Verticillium Wilt on Maples or Fireblight on genera of the Rosaceae family);
- All pruning cuts should be made to a growing point such as a bud, twig, or branch, cut just outside the branch collar (i.e., the swollen area at the base of the branch that sometimes has a bark ridge), and perpendicular to the branch being pruned rather than as close to the trunk as possible. This minimizes the site of the wound. No stubs should be left;

- Extensive pruning is best completed before plants break dormancy. Pruning should be limited to the removal of no more than 1/3 of the total bud and leaf bearing branches. Pruning should include the careful removal of:
 - Deadwood;
 - Branches that are weak, damaged, diseased and those which will interfere with construction activity;
 - Secondary leaders of conifers;
 - Trunk and root suckers;
 - Trunk waterspouts; and
 - Tight V-shaped or weak crotches (included unions).
- Any branches that overhang the work area and require pruning are to be pruned using best arboricultural practices utilizing by-pass secateurs in accordance with the American National Standards Institute A300 (Part 1) - Pruning (ANSI, 2017); and
- The Contractor(s) must report immediately to the Contract Administrator any damage to trees such as broken limbs, damage to roots, or wounds to the main trunk or stem systems so that the damage can be assessed immediately.

5.2.2.5 *Construction Implementation*

There are several common impacts to trees that can occur during construction, especially in urban settings due to the already limited growth space for root systems. The following are standard ISA BMPs for Managing Trees During Construction (ISA, 2016) to implement prior to and during construction activities:

- Prior to construction, a site meeting will be held with the Contractor(s) and Contract Administrator to review the clearing limits and confirm the installation location for the tree protection barrier;
- Tree protection barriers will be installed as per the construction specifications and applicable City of Toronto specifications. All supports and bracing to safely secure the barrier will be placed outside the TPZ;
- Inspection of the tree protection barrier, including photographic records and deficiency notes, will be undertaken by the site supervisor, and submitted to the Contract Administrator prior to the commencement of construction, during construction and after construction is completed;
- Proof of installed hoarding must be submitted to City Urban Forestry prior to permit issuance; and
- All removals should be felled into the work area to ensure that damage does not occur to the trees within the TPZ. Upon completion of the tree removals, all felled trees are

to be removed from the site, and all brush chipped. All brush, roots and wood debris should be shredded into pieces that are smaller than 25 mm in size to ensure that any insect pests that could be present within the wood are destroyed.

5.2.2.6 Operations and Maintenance

Pruning and felling will be carried out by or under the direction of an ISA Certified Arborist.

During removal operations efforts should be made to prevent the spread of invasive plant species during construction both on and off-site. Invasive species vegetation has been identified in the NER report. Sanitation of construction equipment should be undertaken in accordance with the Clean Equipment Protocol (OIPC, 2016) and at a minimum should include sanitation of construction vehicles and equipment prior to leaving and moving to the next site. A cleaning station should be set up, so vehicles and equipment can be inspected and cleaned regularly.

5.2.3 Monitoring Activities

5.2.3.1 Construction

An ISA Certified Arborist is required to be on-site during key construction activities (i.e., vegetation removal), as required, to ensure compliance with environmental requirements. The ISA Certified Arborist will be responsible for:

- On-Site inspection 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 silt fencing will be repaired if it is damaged. Any damaged/injured trees will be assessed by an ISA Certified Arborist who will provide management recommendations and direction following City By-laws, standards, and practice; and
- Regular monitoring, to be defined prior to pre-construction land clearing, to confirm activities do not encroach into nesting areas or disturb active nesting sites.

5.2.3.2 Operations and Maintenance

Routine inspections will identify dead trees or limbs adjacent to the Project Footprint that will require maintenance for reduction of safety risks. An ISA Certified Arborist will inspect and assess trees on site and on lands immediately adjacent annually (at minimum) from the Metrolinx property. Trees to be removed or pruned post permit issuance must only be done so with the approval of City Urban Forestry.

5.2.3.3 Restoration, Compensation and Post Construction Monitoring

Restoration, compensation, and post construction monitoring will be required to ensure continued ecological function of natural features within or in the immediate vicinity of the Project footprint as identified through Metrolinx Vegetation Guideline and TRCA Guideline for Determining Ecosystem Compensation. These activities include:

- Post planting monitoring of restoration areas for two years after installation to confirm survival of plantings and/or seed mix, one year thereafter with one additional monitoring visit in the following growing season. Should the plantings and/or seed mix not survive, additional seeding and/or plantings will be undertaken, and the two year 'warranty' period will restart. Mandatory inspection by City of Toronto Urban Forestry after the two-year period will confirm whether the state of the planting is acceptable, and an 80% survival rate for RNFP areas will be required;
- Additional restoration/compensation measures and/or monitoring maybe required based on the results of additional surveys and consultations with regulatory agencies;
- Restoration/compensation and/or monitoring will be confirmed through regulatory agency consultation during detailed design;
- Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem, and this will be shared with Curve Lake First Nation for input and feedback;
- Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design; and
- Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation.

5.2.4 Recommendations

5.2.4.1 Tree Removals, Protection and Preservation.

It is understood that development of the Project and associated construction will occupy the Proposed Project Footprint in its entirety. As such, it is anticipated that 178 trees will be required for removal, nine trees will be expected to be injured, and 20 trees will be preserved. A summary breakdown is provided in Table 5-6.

Table 5-6: Tree Removal, Injury and Preservation Summary

Tree Category	Tree Category Description	Potential Removals	Potential Injuries	Trees to be Preserved
1	Trees with diameters of 30 cm or more, situated on private property on the Project Footprint.	16	0	0
2	Trees with diameters of 30 cm or more, situated on private property, within 6 m of the proposed construction on the Project Footprint.	0	0	0
3	Trees of all diameters situated on City owned parkland within 6 m of the Project Footprint.	18	0	0

Tree Category	Tree Category Description	Potential Removals	Potential Injuries	Trees to be Preserved
4	Trees of all diameters situated within lands designated under City of Toronto Municipal Code, Chapter 658, Ravine Protection.	66	9	19
5	Trees of all diameters situated within the City road allowance adjacent to the Project Footprint.	1	0	0
6	Trees with diameters of 10 cm to 29 cm situated on private property within the Project Footprint or Study Area.	77	0	1
	Total	178	9	20

5.2.4.2 Recommended Future Steps

The following is a list of commitments that will occur during future phases of the Project either prior to, or during construction:

- Preparation of an Arborist Report and Tree Protection Plans based upon the detailed design to support permit applications for tree removals and injuries, including showing location of hoarding to be installed as well as tree protection and preservation plans to be submitted to City and TRCA for approval prior to permit issuance;
- Ownership of property required for the station will be confirmed to finalize categorization of trees prior to submission of permit applications for tree removals and injuries; and
- A qualified Environmental Inspector is required throughout the construction period to ensure that tree protection measures are implemented, maintained, and enforced. This inspector is responsible for determining the need and timing of additional expertise, such as an ISA Certified Arborist.

5.2.4.3 Permitting and Compensation

Where permits are required on City of Toronto or private property lands within the Study Area, the Developer will work with stakeholders to obtain the necessary documents and approvals. Tree protection measures will follow the municipal By-laws, regulations, and policies.

Based on an overview of the Study Area, the following legislation is applicable:

- City of Toronto Private Tree By-law;
- City of Toronto Parks By-law;
- City of Toronto Ravine and Natural Feature Protection By-law;
- City of Toronto Street Tree By-law; and
- TRCA Development Permit (O. Reg. 166/06).

Compensation will be determined during detailed design, based on upon the basal area approach once tree removals have been determined based on construction methods.

Detailed restoration and compensation plans will be prepared prior to Project construction in discussion and coordination with the City of Toronto and TRCA using the expertise of a Certified Arborist/Forester and/or licensed Landscape Architect. Restoration plans and compensation payments must be submitted prior to permit issuance.

5.3 Archaeological Resources

5.3.1 Analysis and Conclusions

5.3.1.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (AjGu-11);
- Water sources: primary, secondary, or past water source (Mimico Creek, Lake Ontario);
- Early historic transportation routes (Park Lawn Road, railways); and
- Proximity to early settlements (Mimico).

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The Municipal Heritage Register was consulted and no properties within the Study Area are Listed or Designated under the *Ontario Heritage Act*.

The Master Plan of Archaeological Resources of the City of Toronto (Interim Report) (ASI et al. 2007) indicates that part of the Study Area exhibits archaeological potential.

These criteria are indicative of potential for the identification of Indigenous and Euro-Canadian archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

The property inspection only assessed lands not previously subject to archaeological assessments within the Study Area predominantly from publicly accessible access points. The Study Area follows the existing Lakeshore West corridor from the Gardiner Expressway overpass to Mimico Creek. The west half of the Study Area consists of residential condominiums north and south of the rail corridor, steeply sloping creek banks on the west of the creek, and a treed parkland to the east. East of Park Lawn Road consists of scrubland, billboard towers and the open construction lands at 2150 Lake Shore.

In combination with the background research and topographic mapping (ESRI et al 2020), lands on the east creek bank south of the railway corridor were determined to be sloped in

excess of 20 degrees, and according to the S & G Section 2.1 do not retain archaeological potential (Plates 1-3; Figure 12: areas highlighted in pink in Appendix C of this EPR).

The remainder of the Study Area has been subjected to deep soil disturbance events from the construction of the existing road ROWs of Park Lawn Road and the Gardiner Expressway, as well as the railway crossing over Park Lawn Road and Mimico Creek, involving the channelization of the creek. According to the S & G Section 1.3.2 do not retain archaeological potential (Plates 1-5; Figure 9; Figure 12: areas highlighted in yellow in Appendix C of this EPR). These areas do not require further survey.

5.3.1.2 *Conclusions*

The Stage 1 background study determined that one previously registered archaeological site is located within one kilometre of the Study Area and is not within 50 metres. The property inspection of the proposed footprint determined that areas which had not been previously assessed do not retain archaeological potential and do not require further survey.

5.3.2 *Recommendations*

In light of these results, the following recommendations are made:

1. The Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or having been previously assessed. These lands do not require further archaeological assessment.
2. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the MHSTCI should be immediately notified.

5.3.3 *Advice on Compliance with Legislation*

ASI also advises compliance with the following legislation:

- The Stage 1 Archaeological Assessment is submitted to the MHSTCI as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation, and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the Project area of a development proposal have been addressed to the satisfaction of the

MHSTCI, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development; and

- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*;
- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the *Ontario Heritage Act*; and
- *The Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 require that any person discovering human remains must notify the police or coroner and the Registrar, Burials of the Ministry of Government and Consumer Services.

5.4 Built Heritage Resources and Cultural Heritage Landscapes

5.4.1 Preliminary Impact Assessment

Field review confirmed the location of one BHR adjacent to the Study Area and assisted in the identification of potential cultural heritage value and heritage attributes, and allowed for the assessment of potential/anticipated impacts of the proposed infrastructure improvements on the identified BHR, as summarized in Table 5-7. No direct or indirect impacts have been identified.

Table 5-7: Identified Built Heritage Resources and Cultural Heritage Landscapes, Preliminary Impact Assessment, and Recommended Mitigation Measures

Reference Number	Type of Property	Location	Heritage Recognition	Preliminary Impact Assessment	Mitigation Measures
BHR-01	Water Tower	The Christie Water Tower is located in the northern limits of the former Mr. Christie Factory Site; approximately 55 metres east of the eastern limits of the Project Footprint. ¹²	Previously Identified (ERA Architects Inc, 2019).	No direct impacts or indirect impacts are anticipated. Given that the water tower is over 50 metres from the Project footprint, no vibration impacts from construction activities are anticipated. In addition, the Park Lawn GO Station will not impact views to the water tower from the Gardiner Expressway or the Lakeshore West rail corridor. The Christie Water Tower will likely be relocated within the former Mr. Christie Factory Site as part of a redevelopment Project.	No further work is required.

5.4.2 Results and Mitigation Recommendations

The results of background historical research and field review revealed a Project Study Area with both an urban and rural land use history dating back to the early nineteenth century. The results of this assessment have identified one potential BHR adjacent to the Study Area. No direct or indirect impacts to BHR 1, the Christie Water Tower, are anticipated.

The following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified BHRs.
2. Should future work require an expansion of the Project Study Area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on heritage resources.

¹²The Mr. Christie Factory Site has been identified as a potential BHR. According to the HIA (ERA Architects Inc. 2019) the former Mr. Christie Factory Site will be redeveloped: "The Christie Water Tower is proposed to be retained, relocated and incorporated into a planned neighbourhood as a key component of the Site's interpretation program."

3. The Cultural Heritage Report has been submitted to heritage staff at the City of Toronto, the MHSTCI, and any other relevant stakeholder with an interest in this Project.

5.5 Socio-Economic Environmental and Land Use

5.5.1 Potential Effects

The proposed Park Lawn GO Station has the potential to result in temporary and permanent socio-economic impacts on neighbouring businesses, residents, and recreational users. Development of the Park Lawn GO Station will result in acquisition of approximately 1.5 hectares of land from two landowners (City of Toronto, and South Beach Condos and Lofts) adjacent to the existing Lakeshore West rail corridor to accommodate the proposed Park Lawn GO Station.

The lands to be acquired are comprised of mixed use, employment lands (to be converted to mixed use), and natural areas. All property acquisitions will be partial acquisitions.

Once property impacts are confirmed during detailed design, the Developer will meet with property owners to discuss property impacts and compensation as appropriate. The potential effects to properties will be mitigated by providing fair market value compensation in accordance with applicable laws and through negotiations with the affected property owners. All necessary property acquisitions will be completed prior to the commencement of Project construction.

Potential effects associated with this Project may also include construction-related nuisance effects (e.g., increased noise, vibration, and dust and associated diminished air quality conditions). All potential effects will be mitigated through appropriate Project design and implementation of well-established mitigation measures. In addition, the Developer will continue to consult with affected parties prior to Project construction to further enhance and develop applicable mitigation measures, as required.

Potential effects to utilities are summarized as follows:

Dry Utilities

- One existing underground Telus cable northeast of Park Lawn Road is to be relocated to suit the proposed station location;
- One existing Toronto Hydro overhead feeder for the existing telecoms tower northeast of Park Lawn Road is in conflict with the proposed station location. It is to be relocated underground further east of Park Lawn Road;
- One existing Enbridge gas meter northeast of Park Lawn Road is in conflict with the proposed station location;
- Two existing Enbridge gas mains crossing under the Metrolinx Rail Corridor and east of Park Lawn Road are in conflict with the proposed station buildings.

- Zayo, Rogers, Bell, Metrolinx, and CN cables, along the north side of the Metrolinx Rail Corridor are in conflict with the proposed Park Lawn GO Station construction; and
- Bell360 and Telus cables along the south side of the Metrolinx Rail Corridor are in conflict with the proposed Park Lawn GO Station construction.

Wet Utilities

- One existing stormwater sewer northeast of Park Lawn Road is in direct conflict with the proposed station footprint.
- One abandoned 300mm diameter watermain northeast of Park Lawn Road is to be removed as required for construction;
- One sanitary sewer along the east side of Park Lawn Road is in conflict with the proposed bridge piers;
- One abandoned sanitary sewer along the west side of Park Lawn Road is in conflict with the proposed bridge piers. It will be removed, cut, and capped as required for construction; and
- One existing stormwater sewer southwest of Park Lawn Road is in conflict with the proposed south sloping walkway. The relocation details and location are still in progress.

See Figure 5-1 for utility conflicts based on the current concept plan.



Figure:
5-1



Development of the Park Lawn GO Station will also result in a number of benefits to the existing and planned neighbourhoods within the Study Area. It is widely recognized that public transportation is a beneficial service that can:

- Improve the quality of life for local citizens by providing them with personal mobility and freedom by offering transportation options;
- Improve access to new job opportunities by enhancing regional transit connections;
- Reduce traffic congestion and reduce the need for new and expensive road infrastructure;
- Reduce carbon emissions and air quality concerns associated with automobile use;
- Improve community health by supporting walkable communities and decreasing respiratory health concerns due to air pollution; and
- Allow citizens to save money on gas, vehicles, vehicle maintenance, insurance, and other automobile related costs.

The Project is also expected to create significant public benefit by providing an improved access to regional public transportation. The net social and economic benefit of public transit is expected to outweigh any residual impacts through: reduced traffic congestion on roadways, a net improvement in air quality from fewer cars on the road; and improvement in access to the regional transit system. The proposed Park Lawn GO Station will also provide greater mobility for those without access to, or ability to drive, a car. As a result of these positive factors, the Project can be viewed as a significant social and economic gain for the neighbourhoods near the proposed Park Lawn GO Station.

5.5.2 Mitigation Measures

The following measures are proposed to mitigate impacts to the socioeconomic environment:

Existing Land Use, Property

- Confirm specific property requirements during detail design to determine predicted property impacts;
- Engage and negotiate with affected property owners regarding land acquisition and easements/TLIs required for the proposed works;
- Provide fair market value compensation to affected property owners in accordance with applicable laws;
- Consultation and ongoing discussion with TRCA to address impact to hazard lands; and

- Consultation and ongoing discussions with City to identify mitigation measures and strategies for land transfer to find suitable lands for exchange in accordance with OP Policies 4.3.8 and 2.3.2.4

Roads and Traffic Volumes

- Mitigation measures will be taken as documented in the Transportation Brief (Section 5.8 and Appendix H of this EPR);
- Maintain access to residential and commercial buildings;
- Prepare and implement a Construction Traffic Management Plan; and
- Provide advance notification and signage for lane or road closures.

Public Transit and Active Transportation

- Consultation with TTC and City of Toronto regarding lane and sidewalk closures;
- Prepare and implement a Construction Traffic Management Plan; and
- Provide advance notification and signage for lane or road closures.

Utilities

- The design and construction of impacting the Enbridge gas mains will be completed by Enbridge;
- Enbridge gas mains crossing under the Metrolinx Rail Corridor and east of Park Lawn Road are to be relocated to the west side of Park Lawn Road;
- Zayo, Rogers, Bell, Metrolinx, and CN cables, along the north side of the Metrolinx Rail Corridor in conflict with the proposed Park Lawn GO Station construction to be relocated underneath the proposed platforms;
- Bell360 and Telus cables along the south side of the Metrolinx Rail Corridor are in conflict with the proposed Park Lawn GO Station construction to be relocated underneath proposed platforms;
- Sanitary sewer along the east side of Park Lawn Road to be relocated further east of Park Lawn Road;
- Abandoned sanitary sewer along the west side of Park Lawn Road will be removed, cut, and capped as required for construction;
- Consultation with utility owners and implementation of utility relocation agreements;
- Completion of Subsurface Utility Engineering (SUE) investigations to confirm utility locations;
- Contingency plans to address accidental damage to underground and overhead utilities during construction; and

- Other relocation details and location are in progress and will be confirmed during detailed design.

Residential, Commercial and Institutional Uses

- Mitigation measures will be taken as documented in the Air Quality Impact Assessment (Section 5.6 and Appendix F of this EPR) and in the Noise and Vibration Impact Assessment (Section 5.7 and Appendix G of this EPR);
- Noise, Vibration and Air Quality monitoring will reflect Metrolinx' Environmental Guide for Noise and Vibration Impact Assessment - Rev. 7 (final) (Metrolinx, 2019);
- Construction-related noise, vibration, dust and diminished air quality effects will be managed to confirm compliance with provincial regulations, local by-laws and noise, vibration and air quality monitoring will reflect Metrolinx' Environmental Guide for Noise and Vibration Impact Assessment - Rev. 7 (final) (Metrolinx, 2019);
- Preparation and implementation of a Dust Management Plan;
- Timing restrictions will be in place to limit the time of day for construction activities, as required by municipal by-laws;
- Construction schedule delays will be avoided to the extent possible in order to minimize the time over which construction will occur; and
- All stockpiled materials will be fenced and the construction footprint area will be minimized to confirm that the construction zone does not extend beyond that which is necessary.

Recreational Uses, Parks and Open Space

- Mitigation measures implemented to address effects on residential, commercial, and institutional uses will also be implemented to address effects on recreational uses, parks, and open space; and
- If required, consultation with the City of Toronto for City owned lands in Parks and Open Space Areas and in the Green Space System to identify suitable lands for exchange in accordance with OP Policies 4.3.8 and 2.3.2.4.

Aesthetic and Visual Effects

- Provide screened enclosure for the site with graphics that create visual interest;
- Locate stockpile and laydown areas away from Park Lawn Road and Lake Shore Boulevard West; and
- Compensation of loss of trees in accordance with City of Toronto By-laws and TRCA requirements.

Residential, Commercial and Institutional Uses

- Operations will be carried out in accordance with applicable regulations and standards, including Ontario's ambient air quality criteria (AAQC) (PIBS#6570e01) (Ministry of the Environment (MOE), 2012), MOEE/GO Transit Noise and Vibration Protocol (Ministry of Environment and Energy (MOEE), 1994) and the Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning Publication NPC-300 (Ministry of the Environment and Climate Change (MOECC), 2013); and
- During detailed design, construction and permanent use mitigation will be assessed.

Safety Security and Light Spillage

- External visors on floodlights;
- Light location, height and settings designed to minimize light spillage; and
- Use of shielded fixtures.

5.5.3 Monitoring

The following Monitoring Activities are proposed:

Roads and Traffic Volumes

- Monitor implementation of mitigation measures in accordance with the Construction Traffic Management Plan.

Public Transit and Active Transportation

- Monitor implementation of mitigation measures in accordance with the Construction Traffic Management Plan and agreements with the TTC and the City of Toronto.

Utilities

- Monitoring of construction activities by a qualified Environmental Inspector including erosion and sediment control measures for ground disturbance for all utility relocation work and bypass systems, if necessary, for gravity and pressure wet utilities.

Residential, Commercial and Institutional Uses

- Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified construction work zones;
- If restoration of Open Space lands required, restoration shall meet TRCA/RNFP/City standards;
- Type 1 noise and vibration monitoring at 88-90 Park Lawn Road and 96 Park Lawn Road; and
- Monitoring will continue throughout the construction phase until activities are complete and all exposed soils have been stabilized and all construction waste has been cleaned up.

Recreational Uses, Parks and Open Space

- Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified construction work zones.

Aesthetic and Visual Effects

- Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified construction work zones;
- A Landscape Architect (licensed in the Province of Ontario) or qualified designate will be required to confirm the success of plant establishment through warranty inspections; and
- The TGS Version 3 and Clause 13.3.3 of the Christie Secondary Plan, related to light spillage will be taken into consideration during detailed design, and shall include the use of Dark Sky compliant fixtures and bird-friendly building design principles.

5.6 Air Quality

5.6.1 Construction

5.6.1.1 Potential Effects

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, inhalable particulate matter (PM₁₀) and PM_{2.5}) resulting from:
 - Clearing and grubbing of the Project site;
 - Soil excavation and filling activities required to facilitate the site layout for the new station;
 - Demolition of existing infrastructure necessary to accommodate the new station;
 - 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; and
 - Movement of heavy and light vehicles on paved and unpaved roads.
- Emissions resulting from the use of combustion engines associated within mobile and stationary construction equipment and machinery on-site; and

- In addition to the above, 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.

5.6.1.2 *Mitigation Measures*

Best Management Practices will be implemented to mitigate potential air quality effects associated with the construction activities, which will be included in an Air Quality Management Plan. This plan will be implemented for the duration of the construction phase, and will address the areas of vehicle and construction equipment exhaust, potential traffic disruption and congestion, fugitive dust, and odour. Potential mitigation measures for these areas are:

- 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 “Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities”;
- 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;
- 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; and
- 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 (DMP).

5.6.1.3 *Monitoring*

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. The Operations Manual for Air Quality Monitoring in Ontario (2018) will be used as reference for such monitoring. 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 required. Monitoring will continue throughout the construction phase until activities are complete, all exposed soils have been stabilized, and all construction waste has been cleaned up. A complaint response protocol for nuisance effects, such as dust, will also be established.

5.6.2 *Operations*

5.6.2.1 *Potential Effects*

Major sources of air emissions considered in this analysis are generated by:

- The combustion engines of passenger and heavy vehicles, as well as buses travelling adjacent to the Park Lawn GO Station on nearby paved surfaces, such as adjacent municipal roadways and on-site driveways. The only roads included in this analysis are the ones considered to be affected by the Park Lawn GO Station.

The potential effect on local air quality during the operations of the Future Build scenario is predicted to be negligible for all the contaminants. Within the Study Area, the modelling results indicate that the Future Build scenario modelled concentrations will be, for the most part, slightly higher than the Existing scenario.

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

5.6.2.2 *Mitigation Measures*

Operation of the Park Lawn GO Station will be carried out in accordance with applicable regulations and standards, including Ontario's AAQC (PIBS#6570e01) (MOE, 2012). To improve general air quality around the Station during the operations and maintenance phase, the following measures could be implemented:

- Allow for future connections to multi-use paths to increase the number of passengers that are walking or cycling to access the new GO Station; and
- During construction, best management practices will be put into place including road sweeping, and covering of stockpiles and dump trucks.

Considering the air quality will not be decreased by the Project's completion, the measures to be taken are limited. However, if other structures, such as parking lots and PUDO areas were to be constructed, additional measures could be implemented to limit idling times in the station footprint.

5.6.2.3 *Monitoring*

During construction of the Park Lawn GO Station, temporary effects are expected in the Study Area. Typical emissions related to construction activities consist of fugitive dust emissions (TSP, PM₁₀ and PM_{2.5}) and mobile equipment emissions; therefore, people living in proximity to the construction area may experience an increase in dust concentrations and other criteria air contaminants during the construction phase. Specific attention will be given to monitoring dust levels during the construction phase and applying mitigation measures to reduce the effects on the surrounding receptors.

Metrolinx maintains ongoing inspection schedules to monitor the effectiveness of its Transit operations. A complaints procedure is in place to address any concern raised by neighboring landowners, municipalities, or the public.

5.7 **Noise and Vibration Assessment**

5.7.1 **Potential Effects**

5.7.1.1 *Construction Noise*

Construction activities associated with the Park Lawn GO Station that are likely to cause potential noise effects generally include:

- Soil excavation, grading and compaction;
- Vehicle movements, heavy lifting; and
- Existing track modifications and demolition.

The above potential effects are generally limited to the lands adjacent to the Park Lawn GO Station and may be perceived as a short-term nuisance to affected building occupants, including nearby residents.

Construction activities were reviewed and sound level calculations were completed to assess noise produced from anticipated construction activities. On this basis it was determined that sensitive receptors near the construction site will not exceed the applicable criteria during weekday daytime construction conditions.

However, construction sound levels are expected to exceed sound level criteria during nighttime and weekend daytime construction conditions. This exceedance is limited to the upper level north-facing units in the two condominium buildings located at 88-90 Park Lawn Road. Construction noise was assessed at the Outdoor Living Area (OLA) located on the northwest side of 88-90 Park Lawn Road. Construction sound levels will not exceed the applicable criteria at this location.

5.7.1.2 *Operations Noise*

The platform speakers are the sole significant stationary noise sources for the station.

During the operations/maintenance phase, there are no cases where the Adjusted Noise Impact was “Significant” or “Very Significant”; therefore, no mitigation measures are required.

The Future Build Stationary source noise levels do not exceed the ambient, therefore no mitigation strategies are required. However, once Station public address system, ancillary systems, and any other stationary noise source specifications are finalized, the stationary noise assessment shall be designed so that the one-hour equivalent sound level does not exceed the higher of the applicable exclusion limit value given in NPC-300, or the background sound level.

5.7.1.3 *Construction Vibration*

Construction activities were reviewed and vibration level calculations were completed to assess vibration levels produced from anticipated construction activities. The building damage construction vibration ZOI was determined to be eight metres; the ZOI falls within the property at 88-90 Park Lawn Road and within the building located at 96 Park Lawn Road.

The construction vibration annoyance ZOI will extend into the residential buildings at 88-90 Park Lawn Road and 165 Legion Road. As such, there is the potential for construction vibration annoyance at these properties. Best Management Practices are to be implemented to possible extent to minimize disturbances to nearby residents.

There are no federal or provincial construction vibration limits. Vibration levels due to construction shall employ the Toronto Municipal Code Chapter 363, Building Construction and Demolition, Article 5 requirements (City of Toronto, Nov. 27, 2019).

5.7.1.4 *Operations Vibration*

Vibration levels were modelled using the General Vibration Assessment method. The vibration assessment shows that the Future Build scenario has slightly lower vibration levels, which is attributed to lower train speeds. Therefore, vibration control measures are not required during the operations/maintenance phase of Park Lawn GO Station.

5.7.2 **Mitigation Measures**

5.7.2.1 *Noise*

Construction BMPs will be utilized to minimize any adverse effects from construction noise at nearby sensitive receptors. Prior to construction, a Noise and Vibration Control Plan shall be developed and implemented to reduce the noise impacts at sensitive receptors. The following BMPs are recommended to minimize construction noise impacts:

- Whenever possible, construction activities will occur during the day instead of at night;
- If construction needs to be undertaken outside of the normal daytime hours, local residents and the City of Toronto will be informed beforehand of the type of construction planned and the expected duration;
- Keep equipment well-maintained and fitted with efficient muffling devices;
- Restrict idling of equipment to the minimum necessary to perform the specified work;
- Avoid unnecessary revving of engines and switch off equipment when not required;
- Coordinate “noisy” operations such that they will not occur simultaneously, where possible;
- Use rubber linings in chutes and dumpers to reduce impact noise, where possible;
- For reversing equipment, use automatic audible reversal broadband alarms instead of tonal alarms;
- Adjust site layout to minimize reversing. Apply drive forward in and out conditions where possible;
- Provide silencers on supply air ventilation fans for underground work;
- Minimize drop heights of materials; and
- Route haulage/dump trucks on main roads where possible, rather than on quieter residential roads.

Construction noise was assessed at two locations at 88-90 Park Lawn Road, represented by R06. These two locations correspond to the upper level residential units overlooking the future station, and to the OLA located on the northwest side of 88-90 Park Lawn Road.

At the upper dwelling units levels, sound levels at R06 are predicted to exceed the nighttime weekday and daytime weekend construction noise criteria. However, sound levels at R6

are predicted to remain below the daytime weekday criteria. As these dwelling units will be overlooking the construction site, temporary noise barriers cannot practically mitigate construction sound levels. Therefore, it is recommended that:

- The Construction Noise BMPs be implemented;
- To the extent possible, all noisy construction equipment be located on the north side of the platforms, when working west of Park Lawn Road;
- As part of the monitoring/verification plan recommended include noise monitoring at receptor R06;
- Construction be kept to the weekday daytime to extent possible; and
- Schedule noisy construction operations such that they will not occur simultaneously to extent possible.

At the OLA, sound levels at R6 are predicted to be within criteria despite potential modifications, including any openings of the existing noise barrier north of 86-90 Park Lawn Road. This is due to the existing retaining wall providing noise shielding.

No noise control measures are required during the operations/maintenance phases of Park Lawn GO Station.

5.7.2.2 *Vibration*

Best Management Practices listed below are to be implemented to possible extent to minimize disturbances to nearby residents.

Construction BMPs will be utilized to minimize any adverse effects from construction vibration at nearby sensitive receptors. Prior to construction, a Noise and Vibration Control Plan shall be developed and implemented to reduce the vibration impacts at sensitive receptors. The following BMPs are recommended to minimize construction vibration impacts:

- Substitute equipment generating high levels of vibration whenever possible. For example, smaller compactors could be used instead of a vibratory roller;
- Schedule construction activities that have the potential to generate high vibration levels to daytime hours;
- Whenever possible, plan haul routes to avoid residential areas;
- When deep foundation excavation, employ augured secant pile or similar techniques. Avoid shoring panel installation using vibratory or post impact methods; and
- Maintain access routes to avoid the formation of potholes.

To control and minimize construction vibration impacts at 88-90 and 96 Park Lawn Road, the following is recommended:

- West of Park Lawn Road, it is recommended that construction equipment operate at a minimum of eight metres away from the construction site perimeter to the extent possible;
- Vibration monitoring will be required during construction at 96 Park Lawn Road as this building falls within the construction vibration ZOI; and
- Pre-condition surveys are recommended at 88 and 90 Park Lawn Road as the construction vibration ZOI falls within this property.

Vibration levels were modelled using the General Vibration Assessment method. The vibration assessment shows that the Future Build scenario has slightly lower vibration levels, which is attributed to lower train speeds. Therefore, vibration control measures are not required during the operations/maintenance phase of Park Lawn GO Station

5.7.3 Monitoring

5.7.3.1 Noise

As per the Metrolinx Guidelines, 'Type 1' monitoring is required as construction will take place in an urban area, has the potential to last for more than 12 months, and nighttime construction activity may be required. 'Type 1' monitoring means continuous monitoring is required throughout construction. On this basis:

- Continuous noise monitoring is required on the north side of 88-90 Park Lawn Road as this property will be the most impacted by construction noise.

Furthermore, a Construction Noise and Vibration Monitoring Plan shall be prepared prior to the start of construction activities. From a construction noise perspective, this document should:

- Propose verification procedures related to the effectiveness of the above-noted mitigation measures and the execution of construction BMPs;
- Identify the proposed instrumentation and duration for noise monitoring at 88-90 Park Lawn Road;
- Propose procedures to follow when exceedances are identified; and
- Propose a complaint protocol, based on empirical data for the assessment of complaints.

Construction activities will be monitored by a qualified Environmental Inspector. Should the Environmental Inspector confirm the prescribed mitigation measures and/or best practices are not functioning as planned, revised mitigation measures and/or best practices designed to improve effectiveness will be implemented. The revised measures shall be reinstated as required in a timely manner.

Metrolinx and GO Transit have ongoing inspection programs to monitor and upkeep their equipment and infrastructure. Maintaining good working order of their property is

anticipated to reduce incidents of community exposure to excessive noise emissions. A complaints procedure is in place to address any concerns raised by neighbouring landowners, the City, or the public.

5.7.3.2 *Vibration*

'Type 1' monitoring is required as construction will take place in an urban area, has the potential to last for more than 12 months, and nighttime construction activity may be required. 'Type 1' monitoring means continuous monitoring is required throughout construction. Further, the construction vibration ZOI falls within the property at 88-90 Park Lawn Road, and within the building located at 96 Park Lawn Road. This is illustrated in Figure F-1, in Appendix G of this EPR. On this basis:

- A pre-condition survey by means of a photographic record should be undertaken on structures on the north side of 88-90 Park Lawn Road; and
- Continuous vibration monitoring is required on the north side of the building located at 96 Park Lawn Road.

Furthermore, a Construction Noise and Vibration Monitoring Plan shall be prepared prior to the start of construction activities. From a construction vibration perspective, this document should:

- Propose pre-construction consultations with the owners/occupants of the properties that fall within the ZOI, namely, 88-90 and 96 Park Lawn Road;
- Propose pre-construction measurements of background vibration levels within the ZOI;
- Propose a pre-condition survey by means of a photographic record of affected structure façades and all surfaces that fall within the ZOI, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, trees, signs, and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects will be photographed;
- Propose construction vibration monitoring procedures to confirm that the Prohibited Construction Vibrations limits are not exceeded;
- Identify the proposed instrumentation and duration for vibration monitoring;
- Propose procedures to follow when exceedances are identified; and
- Propose a complaint protocol, based on empirical data for the assessment of complaints.

Construction activities will be monitored by a qualified Environmental Inspector. Should the Environmental Inspector confirm the prescribed mitigation measures and/or best practices are not functioning as planned, revised mitigation measures and/or best practices designed

to improve effectiveness will be implemented. The revised measures shall be reinstated as required in a timely manner.

Metrolinx and GO Transit have ongoing inspection programs to monitor and upkeep its equipment and infrastructure. Maintaining good working order of its property is anticipated to reduce incidents of community exposure to excessive vibration emissions. A complaints procedure is in place to address any concerns raised by neighbouring landowners, the City of Toronto, or the public

5.8 Traffic and Transportation Infrastructure

5.8.1 Potential Effects

5.8.1.1 Near Term Horizon (2028) Transportation Conditions

Under the Near Term Horizon (2028), the Station is Projected to generate peak hour two-way ridership in the order of 1,050. For travel to/from the Station, the Projected ridership is Projected to result in the order of 315 local transit trips, 630 walking trips, 50 bicycle trips and 55 PUDO trips (110 two-way vehicle trips).

Key transportation network improvements which are being contemplated by other area studies and are assumed to be in place for the Near Term Horizon (2028), include:

- Construction of Public Street A between Park Lawn Road and Lake Shore Boulevard West;
- Partial construction of the 2150 Lake Shore internal road network;
- Construction of the Legion Road extension;
- Intersection improvements proposed as part of other area studies, necessary to support the Projected future background traffic;
- Construction of bus stops adjacent the Station, with additional bus services (bus route 80) to be rerouted to the Site area; and
- Construction of new and upgraded active transportation infrastructure along Park Lawn Road, Public Street A and through the partially constructed 2150 Lake Shore internal road network, providing multiple access routes to/from the Station.

With the road network improvements which are assumed to be in place for the Near Term Horizon (2028), it is Projected that future traffic can generally be adequately accommodated, albeit some capacity constraints are identified within the area. As the area continues to evolve, mode shifts, volumes and operations can be expected to continue to adjust, as is being addressed by the Park Lawn Lake Shore TMP. Notably, the number of vehicle trips Projected to be generated by the Station itself (110 two-way trips) is relatively low and subsequently, the impact of the proposed Station on the surrounding road network is expected to be minimal. No additional mitigating works are recommended.

Furthermore, the transit and active transportation improvements being contemplated by other area studies as discussed above which are assumed to be in place for the Near Term Horizon (2028) are expected to provide adequate transit, pedestrian, and bicycle access to the Station.

Transportation Facilities

Accessible PUDO is currently contemplated along Public Street A and within the 2150 Lake Shore Boulevard West development for general PUDO.

Pedestrian entrances to the Station will include an entrance from Station Square at the upper level of the Station building, entrances to the lower level of the Station on the north side of the rail corridor (accessible from Public Street A, and an entrance on the east side of Park Lawn Road, just south of the rail corridor. Secondary accesses to the rail platforms will be provided on the north and south side of the rail corridor, on the west side of Park Lawn Road.

At this time, a minimum of 192 covered bicycle parking spaces (generally located at-grade) are to be provided within the Station precinct. An additional minimum of 96 secured bicycle parking spaces are to be integrated into the 2150 Lake Shore development.

5.8.1.2 *Longer Term Horizon (2041)*

Transportation Conditions

Under the Longer Term Horizon (2041), the Station is Projected to generate peak hour two-way ridership in the order of 1,600. For travel to/from the Station, the Projected ridership is Projected to result in the order of 480 local transit trips, 960 walking trips, 80 bicycle trips and 80 PUDO trips (160 two-way vehicle trips).

Key additional transportation network improvements which are being contemplated by other area studies and are assumed to be in place for the Longer Term Horizon (2041), include:

- Completion of the 2150 Lake Shore internal road network;
- Construction of a new north-south road extending from the Lake Shore Boulevard West / Brookers Lane intersection to The Queensway. The Gardiner Expressway ramps which currently connect to Lake Shore Boulevard West are proposed to be realigned to connect to this new north-south street;
- Additional intersection and road improvements proposed as part of other area studies;
- Construction of streetcar stops adjacent the Station and streetcar tracks alongside the Public Street 'B' (Loop Road) within the 2150 Lake Shore; and
- Additional new and upgraded active transportation infrastructure along Park Lawn Road and Lake Shore Boulevard West, the new north-south street, The Queensway, and through the completed 2150 Lake Shore internal road network.

As previously discussed however, a detailed review of the Longer Term Horizon (2041) is being undertaken through other ongoing area studies, in particular the Park Lawn Lake Shore TMP and the Christie's Planning Study. These studies will ultimately review and estimate the future transportation demands of the area, including the proposed Station and the estimated population and employment numbers in the area, and subsequently determine the infrastructure to be delivered to support these transportation demands.

In a general sense, it is worth noting that as previously discussed, the Station is expected to operate as an urban station, primarily relying on walk, cycle, and transit trips to and from the Station from the substantial population and employment in the area. Vehicle trips associated with the Station are Projected to be minimal, in the order of 80 PUDO trips (160 two-way vehicle trips) and is not expected to have a significant impact on the operation of the surrounding road network.

Furthermore, the Station itself will significantly influence travel patterns in the area and has the potential to result in a notable shift in transportation mode splits in the area to reduce auto reliance and increase transit mode utilization. As such, on a broader scale, the Station itself is actually expected to reduce vehicle trips generally in the area.

Additionally, building upon the infrastructure assumed to be in place for the Near Term Horizon (2028), further transit and active transportation improvements being contemplated by other area studies as discussed above are expected to be implemented by the Longer Term Horizon (2041). This infrastructure is expected to provide adequate transit, pedestrian, and bicycle access to the Station in the Longer Term Horizon (2041).

Transportation Facilities

It is anticipated that a large percentage of station passengers will arrive by non-auto means as a large percentage of the station watershed will be able to walk, cycle or arrive by transit. A well-connected pedestrian and cycling network would be constructed, and provide passengers with safe, direct means of travel to / from the station.

Accessible PUDO is currently contemplated along Public Street A and within the 2150 Lake Shore Boulevard West development for general PUDO. Pedestrian entrances and bicycle parking facilities in the Longer Term Horizon (2041) will remain consistent with the Near Term Horizon (2028).

5.8.2 Mitigation and Monitoring

Construction of the proposed Park Lawn GO Station will feature various independent elements, including the north station building, the south station building, a tunnel connecting the two station buildings, the Park Lawn rail bridge widening, and the north and south elevator pavilions.

Throughout all stages of construction, the Project team will be committed to reducing impacts on the pedestrian, cyclist, vehicular, and rail traffic. This includes but is not limited to implementing traffic control plans, utilizing traffic control devices, undertaking public

information campaigns, developing worker safety plans, and continuous monitoring and review of these elements.

To reduce the level of violations in the PUDO area, increased parking enforcement may be necessary.

5.9 Slope Stability Analysis

5.9.1 *Potential Effects*

The existing retaining wall at the toe of the western extent of the railway embankment was repaired in 2017; however, it cannot be relied upon to support the slope over the design life of the proposed construction of the passenger platform. The retaining wall, as noted in Section 4.9, is susceptible to scour and erosion due to the water flowing in Mimico Creek.

The existing retaining wall is intended to stabilize the railway embankment and the Mimico Creek rail bridge west of the west end of the proposed GO Station platform. As part of Metrolinx's rail operations, maintenance and obligations under Transport Canada, the Mimico Creek Bridge and adjacent banks are inspected annually and a report is generated. The tracks are also inspected at least twice a week. Although these inspections are not specific to the creek embankments, any erosion or other issues are reported.

The potential failure mechanisms for the retaining wall are directly related to the conclusions drawn from the Fluvial Geomorphology and Meander Beltwidth Assessment, in Appendix J of this EPR. The failure mechanisms can be described as:

- Bearing capacity failure due to the loss of foundation soils due to erosion;
- Overturning of the wall due to scour and erosion of the retaining wall's foundation soils; and
- Sliding due to the loss of support provided by the weight of soil on the assumed cantilevered portion of the retaining wall, which is provided by the soil directly behind the wall.

These potential failure mechanisms lead to the assumption that the retaining wall cannot be relied upon to provide support for the station platform. It should be noted that any failure of the existing retaining wall would lead to detrimental impacts to the stability of the station platforms and railway embankment. This is the driving factor in proposing the use of a rigid retaining wall to support the proposed passenger platform.

The loss of the existing retaining wall on the proposed construction is expected to be negligible, as the proposed rigid retaining wall will be designed to be independent of any support of the slope retained by the existing retaining wall. The loss of the existing retaining wall would likely lead to a failure mass entering the waterway of Mimico Creek, but there would be no impact on the stability of the proposed retaining wall and the proposed passenger platform.

5.9.2 *Mitigation Measures*

The proposed passenger platform would be constructed along the northern edge of the existing rail alignment and be 5.021 m wide along the majority of its length. The platform is proposed adjacent to the proposed GO Station as indicated on Figure D-1 of the Slope Stability Report, in Appendix I of this EPR, where the proposed station footprint intersects Section C-C'. Although this platform section was not considered in the Slope Stability Analysis discussed above, the adjacent embankment slopes can be regraded to accommodate the wider platform as the existing slope in this area is inclined at approximately 2.75H:1V. Regrading can be completed to accommodate the wider platform and provide a slope angle of no more than 1.8H:1V, which is the assessed stable slope angle to accommodate a suitable LTSTOS.

Use of the retaining wall limits the encroachment into the Mimico Creek valley system and keep any fill outside of the TRCA's regulatory flood limit. The following design requirements should be considered in the design of the proposed rigid retaining wall:

- Independence of the wall from lateral support from the soil retained by the existing retaining wall (passive resistance);
- The live and dead loads from the construction of the proposed passenger platform will be carried by the proposed retaining wall, which will be designed as a non-yielding wall; and
- Embedment of the wall into the rock mass to a depth that will provide an adequate level of overturning resistance.

The Slope Stability Analysis assumed a nominal embedment depth of one metre; however, this does not indicate in any way what the minimum embedment depth should be, as discussed below.

The retaining wall considered for the Slope Stability Analysis utilizes material properties that will not allow a sliding surface to form that goes through the wall. This then pushes the critical sliding surface to form below the base of the wall, which requires the critical sliding surface to pass through the rock mass.

The limit equilibrium method does not estimate any deformations that would be required to assess the design of the proposed wall. The lack of deformations with the limit equilibrium method then treats the proposed wall as a perfectly rigid element in the model, which meets the design requirements discussed in the preceding section.

This assessment is based upon the 10 percent design for the EA. Development of the retaining wall design will be progressed as part of the detailed design of the GO Station in consultation with the TRCA and Metrolinx.

The proposed new retaining wall and infrastructure ownership would be conveyed to Metrolinx once the new structures are commissioned. The long-term operation, surveillance, and maintenance of the new structures will be the responsibility of Metrolinx.

Site grading should be designed to divert all surface run-off away from the existing tracks, for example by land drainage ditch, and to reduce the saturation of the foundation materials. If the installation of ditch is not feasible due to land constraints, a design for subsoil drainage should be considered.

Vegetation cover and tree roots on the existing slopes should be maintained in order to minimize soil erosion at the slope surface.

Positive surface drainage should be provided to collect surface run-off and divert water away from the Site. Any standing water, ponding and saturated soil conditions should be avoided to minimize the risk of embankment settlement.

The surface water collected on the constructed surfaces at the top of the existing embankment should be directed to the local stormwater conveyance system, within the property of the north station building, or within the 2150 Lake Shore Development, to be confirmed during detailed design. This could require the need for a detention system to attenuate the additional flow to the stormwater conveyance system.

The preceding recommendations should be followed for where the pavilion and elevator/stairs, as well as sloped walkway will be constructed at the west end of the proposed new passenger platform. This includes during and post-construction. Any ground disturbance should be protected with erosion and sediment control mitigation measures. Where disturbed ground will be reinstated as a soil slope adequate vegetation should be reinstated to promote slope stability. Recommendations for types and amount of vegetation will be provided and reviewed by agencies as required at detailed design.

Metrolinx is committed to protecting infrastructure supporting rail operations.

Metrolinx observes the condition of the toe wall at Mimico Creek on route to the annual bridge inspection of the rail carrying bridge and wingwalls. Any imminent failures would be reported and repair options assessed.

An inspection report for the retaining wall structures at Mimico Creek is completed on a five-year cycle. If observations during the five-year inspection reports point to maintenance or repairs, Metrolinx will assess best methods to stabilize the retaining wall and/or slope.

5.10 Geomorphology

5.10.1 Potential Effects

In the RGA, Mimico Creek was assessed as “Transitional” due to the erosion found on the east bank and in the scour pool, alongside the slumping armourstone. In the RSAT, Mimico Creek was assessed as “Good” due to the lack of significant sediment deposits, the good riparian buffer, and the channel diversity. However, recent erosion was noted which is a primary cause of the score not being higher.

The results from the Erosion Rate calculation can be seen in Table 5-8. This 100 year erosion rate is for a natural creek with no retaining wall or gabion basket.

Table 5-8: Erosion Rate calculation for Mimico Creek. Final 100-year erosion rate is 5.8 m/100-yr.

Measurement Point	Mitigation Distance (1992 2019) (m)	Erosion Rate (m/yr)	100 Year Erosion Rate (m/100 yr)
1	1.3	0.05	5.1
2	1.4	0.05	5.4
3	1.8	0.07	6.9

However, and as can be seen on the air photos, there is a concrete/gabion retaining wall located immediately downstream of the bend. This wall has been in place for many years. Assuming the retaining wall is placed on solid foundation and maintained indefinitely, the creek should move 0 m/year. It is further assumed that there would be no erosion at that location given that the wall would be subject to maintenance (given the presence of the railroad tracks and related infrastructure on the top of the slope).

It is important to note that the erosion rate of 5.8 m/100-yr is based on the bank in question not being armoured, and with no additional slope stabilization methods being enacted. If the retaining well is built on strong foundation and maintained regularly, there should be no erosion along those sections.

Scour of the slope behind the existing concrete retaining wall could also occur during high flows. However, based on the 2017 Beacon Report, a 100 year flood event would flow just below the top of the retaining wall. Thus, even during high flow events, the retaining wall should protect against major erosion of the stable slope.

Based on the desktop and field assessment, two scenarios exist:

- Continue to maintain the existing gabion basket and concrete retaining walls and armourstone revetment; or
- Realign Mimico Creek away from the existing stabilization infrastructure into the wooded area.

The first solution for both the health of the creek and to avoid disturbing a natural area in what is otherwise a highly urbanized environment. In addition, there is limited space to work with to the west of the watercourse as there are several condo towers that require consideration in any movement of Mimico Creek.

Due to the existing erosion rate, a creek realignment could alleviate the current erosion risk at the location of the existing retaining wall. The creek would be moved westwards slightly and the area adjacent to the armoured and retaining wall slope would be backfilled, resulting in fewer erosive forces against the base of this infrastructure, with small modifications upstream from the slope to reduce the radius of curvature and prevent the backfilled area from being continually washed out.

5.10.1.1 *Hydrologic Alterations*

Stream flow changes could be expected due to the following hydrologic alterations, specifically 1) alterations to upstream hydrology due to increased development or impervious cover; and 2) climate change. Either possibility may result in increased frequency of high flows, increased frequency of runoff events, and increased runoff volumes. It is assumed that there would be minimal impact on site conditions and Water's Edge notes the following:

- The floodplain in the vicinity of the subject site is relatively broad. Any increase in flows would only result in a marginal increase in flood depths. As such, only marginal increases in tractive shear forces can be expected;
- As flows increase, the flows will tend to flow over the point bar located on the right bank, and not directly at the left banks; and
- Rivers are natural systems that change their dimension (cross section), pattern (sinuosity) and profile (slope) as well as the riparian corridor over time and will react naturally to slow changes over time. Given that the outside bend slopes are protected, changes will be minimal in this location. Any natural adjustments would be very gradually realized on the opposite bank.

5.10.2 **Mitigation**

It is critical that the retaining walls are inspected regularly and repaired as required based on inspection results. If the walls are left to weaken, it could result in significant erosion and damage to the rail line during a high discharge event.

The 100-year floodline is below the top of the concrete wall. Should further hydrological alterations result in increased flows, it would be necessary to provide rip rap treatment or a bioengineering solution above this elevation. Should there be evidence of hydrologic alterations, due to either increased upstream imperviousness and/or climate change, it is recommended that the frequency of monitoring be increased.

Metrolinx welcomes future discussions related to Mimico Creek with Curve Lake First Nation. Should restoration be required, excluding emergency works, Curve Lake First Nation will be asked to review restoration plans.

5.11 **Climate Change**

This section outlines how climate change considerations were taken into account in the environmental assessment and design of the Project. The following sections describe how the TPAP for the new GO Station incorporates the MECP's guidance for considering climate change in EAs, with a focus on climate change mitigation and adaptation, as summarized in Table 5-9.

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

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

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

The term “climate change” can apply to any major variation in temperature, wind patterns or precipitation that occurs over time. Changes in the composition of the atmosphere are resulting in processes that alter global temperature and precipitation, and are affecting local weather patterns. These processes can ultimately lead to increased occurrence of extreme weather events such as floods, droughts, ice storms and heat waves across the GTHA (Metrolinx, Planning for Resiliency: Towards a Corporate Climate Adaptation Plan, 2017d).

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

Section 5.11.1 outlines the policy context which guides how climate change has been considered in the planning of this Project. Given the relatively small effects of the Project on climate change, and Metrolinx's extensive existing guidance on how to build and operate the stations considering future extreme weather events, reference to existing climate change strategies and policies was judged to be sufficient in considering climate change in the TPAP.

Sections 5.11.2 (mitigation) and Section 5.11.3 (adaptation) describe how these considerations are being implemented in Project planning and design.

5.11.1 Policy Context

The Government of Ontario has committed to reducing GHG emissions by 30% below 2005 levels by the year 2030 (MECP, 2018).

To achieve these targets, the government has developed a Climate Change Strategy (Government of Ontario, 2015) and Climate Change Action Plan (Government of Ontario, 2016) which outline the following five areas of focus:

- A prosperous low-carbon economy with world-leading innovation, science, and technology;
- Government collaboration and leadership;

- A resource-efficient, high-productivity society;
- Reducing GHG emissions across sectors; and
- Adapting and thriving in a changing climate.

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

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

The 2020 PPS (Ministry of Municipal Affairs and Housing, 2020), promotes transportation developments that increase active transportation and transit before other modes of travel, and advises on the need to consider reducing GHG emissions and reducing the potential risk of climate change-related events like droughts or intense precipitation. It encourages green infrastructure and strengthens SWM requirements; energy conservation and efficiency; reduced GHG emissions; climate change adaptation (i.e., tree cover for shade and for carbon sequestration); and consideration of the increased risk associated with natural hazards (i.e., flooding due to severe weather).

Applicability to the Project

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

Since the Project will be operational for the foreseeable future, there is a need to consider both their operational impacts to climate change, as well as how they will be affected by future climate change-related events such as droughts or intense precipitation. This includes consideration of most of the aspects highlighted in the PPS, including: green infrastructure; SWM; energy conservation and efficiency; GHG emissions; vegetation/carbon sequestration; and resiliency to natural hazards such as flooding. Specific measures related to these aspects are further discussed in Sections 5.11.2 and Section 5.11.3.

5.11.1.1 Ministry of the Environment, Conservation and Parks

The MECP has prepared a guide titled *Considering Climate Change in the Environmental Assessment Process* (MOECC, 2017), to describe how EA processes can incorporate consideration of climate change impacts, including:

- The effects of a Project on climate change;
- The effects of climate change on a Project; and

- Various means of identifying and minimizing negative effects during Project design.

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

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

Applicability to the Project

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

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

Since the Project will be operational for the foreseeable future, it will likely be affected by future climate change-related events such as droughts or intense precipitation. As a result, the GO Station needs to be designed and operated with these future events in mind. The Project will continue to take climate change considerations into account as the design progresses.

Table 5-9: Consideration of Climate Change Prior to EPR and in the TPAP Phase

Recommendation	Section(s)
	• Section 5.11.2.2 (greenhouse gas emissions) • Section 5.11.2.3 (impacts on carbon sinks) • Section 5.11.3 (climate change adaptation)

Recommendation	Section(s)
The ministry expects proponents to take into account: - The Project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation) - Resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation) - The proponent should also include a discrete statement in their study report detailing how climate change was considered in the EA. - Proponents of natural resource related Projects should consult Appendix B (of the Guide) for treatment of carbon stocks as sinks versus sources. Proponents should include evaluation criteria, such as greenhouse gas emissions and impacts on carbon sinks, in the assessment of alternatives and alternative methods.	- Section 5.11 - The Project is not natural resource related, so this is not applicable. The TPAP does not include an assessment of alternatives or alternative methods, so this not applicable.
In concluding an environmental assessment study, the proponent should also include a statement in their study report about how climate change was considered in the environmental assessment and how the preferred alternative (Project) is expected to perform with climate change considered.	Section 5.11.2
Proponents should include evaluation criteria such as extreme weather events in their screening of alternatives, and alternative methods.	The TPAP does not include an assessment of alternatives or alternative methods, so this not applicable.
Proponents should also include in their study report, a statement about how climate change was considered in the EA, specifically in relation to the preferred alternative (Project).	The TPAP does not include an assessment of alternatives or alternative methods, so this not applicable.
All climate parameters with potential to interact with a Project should be defined and considered at a screening level to fully understand which interactions pose higher risk.	Section 5.11.3
Proponents should also document any uncertainty related to either downscaling climate change Projections to specific sites, or expected impacts to the environment or Project, within the EA.	Metrolinx is moving towards using downscaling Projections as described in its <i>Planning for Resiliency</i> report (Metrolinx, Planning for Resiliency: Towards a Corporate Climate Adaptation Plan, 2017) to inform decisions regarding planning, construction, and operations of infrastructure. This considers adaptation to climate change across all infrastructure assets, including existing and future stations.
Considering climate change in the terms of reference for an EA should commit the proponent to considering climate change impacts in related	The TPAP does not include a term of reference, so this is not applicable.

Recommendation	Section(s)
Project studies prepared in support of the EA report.	
Considering climate change in an EA should result in the proponent refining and documenting measures for dealing with climate change impacts as the undertaking moves toward implementation stage. Examples could include adapted design or maintenance schedules, additional studies, and revised operating procedures.	Section 5.11.3.2.1
Considering climate change in streamlined EA processes and studies could result in the inclusion of a commitment on how the proponent will implement climate change adaptation and mitigation measures during the detailed design phase of any given Project.	Section 5.11.2.3 Section 5.11.3.2
Proponents should consider whether making reference to existing climate change strategies or policies alone is sufficient as a consideration of climate change, or whether a more detailed consideration of climate change should be carried out when conducting Project-specific environmental assessment studies. Documentation of the results of this consideration should be included as part of Project reporting.	Section 5.11.2

5.11.1.2 Metrolinx

Metrolinx's Regional Transportation Plan (RTP) (2041) outlines the long-term Projects, plans, and activities Metrolinx will deliver to support reduction of Ontario's overall GHG emissions by promoting a shift from single occupant vehicles to more energy-efficient options like public transit, walking, cycling, carpooling, and teleworking (Metrolinx, 2018b).

Metrolinx is committed to ensuring that the existing transit network and new transit facilities/infrastructure will have a low-carbon footprint¹³ and contribute to a clean and healthy environment for future generations (Metrolinx, 2016b). Metrolinx has outlined key climate change goals in its Sustainability Strategy (2015 - 2020) (Metrolinx, 2016b). The Sustainability Strategy addresses climate change through five goals, which are:

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

¹³ A carbon footprint is the total greenhouse gas emissions attributed to a body (i.e., person, facility, or event) expressed as CO₂e. CO₂e is a standard unit for measuring carbon footprints, as a way to express the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same amount of warming.

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

For GO Stations, terminals, and facilities, including the Project, Metrolinx generally requires that contractors adhere to the DRM (Metrolinx, 2017c). The DRM outlines the Guiding Principles and technical details for designing and building GO infrastructure. The DRM covers a number of areas directly and indirectly related to climate change adaptation and mitigation, including SWM, energy consumption and emissions, and vegetation.

Also included in the DRM is how infrastructure should target Leadership in Energy and Environmental Design (LEED) credits to reduce GHG emissions, as per Canada Green Building Council standards.

Metrolinx has recently released Sustainable Design Standards (February 2021), to ensure that sustainability is implemented throughout the design process, as well as to ensure that Metrolinx facilities are 'practical, durable and reliable' (Metrolinx, 2021). The objective of the Sustainable Design Standards are to ensure that all buildings and facilities are cost efficient and have high life cycle sustainability performance (Metrolinx, 2021).

Applicability to the Project

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

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

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

The design team will reference the Sustainable Design Standards as the design progresses.

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

As indicated in 5.11.1.1, the effects of the Project on climate change (mitigation) have been evaluated both quantitatively (for GHG emissions) and qualitatively (for transit planning, vegetation compensation/revegetation, and energy consumption/emissions).

5.11.2.1 Planning for Transit

Public transportation is a beneficial service that can reduce traffic congestion and reduce the need for new road infrastructure, as well as reduce carbon emissions and air quality concerns associated with automobile use. Improvements to transit will decrease average transit trip times in the GTHA, even with an increasing population, leading to more people using public transportation and fewer vehicle-kilometres travelled in congested conditions. This reduction in congestion, when combined with expected improvements in automobile fuel efficiency, will result in a decrease in per capita GHG emissions from automobile trips (Metrolinx, 2018b).

It is anticipated that the introduction of this new GO Station, along with proposed TTC changes and adjacent high-density development will promote the use of public transportation, thereby decreasing congestion and improving per capita GHG emissions.

5.11.2.2 Greenhouse Gas Emissions

Greenhouse Gas/Climate Change analyses were undertaken as part of the AQIA for the GO Station, to evaluate the local impacts to air quality (see Section 5.6) and Appendix F of this EPR for GHG). The assessment considered the effect of diesel locomotives in a No-Build and Build scenario to account for the change in emissions due to the future Lakeshore West level of service stopping at the proposed Park Lawn GO Station. Comparing the local CO₂eq emissions in the Study Area between the two scenarios show an increase for the Future No-Build (when compared to existing conditions) and Future Build scenarios (when compared to the Future No-Build scenario). The difference with the Build scenario when compared to the No-Build scenario is each train slowing down and then accelerating away from the station represents an increase in 2.5 tonnes of CO₂eq emissions per day, for an estimated increase of 919 tonnes per year.

Nevertheless, as electrification of the rail network is anticipated, the GHG emissions generation is expected to decrease significantly over time. In fact, the GO Rail Network

Electrification TPAP Environmental Project Report released by Metrolinx (Metrolinx, 2017) quantified the GHG emissions from the electricity generation required to power the electric trains within the GO Transit network based on the future train volume prediction. The GHG emissions associated with electricity consumption are not incurred on site through an internal combustion engine on the prime mover, they are incurred at the location of electricity generation. Greenhouse gas emissions from electric locomotives depend on the relevant mix of electricity generation, which is commonly assumed to be the provincial electricity generation mix. As the electrification of the network will take place, the GHG emissions in the vicinity of the Park Lawn GO Station will decrease. Locally, the construction of the Park Lawn GO Station should also (e.g., increase in trains volumes) result in less cars on roadways, as they are replaced by trains carrying more passengers, which decreases overall GHG emissions from a provincial and/or regional perspective.

5.11.2.3 *Vegetation Compensation and Revegetation*

As noted in the TIP (Appendix B), the construction of the GO Station will require the removal of trees and vegetation, which will result in a temporary loss of an existing carbon sink within the local environment.

The Metrolinx Vegetation Guideline (2020) apply to this Project. Vegetation that will be removed will be compensated for in accordance with the provisions of this protocol.

Revegetation of disturbed areas will take place as soon as possible. Post-planting monitoring of restoration areas will occur for two years after installation to confirm survival of plantings and/or seed mix. Should the plantings and/or seed mix not survive, additional seeding and/or plantings will be undertaken one year thereafter with one additional monitoring visit in the following growing season.

Additionally, the DRM requires that plant materials suitable to the growing environment at Project sites be selected for vegetation/revegetation, and that species (native species only with preference towards species that support pollinators) must be hardy, drought and salt-tolerant, and resistant to the stresses of compacted soils and weather exposure.

5.11.2.4 *Energy Consumption and Emissions*

Through the DRM, Metrolinx targets LEED credits that reduce GHG emissions and improve energy performance and refrigerant management¹⁴. Specifically, the DRM directs that the GO Station is designed to reduce energy consumption and emissions by considering measures such as:

- Applying passive means of reducing energy where it does not conflict with other customer service and operational design requirements;
- Maximizing the use of natural light coupled with photocells, motion sensors and controls to activate lighting when necessary (enhanced building automation controls).

¹⁴ Some air-conditioning refrigerants are powerful GHGs.

where it does not conflict with other customer service and operational design requirements;

- Using LED lighting; and
- Using heat recovery to conserve energy for heating and cooling.

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

It is recognized that climate change is already underway and can be anticipated to affect the construction and operations of the Project. There is general agreement that the Great Lakes Basin will see increases in temperature, precipitation, drought, wind gust events, and freezing rain by the end of this century; however, the level of confidence and quality of supporting evidence for these Projections vary considerably (Metrolinx, Planning for Resiliency: Towards a Corporate Climate Adaptation Plan, 2017d). Table 5-10 shows the current consensus predictions for climate change in the Great Lakes Basin.

Table 5-10: Climate Change Projections for the Great Lake Basin¹

Theme	General Projections	Trend	Data Confidence
Air temperature	• 1.5°C-7°C increase by 2080s depending on climate scenario and model used • Greater increases in the winter • Increased frost-free period and growing season	↑	High evidence High agreement
Precipitation	• 20 percent increase in annual precipitation across the Great Lakes Basin by 2080 under the highest emission scenario • Increases in rainfall, decreases in snowfall • Increased spring precipitation, decreased summer precipitation • More frequent extreme rain events	↑	High evidence Medium agreement
Drought	• Projected increases in frequency and extent of drought	↑	Low evidence High agreement
Wind	• Increased wind gust events	↑	Low evidence Low agreement
Ice storms	• Greater frequency of freezing rain events	↑	Low evidence Low agreement

¹Source: (McDermid, et al., 2015)

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

The design team will undertake a Climate Change Risk and Vulnerability Assessment as the design progresses.

5.11.3.1 *Air Temperature*

Recognizing increasing summer temperatures, the DRM considers reducing effects of extreme heat on riders and the GO Station. Specifically, the DRM indicates that the GO Station design will:

- Consider building material selection to limit absorption of solar radiation;
- Maximize shade along pedestrian routes; and
- Reduce the urban heat island effect through plantings, selection of building materials and proactive shade management.

5.11.3.2 *Precipitation*

Precipitation, whether it is rainfall, snowfall, or other forms of frozen/liquid water, is the key climate and weather-related variable of concern in SWM. As a result of climate change, storm events are predicted to become more intense in the GTHA, which can result in larger volumes of precipitation at one time (see (McDermid, et al., 2015) as outlined in Table 5-10).

5.11.3.2.1 Stormwater Management

The SWM design for the Project will consider the drainage and SWM objectives of the MECP Stormwater Management Planning and Design Manual (2003), MTO Drainage Management Manual (2008), TRCA Stormwater Management Criteria (2012), and Metrolinx Sustainable Design Standards (2021) among other guidance. This will be supplemented by current guidance such as the runoff volume control targets for Ontario recommended to MECP (Aquafor Beech Ltd. and Earthfx Inc., 2016) from local municipalities and conservation authorities.

A detailed SWM Plan will be developed prior to the construction phase of the Project so that runoff from rainfall is controlled based on predicted future scenarios, to promote climate resilience. Future increased rainfall intensities, and consequently increased runoff, will be predicted using precipitation Intensity-Duration-Frequency (IDF) curves, such as those found in the MTO IDF Curve Lookup Tool. These can be incorporated into the SWM design of the Project once the design life of the station is determined.

Intensity-duration-frequency curves are graphical representations of the amount of precipitation that falls within a given period of time in catchment areas and are used by decision makers to plan and design infrastructure to withstand severe weather impacts (Office of the Auditor General of Canada, 2016). Current SWM practices include the use of IDF data and design storm distributions (i.e., Chicago Storm, Hurricane Hazel), as well as two-year through to 100-year¹⁵ storm events.

¹⁵ Storm even frequency is used to simplify the definition of a rainfall event that statistically has a chance of occurring once within the given time period (i.e., a 100-year storm has a 1 in 100 (1%) probability of occurring in any given year.

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

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

Oil-grit separators¹⁶ and stormwater management features must be sized appropriately to manage predicted future scenario flows and sediment loading (i.e., winter and spring).

5.11.3.2.2 Erosion and Sediment Control Measures

An increase in storm intensity, which is Projected as a result of climate change (see Table 5-10), can make erosion and sedimentation more likely, especially during construction. Erosion and Sediment Control (ESC) measures including the development of an ESC Plan, will be implemented during the construction phase of the Project to ensure stormwater runoff is controlled and sediment is prevented from entering sewers and watercourses. The ESC Plan, which follow the Erosion and Sediment Control Guideline for Urban Construction, December 2019, will be developed as part of the O. Reg. 166/06 application to detail the mitigation measures required during construction. Installation and monitoring of appropriate ESC measures will help mitigate potential effects of climate change on the Project.

5.11.3.2.3 Flow Alterations

Changes to precipitation intensity and duration as a result of climate change may impact stream flow and cause hydrological alterations. This could include an increased frequency in high lows, increased frequency of runoff events, and increased runoff volumes. While impacts to site conditions are assumed to be minimal, should there be evidence of hydrologic alterations due to climate change, the frequency of monitoring will be increased.

5.11.3.3 Drought

As summarized in Table 5-10, the Great Lakes Basin is Projected to see increases in frequency and extent of drought. GO Station design, in pursuit of LEED certification as required by the DRM, will include consideration of water conservation measures to reduce effects of drought on the Project, such as:

- Metering indoor and outdoor water use to better track and manage the impacts of extended droughts on operations and landscape plantings;
- Using water conserving systems to reduce consumption; and
- Planting drought resistant vegetation.

¹⁶ Oil grit separators are underground devices designed to protect waterways from hazardous material spills and stormwater pollution.

5.12 Impact Assessment, Mitigation and Monitoring Plan Summary

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Natural Environment - Pre-Construction / Construction			
Soils	- Erosion; - Soil Compaction; - Soil Mixing; - Drainage Alterations; - Bank Degradation; - Habitat Impacts; and - Soil Contamination (from spills or other deleterious substances transported during erosion).	- Retain existing vegetation within the Study Area to the extent practicable to reduce soil erosion. Vegetation removal will be kept to a minimum, limited to within the construction disturbance area. Areas for vegetation removal will be refined during detailed design, if required (e.g., change in construction disturbance area, final staging areas); - A Soil Management Plan (SMP) as defined by Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19) will be prepared by a Qualified Professional as defined in Ontario Regulation 153/04: Records of Site Condition (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for managing soil materials on-site (includes excavation, location of stockpiles, reuse, and off-site disposal); - Erosion and Sediment Control drawings, including TRCA Standard Notes (http://www.trca.on.ca/dotAsset/93458.pdf), and a report (ESC Plan) which follow the Erosion and Sediment Control Guideline for Urban Construction, December 2019, will be developed as part of the O. Reg. 166/06 application to detail the mitigation measures required during construction. The ESC measures will be implemented prior to Project construction and maintained during the construction phase in accordance with an ESC Plan. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed; - Disturbed areas within the construction site will be stabilized and re-vegetated as soon as conditions allow; - The ESC measures will be left in place until disturbed areas within the construction site have been stabilized and will then be removed; - Wet weather restrictions shall be applied during site preparation and excavation; - Deleterious substances (including stockpiled material) will be used and stored in a manner that prevents any of the substances from entering a natural feature (at least 30 m away from Mimico Creek); - 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. 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	The TRCA will be engaged during detailed design in order to determine the scope of an Environmental Monitoring and Contingency Plan (EMCP) in accordance with TRCA Standards. The EMCP will be included as part of the O. Reg. 166/06 application package to be prepared during detailed design. A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained, and enforced. The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone. Workers will report any instances of spills to their supervisors.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		on-site at all times during the work. Spills will be reported to the Ontario Spills Action Centre at 1-800-268-6060; - Refueling is to occur at least 30 m from a watercourse; if this distance cannot be maintained, a spill tray is to be placed under the fueling point; - During operation, any major maintenance work that would result in the replacement or upgrade of major infrastructure components requiring earth-moving will be conducted in accordance with the applicable mitigation measures listed under the construction phase; and - An Emergency Response and Communications Plan will be developed and followed throughout the operations and maintenance phase (includes spill response and contingency plans).	
Landforms, Topography and Geology	Mass movement.	A detailed slope stability analysis was completed in order to assess the potential impacts of the proposed station platforms on the bank stability along Mimico Creek. Mitigations measures and recommendations are included in the geotechnical report (Hatch, 2021).	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Changes in channel morphology.		
Groundwater	Effects to Groundwater Quality from Contamination.	- Mitigation measures for erosion and sediment control will be sufficient to mitigate any potential contamination of groundwater. A detailed ESC Plan will be prepared during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed; - A site-specific Dewatering Management Plan shall be followed in order to determine groundwater levels and aquifer recharge rates to mitigate any impacts to groundwater quantity; - Stormwater management for the Station will be designed to meet the standards set forth in the Toronto Green Standard (City of Toronto, 2019) and the TRCA's stormwater management criteria (water quantity, water quality, erosion control and water balance for groundwater and natural features). The SWM report will be included as part of the submission for the O. Reg. 166/06 application package to be prepared during detailed design; - All requirements under the <i>Ontario Water Resources Act</i> (OWRA), R.S.O. 1990, c. O.40 with respect to water taking, management and discharge to the quality of water discharging into natural receivers will be met, including the following mitigation measures and best practices: - Approval of water takings in accordance with the MECP Permit to Take Water process or within the EASR framework; - Any discharge from dewatering will be discharged to a City of Toronto sewer in accordance with the applicable City of Toronto Sewer Use By-law; and	A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained, and enforced. An Environmental Inspector will be on-site during any dewatering within 120 m of natural features. The Environmental Inspector will confirm that the filter bag is working appropriately and that no sediment is entering significant natural features. The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone. Workers will report any instances of spills to their supervisors.
	Loss of Groundwater Quantity from the Highly Vulnerable Aquifer.		

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		▪ Ongoing engagement/consultation with CTC source protection authority during detailed design to confirm mitigation measures based on Highly Vulnerable Aquifer (HVA).	
Watercourses, Hydrological Features and Aquatic Environment	Water quality degradation.	• Mitigation measures for ESC, bank stability and spills will reduce impacts to hydrological features and aquatic habitat on site. A detailed ESC Plan will be prepared during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed; • Stormwater management for the Station will be designed to meet the standards set forth in the Toronto Green Standard (City of Toronto, 2018) and the TRCA's stormwater management criteria (water quantity, water quality, erosion control and water balance for groundwater and natural features). The SWM report will include a water balance for the site. The SWM report will be included as part of the submission for the O. Reg. 166/06 application package to be prepared during detailed design; • In-water work must occur from July 1 to March 31 of any given year due to the warmwater classification of the watercourse in order to avoid sensitive life stages such as migration, spawning and rearing; • If in-water work will occur during construction, the area will be isolated using cofferdams and dewatered in accordance with a Dewatering Plan prepared during detailed design; • Fish removals will be conducted by qualified biologists in isolated areas prior to dewatering. All fish will be enumerated and reported in accordance with the MNRF. A Licence to Collect Fish for Scientific Purposes will be obtained from the MNRF if fish relocations are required; • Fish will be released unharmed into suitable habitat downstream of the work area; • If an invasive species is encountered during the fish relocation it will be euthanized and removed from the watercourse in accordance with MNRF conditions; • The work area shall be delineated and workers shall be made aware of the limits to construction activities; • Heavy machinery or equipment requiring fuel shall be stored at a minimum of 30 m from the watercourse; • Where feasible, site preparation shall be phased for the winter months to avoid impacts to aquatic wildlife in the summer months; and • Riparian vegetation removal shall be kept at the minimum required for construction.	The TRCA will be engaged during detailed design in order to determine the scope of an Environmental Monitoring and Contingency Plan (EMCP) in accordance with TRCA Standards. The EMCP will be included as part of the O. Reg. 166/06 application package to be prepared during detailed design. A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained, and enforced. An Environmental Inspector will monitor dewatering occurring within 120 m of natural features. The Environmental Inspector will confirm that the water treatment is working appropriately and that no sediment is entering significant natural features. The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Loss of Riparian Habitat.		
	Loss of Aquatic Habitat.		
	Flow alterations.		
Terrestrial Environment	Loss of vegetation communities from tree clearing, site preparation and grading.	• A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures; • Removal of trees and shrubs shall be completed mechanically;	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		- In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be required to clear vegetation. Any herbicide applications to clear vegetation within the corridor ROW will be applied in accordance with industry BMPs and regulations including TRCA requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas; - Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto and TRCA permitting processes; - Any tree clearing or limb trimming will be limited to that required to meet necessary safety clearances; and - Trees will be trimmed by a Qualified Professional arborist to limit tree damage.	properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Proliferation of Invasive Species.	- An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan will include site specific techniques and procedures outlining the removal and transportation of invasive species; - Disturbed areas within the construction site will be revegetated as soon as conditions allow; - Any equipment will be thoroughly cleaned prior to entering the site and when being transported between sites. Equipment cleaning must occur at least 30 m from Mimico Creek; - If an invasive species is removed, the species will be disposed of appropriately in an off-site location; - A Soil Management Plan (SMP) as defined by Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19) will be prepared by a Qualified Professional as defined in Ontario Regulation 153/04: Records of Site Condition (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Geoscientist license) for managing soil materials on site (includes excavation, location of stockpiles, reuse, and off-site disposal); - In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank; - Where revegetation is required, a native seed mix, which does not contain invasive species, will be used; - Ash trees, leaves, logs, or wood chips will not be removed out of the Regulated Area, as identified on the CFIA website (Canadian Food Inspection Agency, 2015). This is necessary to prevent the spread of the EAB to un-infested areas in Ontario. The Contractor must dispose of all wood at a registered Waste Facility; and	Areas of re-vegetation will require watering and will be monitored by an Environmental Inspector or environmental monitor for at least two years to confirm a minimum 80 percent survival rate and confirm that non-native and invasive species are not becoming pervasive as a result of the Project. A compensation/restoration strategy will be developed with the TRCA and the City of Toronto as the Project progresses.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		If extensive invasion of non-native species is identified as a result of the Project, contingency measures may include an applicable herbicide application. A herbicide application plan will be developed as required and submitted to the TRCA for review.	
	Dust created as a result of construction has the potential to settle on adjacent vegetation, disturbing wildlife, and their habitat.	Dust from the work areas will be controlled through suppressants (e.g., water).	An Environmental Inspector will conduct regular inspections of dust emissions, to be defined prior to Project construction, to confirm dust control watering frequency and rates are adequate.
Wildlife	Habitat loss.	- Additional studies to support detailed design will be completed in spring 2022 to identify if hibernaculum are located within the Project footprint. The results of the work will be included with the O. Reg. 166/06 application package for TRCA review; - A Wildlife Management Plan shall be developed during detailed design and followed accordingly; - The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits. Sweeps will be conducted by a qualified Ecologist; - Exclusionary fencing shall be installed to eliminate access to the Project area in advance of construction to prevent reptiles, amphibians, and some mammals to the site; and - Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site.	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Injury or loss of life due to vehicle strikes and other large machinery, or collision with other structures.	Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions; and	Workers will report any wildlife collisions to their supervisors.
	Light Spillage	- Light spillage will be taken into consideration during detailed design and shall include the use of Dark Sky compliant fixtures as outlined in TGS Version 3; and - Bird-friendly building design principles in accordance with the highest applicable TGS shall be taken into consideration (i.e., visual markers applied to the first exterior surface shall be considered).	
	Destruction of nests and habitat during tree clearing activities.	- A Wildlife Management Plan shall be developed during detailed design and followed accordingly; - Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds; - If vegetation must be removed during the breeding bird timing window: - Nest and nesting activity searches will be conducted in areas defined as simple habitat (i.e., the CUM1-1 community) by a qualified Ecologist/Avian Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of confirmed breeding evidence, as defined by OBBA criteria (Cadman M. D., Sutherland, Beck, Lepage, & Couturier, 2007);	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		▪ If an active nest or confirmed nesting activity of a migratory bird is observed in simple habitat, regardless of the timing window recommended, a species specific buffer area following ECCC guidelines will be applied to the nest or confirmed nesting activity wherein no vegetation removal will be permitted until the young have fledged from the nest. The radius of the buffer will depend on species, level of disturbance and landscape context (Government of Canada, 1994), which will be confirmed by a qualified Ecologist/Avian Biologist, but will protect a minimum of 10 m around the nest or nesting; and ▪ The results of all nest searches will be documented at the end of each survey day, including information on the searcher, date, time conducted, weather conditions, habitat type, vegetation community type, observations of breeding activity, observations of confirmed nests including co-ordinates, and, if required, the buffer applied to identified breeding/nesting sites. • If vegetation removal must occur in complex habitats within the above-listed timing windows and absolutely cannot be avoided, the same BMPs such as nest and nesting activity searches described above will be undertaken; and • Suitable human-made structures within the Study Area shall be inspected by a qualified Ecologist / Avian Biologist for evidence of active bird nests during the breeding bird timing window prior to the onset of construction activities in order to determine appropriate nesting preventative measures (e.g., netting).	
Significant Wildlife Habitat	Loss of Reptile Habitat (Hibernaculum).	• A Wildlife Management Plan shall be developed during detailed design and followed accordingly; • Additional studies to support detailed design will be completed in spring 2022 to identify if hibernaculum are located within the Project footprint; • The site shall be swept prior to each day to ensure no reptiles are found within the construction limits. Sweeps will be conducted by a qualified Ecologist; • Exclusionary fencing shall be installed to eliminate access to the Project area in advance of construction to prevent reptiles, amphibians, and some mammals to the site; and • Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site.	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Loss of Special Concern Species Habitat.		
Species at Risk	Loss of Habitat.	• During the detailed design phase, the Park Lawn GO Station construction (including pre-construction land clearing) will be designed to avoid the loss of any Confirmed Habitat of Endangered or Threatened Species to the extent possible. Where loss cannot be avoided, the MECP will be contacted and all requirements under the ESA, will be met, including any species-specific registration, compensation and/or permitting requirements; • Any vegetation clearing shall take place outside of the breeding bird timing window; generally, from April 1 to August 31 of any given year (Different windows may apply to habitats of SAR, subject to permitting requirements);	Monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	Injury / Loss of Life.	- Timing windows for any necessary removal of any confirmed Endangered or Threatened Species habitat will be developed in consultation with the MECP in association with any self-registration or permitting requirements; - General wildlife mitigation during construction and operations will be implemented to minimize effects to all species. This includes avoiding sensitive breeding windows for all species regardless of their status under the <i>Species of Risk Act</i>; - Should a SAR be encountered that is not identified on relevant permits, all work will cease within the immediate work area and the MECP will be contacted: - In the case of SAR Birds: all activities will stop and the Contractor (with assistance from a qualified Ecologist/Avian Biologist) will discuss mitigation measures with the Environmental Inspector. In addition, the MECP and ECCC (if the species is considered a migratory bird) will be contacted to discuss applicable mitigation options. The Contractor will proceed based on the mitigation measures established through discussions with the MECP and/or ECCC. - Candidate Bank Swallow Habitat and Barn Swallow habitat shall be identified to all construction personnel prior to construction activities. Workers will also be trained in the identification of all potential SAR within the Study Area; and - In order to mitigate impacts to American Eel, various mitigation measures shall be implemented if in-water works are required within Mimico Creek. These include sediment and erosion control measures, appropriate dewatering, and cofferdam installation if in-water works are required and adherence to sensitive timing windows for fish species throughout the creek.	
Significant Natural Features / Ravine and Natural Feature Plan	Loss of Ravine Habitat.	- A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures: - Removal of trees and shrubs shall be completed mechanically. - Compensation shall be based upon the basal area approach. - In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be used to clear vegetation. Any herbicide applications to clear vegetation within the rail corridor ROW will be applied in accordance with industry BMPs and regulations including MECP requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas; - Any tree clearing or limb trimming will be limited to meet necessary safety clearances; - Trees will be trimmed by a Qualified Professional arborist to limit tree damage;	The TRCA will be engaged during detailed design in order to determine the scope of an Environmental Monitoring and Contingency Plan (EMCP) in accordance with TRCA Standards. The EMCP will be included as part of the O. Reg. 166/06 application package to be prepared during detailed design. The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone. Areas of revegetation will require watering and will be monitored by an Environmental Inspector or environmental monitor for at least two years to confirm a minimum of 80 percent survival rate and confirm that non-native and invasive species are not becoming pervasive as a result of the Project.
	Alteration of Ravine Habitat.		
	Decrease in Biodiversity.		

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		• An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan shall include site specific techniques and procedures outlining the removal and transportation of invasive species; • All disturbed areas within the construction site will be re vegetated as soon as conditions allow; • Any equipment will be thoroughly cleaned prior to entering the site and when being transported between sites. All cleaning must occur at least 30m from the watercourse; • If an invasive species is removed, the species will be disposed of appropriately in an off-site location; • A SMP will be prepared by a Qualified Professional as defined in O. Reg. 153/04 (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for managing soil materials on site (includes excavation, location of stockpiles, reuse, and offsite disposal); • In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank; • Where revegetation is required, a native seed mix, which does not contain invasive species, will be used; • Ash trees, leaves, logs, or wood chips will not be removed out of the Regulated Area, as identified on the CFIA website (CFIA, 2015). This is necessary to prevent the spread of the EAB to un-infested areas in Ontario. The Contractor must dispose of all wood at a registered Waste Facility; and • If extensive invasion of non-native species is identified as a result of the Project, contingency measures may include an applicable herbicide application. A herbicide application plan will be developed as required and submitted to the TRCA for review.	A compensation/restoration strategy will be developed with the TRCA and the City of Toronto as the Project progresses.
Climate Change	Adverse Effects to Air Quality due to vehicle and heavy machinery emissions.	• Adverse effects to air quality from construction activities can be mitigated through standard best management practices, which include, but are not limited to: ▪ All construction vehicles shall have a Drive Clean Emissions Report in compliance with O. Reg. 361/98: Motor Vehicles under the <i>Environmental Protection Act</i>, R.S.O.1990, C/ E19 as well as licensing from the MTO; ▪ Vehicles and machinery shall not be left to idle; and ▪ All vehicles shall be well maintained and fitted with a emission control system (e.g. exhaust baffles, mufflers, engine covers, etc.). • The Project would present opportunities to improve the transit systems within the region, resulting in a reduction of GHG emissions from vehicle use. In addition, the station is envisioned to be a multi-modal hub and promote various forms of active transportation such as walking, cycling and rollerblading as opposed those with higher carbon footprints (i.e., single-occupant vehicles).	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	Reduction in carbon sinks due to vegetation removal.	• A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures; • Removal of trees and shrubs shall be completed mechanically; • In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be used to clear vegetation; • Any herbicide applications to clear vegetation within the corridor ROW will be applied in accordance with industry BMPs and regulations including MECP and TRCA requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas; • Any tree clearing or limb trimming will be limited to meet necessary safety clearances; and • Trees will be trimmed by a Qualified Professional arborist to limit tree damage.	
Trees	Trees recommended to be preserved are those that will not be affected by the Project once the recommended mitigation measures have been implemented. Trees recommended to be removed are those deemed to be within the construction envelope (Project Footprint) and would not be able to withstand construction related activities or changes to grading.	• The Developer will continue to adhere to municipal By-laws and policies for tree removals on municipal land and private properties. Tree protection measures will follow municipal By-Laws, regulations, and policies. Regulated trees that are dead and identified to be removed are exempt from permit requirements; • Tree replacement may be required to compensate for tree removals as a result of Project implementation. Compensation quantities will be determined during the detailed design stage upon confirming tree removals and injuries and determining which trees will be compensated for; • Preparation of an Arborist Report and Tree Protection Plans based upon the detailed design to support permit applications for tree removals and injuries, including showing location of hoarding to be installed as well as tree protection and preservation plans to be submitted to City and TRCA for approval prior to issuance; • Ownership of property required for the station will be confirmed to finalize categorization of trees prior to submission of permit applications for tree removals and injuries; • Where permits are required on City of Toronto or private property lands within the Study Area, the Developer will work with stakeholders to obtain the necessary documents and approvals. Tree protection measures will follow the municipal By-laws, regulations, and policies; • Detailed restoration and compensation plans will be prepared prior to Project construction in discussion and coordination with the City of Toronto and TRCA using the expertise of an ISA Certified Arborist/Forester and/or licensed Landscape Architect; • Prior to construction, a site meeting will be held with the Contractor(s) and Contract Administrator to review the clearing limits and confirm the installation location for the tree protection barrier;	A qualified Environmental Inspector is required throughout the construction period to ensure that tree protection measures are implemented, maintained, and enforced. This inspector is responsible for determining the need and timing of additional expertise, such as an ISA Certified Arborist. On-Site inspection 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 silt fencing will be repaired if it is damaged. Any damaged/injured trees will be assessed by an ISA Certified Arborist who will provide management recommendations and direction following City By-laws, standards, and practice. Regular monitoring, to be defined prior to pre-construction land clearing, to confirm activities do not encroach into nesting areas or disturb active nesting sites. Post planting monitoring of restoration areas for two years after installation. Should the plantings and/or seed mix not survive, additional seeding and/or plantings will be undertaken one year thereafter with one additional monitoring visit in the following growing season. Additional restoration/compensation measures and/or monitoring maybe required based on the results of additional surveys and consultations with regulatory agencies.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		- Tree protection barriers will be installed as per the construction specifications and applicable City of Toronto specifications. All supports and bracing to safely secure the barrier will be placed outside the TPZ; - Inspection of the tree protection barrier, including photographic records and deficiency notes, will be undertaken by the site supervisor, and submitted to the Contract Administrator prior to the commencement of construction, during construction and after construction is completed; - Proof of installed hoarding must be submitted to City Urban Forestry prior to permit issuance; - All removals should be felled into the work area to ensure that damage does not occur to the trees within the TPZ. Upon completion of the tree removals, all felled trees are to be removed from the site, and all brush chipped. All brush, roots and wood debris should be shredded into pieces that are smaller than 25 mm in size to ensure that any insect pests that could be present within the wood are destroyed; - Measures beyond the City standard tree protection hoarding may be required to protect trees where there is potential for ‘tree injury’ (i.e., a reduction in the minimum tree protection zone or work that may be required within a TPZ); - If it is determined that any City trees require pruning, a pruning plan must be submitted to the City for approval; and - Trees will be pruned in a manner that minimizes physical damage and promotes quick wound closure and regeneration following ISA BMP Tree Pruning (ISA, 2019). All tree maintenance and pruning should be carried out by a qualified tree care specialist that is also an ISA Certified Arborist or under the supervision of an ISA Certified Arborist. If earthworks are required immediately adjacent to a TPZ, and there is a potential to encounter roots, it is recommended that an exploratory exercise with an air spade be conducted, as described in the TIP.	Restoration/compensation and/or monitoring will be confirmed through regulatory agency consultation during detailed design.
Natural Environment - Operations and Maintenance			
Soils	Soil Contamination (through spills or other deleterious substances transported during erosion).	- All disturbed areas within the construction site will be stabilized and revegetated as soon as conditions allow; - Deleterious substances (including stockpiled material) will be used and stored in a manner that prevents any of the substances from entering a natural feature (at least 30 m away from watercourse);	Monitoring will be undertaken subject to the scale of the maintenance work. Monitoring similar to that required during construction may be required for large-scale maintenance and replacement work.
	Soil Contamination (through imported fill materials).	- During operation, any major maintenance work that would result in the replacement or upgrade of major infrastructure components requiring earth-moving will be conducted in accordance with the applicable mitigation measures listed under the construction phase; and - An Emergency Response and Communications Plan will be developed and followed throughout the operation and maintenance phase (includes spill response and contingency plans).	GO Station staff and maintenance contractors are responsible for reporting spills and other issues and ensuring their timely resolution.
Terrestrial Environment	Loss of Trees from Pruning.	Removal of trees and shrubs shall be completed mechanically;	Contractors, GO Station staff and maintenance contractors are responsible for monitoring the effects of trimming and

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		- In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be used to clear vegetation. Any herbicide applications to clear vegetation within the rail corridor ROW will be applied in accordance with industry BMPs and regulations including MECP requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas; - Any tree clearing or limb trimming will be limited to meet necessary safety clearances; and - Trees will be trimmed by a Qualified Professional to limit tree damage.	herbicide application. Any significant concerns will be reported to superiors for timely resolution.
Trees	Deterioration of tree vitality over time for trees that will be protected was the only identified effect during the operations and/or maintenance phase of the Project. It is noted that new growing conditions (i.e., new exposure to wind, sunscald, and root damage) may result in failure of trees or their branches.	- Pruning and felling will be carried out by or under the direction of an ISA Certified Arborist; and - During removal operations efforts should be made to prevent the spread of invasive plant species during construction both on and off-site. Invasive species vegetation has been identified in the NER report. Sanitation of construction equipment should be undertaken in accordance with the Clean Equipment Protocol (OIPC, 2016) and at a minimum should include sanitation of construction vehicles and equipment prior to leaving and moving to the next site. A cleaning station should be set up, so vehicles and equipment can be inspected and cleaned regularly.	Routine inspections will identify dead trees or limbs adjacent to the Project Footprint that will require maintenance for reduction of safety risks. An ISA Certified Arborist will inspect and assess trees on site and on lands immediately adjacent annually (at minimum) from the Metrolinx property. Trees to be removed or pruned post permit issuance must only be done so with the approval of City Urban Forestry.
Archaeological Resources - Pre-Construction / Construction			
	The Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or having been previously assessed. These lands do not require further archaeological assessment.	- Should the proposed work extend beyond the current Study Area, further Stage 1 Archaeological Assessment should be conducted to determine the archaeological potential of the surrounding lands; - Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the <i>Ontario Heritage Act</i>. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the <i>Ontario Heritage Act</i>; and <i>The Funeral, Burial and Cremation Services Act</i>, 2002, S.O. 2002, c.33 require that any person discovering human remains must notify the police or coroner and the Registrar, Burials of the Ministry of Government and Consumer Services.	If archaeological resources are impacted by Project work all activities impacting archaeological resources will cease immediately, MHSTCI will be notified (archaeology@ontario.ca), and a licensed archaeologist will carry out an archaeological assessment in accordance with the <i>Ontario Heritage Act</i> and the Standards and Guidelines for Consultant Archaeologists. If human remains are encountered, all activities must cease immediately and the local police, as well as the Registrar, Burials of the Ministry of Government and Consumer Services must be contacted. 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>Ontario Heritage Act</i> .
Archaeological Resources - Operation			
	No Impacts.		
Cultural Heritage Resources - Construction			
BHR-01 (Christie Water Tower)	No direct impacts or indirect impacts are anticipated. Given that the water tower is over	Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified BHRs;	

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	50 metres from the Project footprint, no vibration impacts from construction activities are anticipated. In addition, the Park Lawn GO Station will not impact views to the water tower from the Gardiner Expressway or the Lakeshore West rail corridor.	- Should future work require an expansion of the Project Study Area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on heritage resources; and - The Cultural Heritage Report has been submitted to heritage staff at the City of Toronto, the MHSTCI, and any other relevant stakeholder with an interest in this Project.	
Cultural Heritage Resources - Operation			
BHR-01 (Christie Water Tower)	No Impacts.		
Socio-Economic and Land Use - Pre-Construction			
Existing Land Use, Property	Acquisition of portions of five properties resulting in minimal loss of property use. Impact to potential hazard lands adjacent to Mimico Creek, north and east of Park Lawn Road.	- Confirm specific property requirements during detail design to determine predicted property impacts; - Engage and negotiate with affected property owners regarding land acquisition and easements/TLIs required for the proposed works; - Provide fair market value compensation to affected property owners in accordance with applicable laws; - Consultation with TRCA to identify mitigation measures to address the potential hazard lands; - If City owned lands in Parks and Open Space Areas or in the Green Space System are required, engage with the City to identify suitable lands to exchange; and - Ongoing discussion between the Developer Project Team and City of Toronto to determine the future City-owned Station lands and the strategy and mechanisms of the land transfer to Metrolinx.	No monitoring activities are required.
Socio-Economic Policies and Planning Context	Provincial Policy Statement (PPS) - the proposed station will encourage new and support existing land use patterns that meet the goals of supporting diverse, healthy, and livable communities through investment in infrastructure and the promotion of intensification. Growth Plan for the Greater Golden Horseshoe (GPGGH) - the proposed station will provide better connectivity for active transportation users between growth areas and transit stations. The proposed station will connect people and goods through a multimodal and efficient transportation network, while creating a major transit station that supports growth and density targets. City of Toronto Official Plan - the proposed station will support the City of Toronto's direction to accommodate future growth while	As there are no predicted effects. No mitigation is required.	No monitoring activities are required.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	also providing infrastructure to promote active transportation. The 2041 Regional Transportation Plan (RTP) - The new station will accommodate growth and development in accordance with the 2041 RTP and is aligned with RTP Strategy 1 (Complete delivery of current regional transit Projects), Strategy 2 (Connect more of the region with frequent rapid transit), and Strategy 4 (Integrate transportation and land use).		
Current Development Applications	A combined Official Plan Amendment, Zoning By-law Amendment and Draft Plan of Subdivision for a proposed mixed-use development of 2150 Lake Shore that will incorporate the proposed Park Lawn GO Station has been submitted to the City of Toronto by the Developer.	No mitigation is required.	No monitoring activities are required.
Socio-Economic and Land Use - Construction			
Roads and Traffic Volumes	Temporary road or lane closures to facilitate construction may impact access to adjacent residences and businesses. Traffic delays along Park Lawn Road and Lake Shore Boulevard West.	- Mitigation measures will be taken as documented in the Transportation Brief (Park Lawn GO Station EPR, Appendix H); - Maintain access to residential and commercial buildings; - Prepare and implement a Construction Traffic Management Plan; - Road closures to be coordinated with the City of Toronto; and - Provide advance notification and signage for lane or road closures.	Monitor implementation of mitigation measures in accordance with the Construction Traffic Management Plan.
Public Transit and Active Transportation	Potential for temporary relocation of bus stops and sidewalk closures to facilitate construction activity and traffic.	- Consultation with TTC and City of Toronto regarding lane and sidewalk closures; - Prepare and implement a Construction Traffic Management Plan; and - Provide advance notification and signage for lane or road closures.	Monitor implementation of mitigation measures in accordance with the Construction Traffic Management Plan and agreements with the TTC and the City of Toronto.
Utilities	Relocation of utilities. Potential for temporary service interruption during relocation or accidental damage to utilities.	- Consultation with utility owners and implementation of utility relocation agreements; - Completion of Subsurface Utility Engineering (SUE) investigations to confirm utility locations; and - Contingency plans to address accidental damage to underground and overhead utilities during construction.	Monitoring of construction activities by a qualified Environmental Inspector.
Residential, Commercial and Institutional Uses	Temporary nuisance effects from increased noise, vibration, and dust (and associated diminished air quality conditions) during construction, may be experienced on lands in	Mitigation measures will be taken as documented in the AQIA (Park Lawn GO Station EPR, Appendix F) and in the NVIA (Park Lawn GO Station EPR, Appendix G);	Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	close proximity to the proposed Park Lawn GO Station. Nearby resident and businesses may experience nuisance effects resulting from increased noise and vibration levels due to construction equipment and construction related activities such as excavation, grading, compaction, and vehicle movements. Air quality effects to lands surrounding the new GO Station are documented in the AQIA (Park Lawn GO Station EPR, Appendix F). Expected noise and vibration effects are documented in the Noise and Vibration Impact Assessment (Park Lawn GO Station EPR Appendix G).	- Noise, Vibration and Air Quality monitoring will reflect Metrolinx’ Environmental Guide for Noise and Vibration Impact Assessment - Rev. 7 (final) (Metrolinx, 2019); - Construction-related noise, vibration, dust and diminished air quality effects will be managed to confirm compliance with provincial regulations, local by-laws and noise, vibration and air quality monitoring will reflect Metrolinx’ Environmental Guide for Noise and Vibration Impact Assessment - Rev. 7 (final) (Metrolinx, 2019); - Preparation and implementation of a Dust Management Plan; - Timing restrictions will be in place to limit the time of day for construction activities, as required by municipal by-laws; - Construction schedule delays will be avoided to the extent possible in order to minimize the time over which construction will occur; and - All stockpiled materials will be fenced and the construction footprint area will be minimized to confirm that the construction zone does not extend beyond that which is necessary.	conducted in accordance with mitigation plans and within specified construction work zones. ‘Type 1’ noise and vibration monitoring at 88-90 Park Lawn Road and 96 Park Lawn Road. Monitoring will continue throughout the construction phase until activities are complete and all exposed soils have been stabilized and all construction waste has been cleaned up.
Recreational Uses, Parks and Open Space	Potential effects on recreational uses, parks, and open space from construction activities will be similar in nature and scope to the effects on residential, commercial, and institutional uses described above.	- Mitigation measures implemented to address effects on residential, commercial, and institutional uses will also be implemented to address effects on recreational uses, parks, and open space; - If City owned lands in Parks and Open Space Areas or in the Green Space System are required, engage with the City to identify suitable lands to exchange; and - If restoration of Open Space lands is required, restoration shall meet TRCA/RNFP/City standards.	Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified construction work zones.
Aesthetic and Visual Effects	Short-term effect on aesthetics due to construction trailers, laydown areas, stockpiling of materials, construction activities and construction fencing. Removal of trees within the City of Toronto property and in the vicinity of Mimico Creek bridge.	- Provide screened enclosure for the site with graphics that create visual interest; - Locate stockpile and laydown areas away from Park Lawn Road and Lake Shore Blvd; and - Compensation of loss of trees in accordance with City of Toronto By-laws and TRCA requirements.	Construction activities will be monitored by a qualified Environmental Inspector to confirm that all activities are conducted in accordance with mitigation plans and within specified construction work zones. A Landscape Architect (licensed in the Province of Ontario) or qualified designate will be required to confirm the success of plant establishment through warranty inspections.
Socio-Economic and Land Use - Operations and Maintenance Phase			
Roads and Traffic Volumes	Impacts to roads and traffic volumes are anticipated to be minimal as access to the proposed station will be primarily by transit, active transportation and PUDO (Transportation Brief Appendix H).	No mitigation measures required.	No monitoring required.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Public Transit and Active Transportation	The proposed station will improve access to local and regional public transit to residents in the Study Area. The proposed station will support Active Transportation initiatives associated with the proposed 2150 Lakeshore development.	No mitigation measures required.	No monitoring required.
Utilities	Once new connections to the proposed Park Lawn GO station are completed, no potential effects from station operation are anticipated.	No mitigation measures required.	No monitoring required.
Residential, Commercial and Institutional Uses	Contribution of the rail corridor and the proposed Park Lawn GO Station to local air pollutant levels is minor in comparison to the current ambient levels. Operational noise levels from trains will be similar to existing train noise levels (< 1dB difference between the Future No-Build (no station) and Future Build (with station) scenarios at all sensitive receptors. Modeled noise levels associated with stationary sources associated with the station building show that noise levels will not exceed applicable daytime and nighttime noise limits. Based on measurement data, vibration levels due to existing trains are below the 0.14 mm/s root-mean-square Metrolinx limit and operational vibrational levels are anticipated to be below the 0.14 mm/s limit. With the proposed Park Lawn GO Station, trains will be slowing down through the Study Area, therefore, vibration levels are expected to decrease due to the implementation of the station. No vibration control measures are required.	- Operations will be carried out in accordance with applicable regulations and standards, including Ontario's ambient air quality criteria (AAQC) (PIBS#6570e01) (Ministry of the Environment (MOE), 2012), MOEE/GO Transit Noise and Vibration Protocol (Ministry of Environment and Energy (MOEE), 1994) and the Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning Publication NPC-300 (Ministry of the Environment and Climate Change (MOECC), 2013); and - During detailed design, effects of construction and permanent use will be assessed.	No monitoring required.
Recreational Uses, Parks and Open Space	Potential effects on recreational uses, parks, and open space from construction activities will be similar in nature and scope to the effects on	New infrastructure to support the Park Lawn GO Station adjacent to Open Space, if required, will reflect TRCA/RNFP/City standards.	No monitoring required.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	residential, commercial, and institutional uses described above.		
Aesthetic and Visual Effects	The proposed station will be locally prominent as the rail corridor is elevated on both sides of Park Lawn Road. Station design being carried out in conjunction with the adjacent 2150 Lakeshore development and is expected to be complementary to the development.	No mitigation required.	No monitoring required.
Safety Security and Light Spillage	Light spillage may occur from the proposed station or from light reflecting on trains at night.	- Use of external visors on floodlights, Dark Sky compliant fixtures; - Light location, height and settings designed to minimize light spillage and prevent blind spots; - Use of shielded fixtures; - Building design and minimization of light pollution to be bird friendly; and - Toronto Green Standards to be followed.	No monitoring required.
Public Realm	The proposed station will be one of several public realm improvements included with the 2150 Lakeshore development and site grading and landscaping will provide a transition from the 2150 Lakeshore development. Grading from 2150 Lakeshore Development is set so that the station square will be close to the same level as the southern platform. Grading for Street A is expected to be similar to the existing Park Lawn Road and Legion Road intersection. The north station building will have vertical access to the north platform and the tunnel under the tracks to the vertical access to the south platform. Other public realm improvements will include improvements to Mimico Creek and restoration of open space areas.	Station square to be roughly at the same level as the southern platform to provide a seamless transition.	No monitoring required.
Roads and Traffic Volumes	Impacts to roads and traffic volumes are anticipated to be minimal as access to the proposed station will be primarily by transit, active transportation and passenger pick-up	No mitigation measures required.	No monitoring required.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	and drop off (Transportation Brief - Appendix H).		
Air Quality - Pre-Construction /Construction			
	Fugitive dust emissions (Total Suspended Particles, inhalable particulate matter (PM10) and PM2.5) from construction activities. Emissions resulting from the use of combustion engines associated within mobile and stationary construction equipment and machinery on-site. 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).	• 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 “Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities”; • 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; • 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; and • 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	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. 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 required. Monitoring will continue throughout the construction phase until activities are complete, all exposed soils have been stabilized, and all construction waste has been cleaned up. A complaint response protocol for nuisance effects, such as dust, will also be established.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		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 (DMP).	
Air Quality - Operations			
	The potential effect on local air quality during the operations of the Future Build scenario is predicted to be negligible for all the contaminants.	- Operation of the Park Lawn GO Station will be carried out in accordance with applicable regulations and standards, including Ontario's AAQC (PIBS#6570e01) (MOE, 2012). To improve general air quality around the Station during the operations and maintenance phase, the following measures could be implemented: - Allow for future connections to multi-use paths to increase the number of passengers that are walking or cycling to access the new GO Station; and - During construction, best management practices will be put into place including road sweeping, and covering of stockpiles and dump trucks. - Considering the air quality will not be decreased by the Project's completion, the measures to be taken are limited. However, if other structures, such as parking lots, PUDO areas were to be constructed, additional measures could be implemented to limit idling times in the station footprint.	Metrolinx maintains ongoing inspection schedules to monitor the effectiveness of its Transit operations. A complaints procedure is in place to address any concern raised by neighboring landowners, municipalities, or the public.
Noise and Vibration - Pre-construction /Construction			
Lands Adjacent to the Park Lawn GO Station (Noise)	Construction sound levels are expected to be within the daytime criteria at nearby sensitive receptors. Construction sound levels are expected to exceed sound level criteria during the nighttime and weekend. This exceedance is limited to the upper level north-facing units in the two condominium buildings located at 88-90 Park Lawn Road. This is due to: - Soil excavation, grading, compaction; - Vehicle movement, heavy lifting; and - Existing track modifications and demolition.	- Construction BMPs will be utilized to minimize any adverse effects from construction noise at nearby sensitive receptors. Prior to construction, a Noise and Vibration Control Plan shall be developed and implemented to reduce the noise impacts at sensitive receptors. The following BMPs are recommended to minimize construction noise impacts. - If construction needs to be undertaken outside of the normal daytime hours, local residents and municipalities will be informed beforehand of the type of construction planned and the expected duration; - Keep equipment well-maintained and fitted with efficient muffling devices; - Restrict idling of equipment to the minimum necessary to perform the specified work; - Avoid unnecessary revving of engines and switch off equipment when not required; - Coordinate “noisy” operations such that they will not occur simultaneously, where possible; - Use rubber linings in chutes and dumpers to reduce impact noise, where possible; - For reversing equipment, use automatic audible reversal broadband alarms instead of tonal alarms; - Adjust site layout to minimize reversing. Apply drive forward in and out conditions where possible; - Provide silencers on supply air ventilation fans for underground work; - Minimize drop heights of materials; and	‘Type 1’ (i.e., continuous) monitoring is required throughout construction on the north side of 88-90 Park Lawn Road as this property will be the most impacted by construction noise. A Construction Noise and Vibration Monitoring Plan shall be prepared prior to the start of construction activities. This document should: - Propose verification procedures related to the effectiveness of the above-noted mitigation measures and the execution of construction best practices; - Identify the proposed instrumentation and duration for noise monitoring at 88-90 Park Lawn Road; - Propose procedures to follow when exceedances are identified; and - Propose a complaint protocol, based on empirical data for the assessment of complaints. Construction activities will be monitored by a qualified Environmental Inspector. Should the Environmental Inspector confirm the prescribed mitigation measures and/or best

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		▪ Route haulage/dump trucks on main roads where possible, rather than on quieter residential roads. • Prior to construction, a Construction Noise and Vibration Monitoring Plan shall be developed and implemented to reduce the noise impacts at sensitive receptors. The plan will include the following details for noise: verification procedures, monitoring instrumentation and monitoring duration, procedures to follow when exceedances are identified, and a complaint protocol.	practices are not functioning as planned, revised mitigation measures and/or best practices designed to improve effectiveness will be implemented. The revised measures shall be reinstated as required in a timely manner.
Lands Adjacent to the GO Station (Vibration)	Nuisance to adjacent building occupants resulting from construction activities causing vibrations, typically involving: • Soil excavation, grading, compaction; • Vehicle movements, heavy lifting; and • Existing track modifications and demolition. Potential damage to properties at 88-90 and 96 Park Lawn Road.	• Construction BMPs will be utilized to minimize any adverse effects from construction vibration at nearby sensitive receptors. Prior to construction, a Noise and Vibration Control Plan shall be developed and implemented to reduce the vibration impacts at sensitive receptors. The following BMPs are recommended to minimize construction vibration impacts: ▪ Substitute equipment generating high levels of vibration whenever possible. For example, smaller compactors could be used instead of a vibratory roller; ▪ Schedule construction activities that have the potential to generate high vibration levels to daytime hours; ▪ Whenever possible, plan haul routes to avoid residential areas; ▪ When deep foundation excavation, employ augured secant pile or similar techniques. Avoid shoring panel installation using vibratory or post impact methods; and ▪ Maintain access routes to avoid the formation of potholes. • West of Park Lawn Road, it is recommended that construction equipment operate at minimum of eight metres away from the construction site perimeter to extent possible.	‘Type 1’ (i.e., continuous) monitoring is required throughout construction at 96 Park Lawn Road as this building falls within the vibration ZOI. A pre-condition survey by means of a photographic record should be undertaken on structures on the north side of 88-90 Park Lawn Road. A Construction Noise and Vibration Monitoring Plan shall be prepared prior to the start of construction activities. This document should: ▪ Propose pre-construction consultations with the owners/occupants of the properties that fall within the zone of influence, namely, 88-90 and 96 Park Lawn Road; ▪ Propose pre-construction measurements of background vibration levels within the ZOI; ▪ Propose a pre-condition survey by means of a photographic record of affected structure façades and all surfaces that fall within the zone of influence, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, trees, signs, and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects will be photographed; ▪ Propose construction vibration monitoring procedures to confirm that the Prohibited Construction Vibrations limits are not exceeded; ▪ Identify the proposed instrumentation and time-periods for vibration monitoring;

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
			- Propose procedures to follow when exceedances are identified; and - Propose a complaint protocol, based on empirical data for the assessment of complaints. Construction activities will be monitored by a qualified Environmental Inspector. Should the Environmental Inspector confirm the prescribed mitigation measures and/or best practices are not functioning as planned, revised mitigation measures and/or best practices designed to improve effectiveness will be implemented. The revised measures shall be reinstated as required in a timely manner.
Noise and Vibration - Operations			
Lands Adjacent to the GO Station (Noise)	- Causes of potential noise effects can include: - Increased vehicle movements in and out of the station; - PA system; and - Speed and throttle setting variation of rolling stock.	- There are no cases where the Adjusted Noise Impact is considered “Significant” (between a 5 and 9.99 dB increase) or “Very significant” (greater than 10 dB increase) for the Future Build Transportation scenario; - All stationary sound levels related to the station will remain within MECP’s NPC-300 sound level limits; and - Therefore, noise control measures are not required.	Metrolinx and GO Transit have ongoing inspection schedules to monitor the effectiveness of their operations. A complaints procedure is in place to address any concerns raised by neighbouring landowners, the City of Toronto, or the public.
Lands Adjacent to the GO Station (Vibration)	- Causes of potential vibration effects can include: - Train pass-bys. - Although, as illustrated - vibration levels are expected to decrease.	Vibration mitigation measures are not deemed to be necessary during the operations and maintenance phase.	Metrolinx and GO Transit have ongoing inspection schedules to monitor the effectiveness of their operations. A complaints procedure is in place to address any concerns raised by neighbouring landowners, the City of Toronto, or the public.
Transportation - Pre-Construction / Construction			
	- Construction will include the north station building, the south station building, a tunnel connecting the two station buildings, the Park Lawn rail bridge widening, and the north and south elevator pavilions. - May effect travelling public, including Active Transportation users, vehicular movement, and rail traffic.	Throughout all stages of construction, the Project team will be committed to reducing impacts on the pedestrian, cyclist, vehicular, and rail traffic. This includes but is not limited to implementing traffic control plans, utilizing traffic control devices, undertaking public information campaigns, developing worker safety plans.	Continuous monitoring and review of mitigation elements.
Geotechnical / Slope Stability Analysis - Pre-construction/Construction and Operations			

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
	The existing retaining wall on Mimico Creek cannot be relied upon to support the slope over the design life of the proposed construction of the passenger platform. These potential failure mechanisms lead to the assumption that the retaining wall cannot be relied upon to provide support for the station platform. Any failure of the existing retaining wall would lead to detrimental impacts to the stability of the station platforms and railway embankment.	Use of the rigid retaining wall limits the encroachment into the Mimico Creek valley system and keep any fill outside of the TRCA's regulatory flood limit. The following design requirements should be considered in the design of the proposed rigid retaining wall: ▪ Independence of the wall from lateral support from the soil retained by the existing retaining wall (passive resistance); ▪ The live and dead loads from the construction of the proposed passenger platform will be carried by the proposed retaining wall, which will be designed as a non-yielding wall; and ▪ Embedment of the wall into the rock mass to a depth that will provide an adequate level of overturning resistance. • Site grading should be designed to divert all surface run-off away from the existing tracks, for example by land drainage ditch, and to reduce the saturation of the foundation materials. If the installation of ditch is not feasible due to land constraints, a design for subsoil drainage should be considered. • Vegetation cover and tree roots on the existing slopes should be maintained in order to minimize soil erosion at the slope surface. • Positive surface drainage should be provided to collect surface run-off and divert water away from the Site. Any standing water, ponding and saturated soil conditions should be avoided to minimize the risk of embankment settlement. • The surface water collected on the constructed surfaces at the top of the existing embankment should be directed to the local stormwater conveyance system, within the property of the north station building, or within the 2150 Lake Shore Development, to be confirmed during detailed design. This could require the need for a detention system to attenuate the additional flow to the stormwater conveyance system. • The preceding recommendations should be followed for where the pavilion and elevator/stairs, as well as the sloped walkway will be constructed at the west end of the proposed new passenger platform. This includes during and post-construction. Any ground disturbance should be protected with erosion and sediment control mitigation measures. Where disturbed ground will be reinstated as a soil slope adequate vegetation should be reinstated to promote slope stability. Recommendations for types and amount of vegetation will be provided and reviewed by agencies as required at detailed design.	• The proposed new retaining wall and infrastructure ownership would be conveyed to Metrolinx once the new structures are commissioned. The long-term operation, surveillance, and maintenance of the new structures will be the responsibility of Metrolinx. • Metrolinx is committed to protecting infrastructure supporting rail operations. • Metrolinx observes the condition of the toe wall at Mimico Creek on route to the annual bridge inspection of the rail carrying bridge and wingwalls. Any imminent failures would be reported, and repair options assessed. An inspection report for the retaining wall structures at Mimico Creek is completed on a five-year cycle. If observations during the five-year inspection reports point to maintenance or repairs, Metrolinx will assess best methods to stabilize the retaining wall and/or slope. .

5.13 Environmental Mitigation and Monitoring Plan

An Environmental Mitigation and Monitoring Plan (EMMP) will be prepared prior to construction of the Project and serve to communicate mitigation and monitoring activities that aim to prevent negative impact on matters of provincial importance related to the natural environment, properties of cultural heritage value or cultural heritage environment, or on constitutionally protected Aboriginal or Treaty Rights, discussed further in Sections 5.13.2 of this EPR. The EMMP will also outline the responsibilities for monitoring activities, including timing and frequency of monitoring activities and the compliance reporting.

The EMMP will also include any other potential environmental impacts or approval requirements that arise prior to construction and through completion of additional environmental studies, as required, including those that are not related to a matter of provincial importance. The EMMP will include relevant mitigation measures and requirements for potential environmental impacts and will include a list of the required permits and approvals for the Project. The EMMP will be updated once the applicable permits and approvals are received for the Project, or the findings from the additional environmental studies are available.

5.13.1 Matters of Provincial Importance

If there is a potential for a negative impact on a matter of provincial importance that relates to the natural environment or has CHVI, or on a constitutionally protected Aboriginal or Treaty Rights, the MECP can take action in relation to the TPAP as prescribed in Ontario Regulation 231/08. Table 5-11 presents the various matters of provincial importance and their definitions (as per the Guide to Ontario's TPAP (MOE, 2014), as well as how these matters are applicable to the proposed Park Lawn GO Station. The EMMP will also outline the commitments made to confirm that the implementation of the Project does not result in negative impacts to matters of provincial importance.

5.13.2 Constitutionally Protected Indigenous or Treaty Rights

As discussed in Section 6 of this EPR, Metrolinx has undertaken consultation with Indigenous Nations that have expressed an interest in the Project.

Table 5-11: Matters of Provincial Importance

Matters of Provincial Importance ¹	Definition ²	Applicability to the Project
A park, conservation reserve or protected area.	A provincial park, conservation reserve or provincially protected area designated by the province.	There are no provincial parks or conservation reserves within the GO Station Study Area.
Extirpated, Endangered, Threatened, or species of special concern and their habitat.	- A SAR: Extirpated, Endangered, or Threatened species and their habitat. - A SCC:	There are potential impacts to SAR as a result of the removal of portions of land within the Park Lawn GO Station footprint. Potential impacts to SAR can be minimized through implementation of

Matters of Provincial Importance ¹	Definition ²	Applicability to the Project
	- Rare or substantially declining species or have a high percentage of their global population in Ontario. - Special concern species identified on the SARO List that were formally referred to as “vulnerable” in the SWH Technical Guide (SWHTG) (MNRF, 2000). - Species identified as nationally Endangered or Threatened by the COSEWIC, which are not protected in regulation under Ontario’s ESA.	mitigation measures.
A wetland, woodland, habitat of wildlife or other natural heritage area.	A Significant Wetland, Significant Woodland, Significant Valleyland or SWH as defined in Section 2.1.5 of the PPS (2014).	Within the Study Area, the Mimico Creek valley is regulated by TRCA.
An ANSI.	A Significant ANSI as defined in Section 2.1.5 of the PPS (2014).	There are no Significant ANSIs and no Candidate ANSIs within the GO Station Study Area.
A stream, creek, river, or lake containing fish and their habitats.	A stream, creek, river, or lake containing fish and their habitats.	There is one watercourse within the within the Study Area, which provides direct fish habitat. The Project does not present any potential impact to fish or fish habitat if in-water works are avoided.
An area or region of surface water, groundwater, or other important hydrological feature.	An area or region of surface water, groundwater, or other important hydrological feature.	The Study Area does not contain any mapped wellhead protection areas, intake protection zones, or significant groundwater recharge areas, however, the Study Area is within a highly vulnerable aquifer area for the protection of drinking water sources. Construction-related mitigation has

Matters of Provincial Importance ¹	Definition ²	Applicability to the Project
		been identified.
Protected heritage property.	Property designated under Parts IV, V or VI of the OHA; property subject to a heritage conservation easement under Parts II or IV of the OHA; property identified by the Province and prescribed public bodies as PHP under the Standards and Guidelines for Conservation of Provincial Heritage Properties; property protected under federal legislation, and United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites.	There are no properties listed under municipal heritage registries and identified as Protected Heritage Properties under Part IV or Part V of the OHA. No properties are identified as a Protected Heritage Property of Provincial Significance within the GO Station Study Area. Construction-related mitigation have been identified.
Built heritage resources (BHR).	A building, structure, monument, installation, or any manufactured remnant that contributes to a property's CHVI as identified by a community, including an Aboriginal community. Built heritage resources (BHRs) are generally located on property that has been designated under Parts IV or V of the OHA or included on local, provincial and/or federal registers.	The Christie Water Tower is a Built Heritage Resource however it is located outside of the Project footprint, and no impacts are anticipated.
Cultural heritage landscapes (CHL).	A defined geographical area that may have been modified by human activity and is identified as having CHVI by a community, including an Aboriginal community. The area may involve features such as structures, spaces, archaeological sites, or natural elements that are valued together for their interrelationship, meaning or association. Examples may include, but are not limited to, heritage conservation districts designated under the OHA; villages, parks, gardens, battlefields, main streets and	

Matters of Provincial Importance ¹	Definition ²	Applicability to the Project
	neighbourhoods, cemeteries, trail ways, viewsheds, natural areas and industrial complexes of heritage significance; and areas recognized by federal or international designation authorities (i.e., a National Historic Site or District designation, or a UNESCO World Heritage Site).	
Archaeological resources and areas of potential archaeological interest.	Includes artifacts, archaeological sites, marine archaeological sites, as defined under the OHA. The identification and evaluation of such resources are based upon archaeological fieldwork undertaken in accordance with the OHA. Methods to identify archaeological potential are established by the province, but municipal approaches which achieve the same objectives may also be used. The OHA requires archaeological potential to be confirmed through archaeological fieldwork.	There are no areas with archaeological potential within the GO Station Study Area.
An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the <i>Niagara Escarpment Planning and Development Act</i> .	An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the <i>Niagara Escarpment Planning and Development Act</i> .	The Project Study Area does not fall within the Niagara Escarpment Plan Area.
Property within an area designated as a natural core area or natural linkage	Property within an area designated as a natural core area or natural linkage area within the area to which the ORMCP under the ORMCA applies.	The GO Station is not located in the ORMCP lands.

Matters of Provincial Importance ¹	Definition ²	Applicability to the Project
area within the area to which the ORMCP under the ORMCA, 2001 applies.		
Property within an area described as a KNHF or a key hydrologic feature (KHF) in the Protected Countryside by the Greenbelt Plan under the <i>Greenbelt Act</i> , 2017.	Property within an area described as a KNHF or a KHF in the Protected Countryside by the Greenbelt Plan under the <i>Greenbelt Act</i> , 2017.	The GO Station is not located within the Greenbelt Area. Thus, no portions of land identified as KNHFs within the Greenbelt Area will be removed as a part of the GO Station development.
<i>Note:</i> ¹ <i>Examples as listed in the Guide to Ontario's TPAP (MOE, 2014).</i> ² <i>Definitions are based on applicable regulations, agency consultations or the Guide to Ontario's TPAP (MOE, 2014).</i>		

6. Stakeholder Consultation Process

6.1 Overview of the Stakeholder Consultation Process

6.1.1 Consultation Program Requirements

As part of the TPAP, public and stakeholder consultation allows the proponent to consult all potentially interested persons on the proposed Project (Ministry of the Environment, 2004). The consultation program must include specific components and matters that are set out in Section 8 of Ontario Regulation 231/08, including:

- Providing information about the basis on which the transit Project was selected, which includes:
 - The assessment and evaluation of the impacts of the transit Project and other methods considered;
 - The criteria for the assessment and evaluation of those impacts; and
 - Any studies completed with respect to those impacts.
- Providing information about the proposed measures for mitigating any potential negative impacts of the transit Project;
- Providing information about the way the proponent intends to monitor and verify the effectiveness of the proposed mitigation measures;
- Discussing with Indigenous Nations on any constitutionally protected Indigenous or treaty right that is identified as potentially being negatively impacted by the transit Project; and
- Discussing with Indigenous Nations any measures identified by the Indigenous Nation for mitigating potential negative impacts on constitutionally protected Aboriginal or treaty rights.

In order to achieve these goals all consultation activities were completed in accordance with O. Reg. 231/08.

An important component of the TPAP is public and stakeholder consultation, and Indigenous engagement. A consultation program was initiated for the proposed Park Lawn GO Station to meet and exceed the requirements of Ontario Regulation 231/08. The purpose of the Consultation Program is to inform the local and regional community, agencies, and other relevant stakeholders, as well as Indigenous Nations of the proposed Project and to seek feedback for inclusion into the EPR. The SCR (Appendix K) outlines in detail the consultation and communication with stakeholders throughout the various stages of the Project. A separate Report has been prepared to document the Indigenous Engagement undertaken throughout the Project and is contained in Appendix L.

6.2 Pre-TPAP Consultation Process

The TPAP consultation process was initiated in the summer of 2020, continued through the fall of 2020 and summer of 2021, and included:

- Consultation with the Director of the MECP;
- Preparation of a Master Contact List;
- Establishment of a Project specific Website (<https://www.2150lakeshore.com/transitea/>);
- Convening Public Meeting #1 (June 25 to July 20, 2020) in an online format via a pre-recorded PowerPoint presentation and voice overlay;
- Undertaking Indigenous engagement through identification of, and correspondence and meetings with, Indigenous Nations that may have an interest in the Project;
- Convening EA briefs and preliminary design meetings with elected officials, regulatory review agencies, conservation authorities and potentially affected municipalities leading to creation of a Technical Advisory Committees (TAC); and
- Convening TAC meetings (June 17, July 29, and August 9, 2021) to provide an overview of public consultation efforts, present preliminary drawings, and technical work, identify EPR developments and obtain input on the EPR.

The following sections summarize the EPR consultation process for the Park Lawn GO Station.

6.2.1 Consultation With the Director

On May 11, 2020, Metrolinx sent a letter to the Director of the MECP, to request a list of bodies that, in the opinion of the Director, would be able to assist in identifying Indigenous Nations that may be interested in the transit Project. A response from MECP was received on May 21, 2020, which provided a list of Indigenous Nations that may have an interest in the Project. The list was used in the development of a list of potentially interested Indigenous Nations which can be found in Appendix A of Appendix L of this EPR.

6.2.2 Master Stakeholder Contact List

A Master Contact List was developed in order to identify and record information for regulatory agencies, the City of Toronto, Indigenous Nations, the TRCA and local organizations who have either expressed interest in the Project, are located in proximity to the Study Area, or may have interest based on the proposed works.

The Master Contact List included the following:

- The Director of the MECP;
- The Director of the MECP Regional Office;
- Indigenous Nations and organizations;

- Landowners with properties located within 30 metres of the station footprints;
- Local municipalities (City of Toronto);
- Conservation authorities with jurisdiction within 30 metres and 100 metres measured from the proposed station footprints (TRCA);
- Applicable regulatory agencies, in accordance with Schedule 2 of O. Reg. 231/08;
- Local Organizations from the Humber Bay Shores area and the Greater Toronto area that may have an interest in the Project; and
- Local utility providers.

The Master Contact list was regularly updated throughout the TPAP in order to ensure that interested parties received Project notifications, invitations to Public Meetings, and other opportunities for involvement. The Master Contact List was used to distribute consultation materials, as well as the Notice of Commencement of the TPAP. The list was also used to track correspondence with the various agencies and organizations that provided feedback to ensure that the comments were incorporated into the decision-making process for the EPR. The Master Contact List is included in Appendix A, of Appendix K of this EPR.

6.2.3 Stakeholder Consultation

6.2.3.1 Project Specific Website

A Project website was developed (<https://www.2150lakeshore.com/transitea/>) to provide an overview of the EA process and Park Lawn GO Station Project information, as well as to keep the public informed of Public Meetings, provide summaries of public meetings and to provide the opportunity to make comments. The Website was updated with Project information and notices throughout the EA process.

6.2.3.2 Public Meeting #1

The purpose of Public Meeting #1 was to present information regarding the transportation goals within the area, and Project background on the Park Lawn GO Station Project, while providing the public with an opportunity to comment on the Project. The meeting was also intended to provide an overview of the consultation process including information on how to submit Project feedback for consideration.

6.2.3.3 Notification

The Notice of Public Meeting was published in the *Etobicoke Guardian* on June 18 and 25, 2020, and in *L'Express* (local French newspaper) on June 19 and 26, 2020.

The Notice of Public Meeting was delivered via registered mail in addressed envelopes to residents within 30 m of the Project Footprint. The Notice of Public Meeting was delivered via Canada Post Neighborhood Mail (unaddressed admail) service to all postal codes within a 200 m radius of the Project Footprint.

Lastly, the Notice of Public Meeting was posted on the Project website on June 24, 2020 and delivered to all stakeholders on the Master Contact List via email.

6.2.3.4 Project Website

On June 25, 2020, a presentation was posted on the Project website as part of the pre-TPAP period and remained posted for the duration of the Project. In total, the YouTube hit-counter recorded 212 views on the presentation at the end of the three-week comment period on July 20, 2020. Comments received between June 25 and July 20, were incorporated into the Public Meeting #1 Summary Report.

6.2.3.5 Format

Due to the COVID-19 pandemic and the limitations for social gatherings of more than 10 people, Public Meeting #1 was presented in an online format via a pre-recorded PowerPoint presentation and voice overlay. The presentation was posted on the Project website as a YouTube link on June 25, 2020 and remained for the duration of the pre-TPAP phase.

The public and review agencies were encouraged to submit comments through either the Project email address or through the *Bang the Table* platform via the Feedback Form.

The presentation was screened using an *Accessibility for Ontarians with Disabilities Act* (AODA) compliance software and modified in order to ensure accessibility for all parties, including closed captioning of the voiceover, colour contrast modifications and font resizing.

6.2.3.6 Information Presented

A PowerPoint presentation was prepared to provide an overview of the Project, the study process, and the status of the existing conditions at the site. The topics on each of the PowerPoint slides are listed below in Table 6-1.

Table 6-1: Contents of Public Meeting #1 Online Presentation

Slide Title	Slide Contents
Proposed Park Lawn GO Station	Title Slide: Introductions and Public Meeting Overview
Welcome	Agenda Slide
Proposed Park Lawn Go Station Overview	Overview of the proposed Project
Park Lawn GO Station Lakeshore West Corridor	Map of the Lakeshore West Rail Corridor with the location of the proposed Park Lawn GO Station
Park Lawn GO Station Study Area	Map of the Project footprint over satellite imagery
Transit Project Assessment Process (TPAP)	Overview of the TPAP
What Are We Assessing?	Overview of the technical studies that are undertaken for incorporation into the Environmental Project Report
Natural Environment	Initial Findings and Future Studies
Socio-economic and Land Use	
Air Quality	
Noise and Vibration	
Cultural Environment Built Heritage	

Slide Title	Slide Contents
Archaeological	
Transportation	
Next Steps	Overview of the next steps in the TPA and timeline of future milestones
We Want Your Feedback	Provides information on how to leave comments and the inclusion of comments into the EPR and closing remarks

6.2.3.7 *General Public and Property Owner Consultation During the Pre-TPAP Phase*

Comments were received from the general public and other stakeholders through a dedicated Project email (transitea@2150lakeshore.com) and the *Bang the Table* platform via the Feedback Form. Key themes from the Public Meeting comments and other inquiries from the public included:

- Privacy;
- Station Access;
- Local Transit Connectivity and Scheduling;
- Noise;
- Traffic;
- Natural Environment ;
- Parking; and
- Electrification and Air Quality.

Written submissions and Project team responses are provided in the SCR found in 0 of this EPR.

6.2.4 *Indigenous Nation Engagement*

Through the initial consultation with MECP, a list of Indigenous Nations identified as potentially having constitutionally protected Aboriginal Rights, treaty rights or other interests in the Park Lawn GO Station Project was developed (Table 6-2). The identified Indigenous Nations were initially contacted via email and mail on June 2, 2020, in order to introduce the Project and provide details regarding Public Meeting #1. Follow-up phone calls were placed to Indigenous Nations to confirm receipt of Notices and ensure the Nation was aware of the opportunity to comment, assess the level and type of interest in the Project and inquire if they have any comments/questions, as well as establish how they wished to be engaged in the future. Correspondence is provided in Appendix B and Appendix C, of Appendix L of this EPR.

A summary of comments from Indigenous Nations and Project Team responses, is provided in Table 6-2. All correspondence with Indigenous Nations as part of the Pre-TPAP Phase is included in Appendix L of this EPR.

Table 6-2: Indigenous Nation Comments and Project Team Responses in the Pre-TPAP Phase

Indigenous Nation	Comment	Project Team Response
Huron Wendat Nation	There is insufficient detail in the Stage 1 Archaeological Assessment regarding the Huron-Wendat Nation's land use and settlement, compared to the Ojibwa or the Haudenosaunee – we request that equal space be given to the Nation's history and way of life. The Huron-Wendat Nation will prepare and provide the text. The Huron-Wendat Nation is satisfied with the report's description of the archaeological, environmental, and historical context of the region and note the indicators of archaeological potential present. Regarding future archaeological work, the Huron-Wendat Nation is requesting to be consulted at every stage and to provide monitors for any field work.	Stage 1 Archaeological Assessment updated to reflect comments related to Huron-Wendat Nation, prior to submission to the MHSTCI.
Curve Lake First Nation	The following historical context was prepared by Gitiga Migizi, a respected Elder and Knowledge Keeper of the Michi Saagiig Nation: We weren't affected as much as the larger villages because we learned to paddle away for several years until everything settled down. And we came back and tried to bury the bones of the Huron but it was overwhelming, it was all over, there were bones all over – that is our story. There is a misnomer here, that this area of Ontario is not our traditional territory and that we came in here after the Huron-Wendat left or were defeated, but that is not true. That is a big misconception of our history that needs to be corrected. We are the traditional people, we are the ones that signed treaties with the Crown. We are recognized as the ones who signed these treaties and we are the ones to be dealt with officially in any matters concerning territory in southern Ontario.	Stage 1 Archaeological Assessment updated to include the Curve Lake First Nation oral history.

Indigenous Nation	Comment	Project Team Response
	We had peacemakers go to the Haudenosaunee and live amongst them in order to change their ways. We had also diplomatically dealt with some of the strong chiefs to the north and tried to make peace as much as possible. So we are very important in terms of keeping the balance of relationships in harmony. Some of the old leaders recognized that it became increasingly difficult to keep the peace after the Europeans introduced guns. But we still continued to meet, and we still continued to have some wampum, which doesn't mean we negated our territory or gave up our territory – we did not do that. We still consider ourselves a sovereign nation despite legal challenges against that. We still view ourselves as a nation and the government must negotiate from that basis.” Often times, southern Ontario is described as being “vacant” after the dispersal of the Huron-Wendat peoples in 1649 (who fled east to Quebec and south to the United States). This is misleading as these territories remained the homelands of the Michi Saagiig Nation. The Michi Saagiig participated in eighteen treaties from 1781 to 1923 to allow the growing number of European settlers to establish in Ontario. Pressures from increased settlement forced the Michi Saagiig to slowly move into small family groups around the present-day communities: Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Scugog Island First Nation, New Credit First Nation, and Mississauga First Nation.	

6.2.5 **Regulatory and Municipal Consultation**

As part of the consultation process, elected officials, regulatory agencies, the TRCA and the City of Toronto were consulted.

6.2.5.1 **Meetings with Agencies, TRCA and City of Toronto**

The Project team met with a number of agencies throughout the Project and reviewed preliminary plans and drawings, as well as discussed issues of importance or concern with participants such as technical study methodology and results. Meeting dates, participating regulatory agencies and elected officials are listed in the SCR provided in Appendix K of this EPR. Participating regulatory agencies included the following: MECP, MHSTCI, TRCA and City of Toronto.

Table 6-3 provides a summary of the Meetings held with Agencies. Meeting minutes and Action Trackers are contained in 0 of this EPR.

Table 6-3: Dates of Meetings with City of Toronto / TRCA

Meeting Type	Meeting Date (s)
Meetings with Individual Agencies	
TRCA #1 (Virtual Meeting)	May 12, 2020
TRCA #2 (On-site meeting)	August 11, 2020
TRCA #3 (On-site meeting)	January 18, 2021
TRCA #4 (Virtual)	March 5, 2021
TRCA #5 (Virtual) - Discussing Geotechnical Comments	May 18, 2021
TRCA #6 (Virtual) - Discussing TIP/NER Comments	May 26, 2021
City of Toronto (Virtual)	June 25, 2020
City of Toronto (Virtual)	July 24, 2020
City of Toronto (Virtual)	April 21, 2021
City of Toronto (Virtual)	April 29, 2021
TAC Meeting No. 1 – City of Toronto and TRCA	June 17, 2021
TAC Meeting No. 2 – City of Toronto	July 29, 2021
TAC Meeting No. 2 - TRCA	August 9, 2021
TAC Meeting No. 2 (Post Meeting 1) – Structural Discussion	August 9, 2021

Meeting Type	Meeting Date (s)
TAC Meeting No. 2 (Post Meeting 2) – Transportation Brief	August 16, 2021
TAC Meeting No. 2 (Post Meeting 3) – West Accesses to Station	August 18, 2021

6.2.5.2 *Agency and Municipal Correspondence*

During the Pre-TPAP process, written correspondence was received from the following agencies: TRCA, MECP, City of Toronto, Transport Canada, Conservation Ontario, MHSTCI, Hydro One, Impact Assessment Agency of Canada, and Infrastructure Ontario. Copies of all correspondence are provided in Appendix K of this EPR.

Full correspondence and comment response tables are provided in Appendix K of this EPR.

6.2.6 *Elected Officials*

The following elected Officials were notified of the Project and informed of the opportunity to provide input on the Project:

- Ward 3 - Etobicoke-Lakeshore
 - Councilor Mark Grimes.
- Members of Provincial Parliament (MPPs) - Legislative Assembly of Ontario
 - Christine Hogarth, MPP - Etobicoke-Lakeshore.

6.3 **TPAP Consultation Process**

The TPAP consultation phase was initiated on August 26, 2021 and included:

- Convening Public Meeting #2 (August 27 to September 17, 2021) in an online format via a pre-recorded PowerPoint presentation and voice overlay;
- Undertaking Indigenous engagement through identification of, and correspondence and meetings with, Indigenous Nations that may have an interest in the Project;
- Circulating draft Technical Reports and the draft EPR to review agencies, Indigenous Nations, other stakeholders and the public; and
- Meetings with the City of Toronto, and TRCA to close out outstanding comments.

6.3.1 *Stakeholder Consultation*

6.3.1.1 *Notice of Commencement of the TPAP/Public Meeting #2*

The Notice of Commencement of the TPAP/Public Meeting #2 was issued on August 26, 2021 and provided to all stakeholders on the Master Contact List. This list includes all interested regulatory agencies, potentially interested/or affected residents, local organizations, Indigenous Nations, elected officials and anyone who has expressed

interest in the Project. The Project Website was also updated to include the Notice of Commencement of the TPAP/Public Meeting #2.

A Copy of the Notice of Commencement of the TPAP/Public Meeting #2 is included in Appendix F of 0 of this EPR.

6.3.1.2 *Notification*

The Notice was posted in two local newspapers (the *Etobicoke Guardian* and *Toronto L'Express*) on August 26 and September 2, 2021 and August 27 and September 3, 2021, respectively. The Notice of Commencement of the TPAP was coordinated with the Notice of Public Meeting.

The Notice of Commencement of the TPAP/Public Meeting was delivered via registered mail in addressed envelopes to those residents within 30 m of the Project Footprint. Additionally, the Notice of Commencement of the TPAP/Public Meeting was delivered via Canada Post Neighborhood Mail (unaddressed admail) service to all postal codes within a 200m radius of the Project Footprint.

6.3.1.3 *Project Website*

On August 27, 2021, a presentation was posted on the Project website as part of the TPAP period and remained posted for the duration of the TPAP period. In total, the YouTube hit-counter recorded 272 Views on the presentation at the end of the three-week comment period on September 17, 2021. Comments from the public and from agencies were received by the Project Team through either the Project email address, Project phone number, or through the Bang the Table platform via the Feedback Form. Comments received between August 27 and September 17, 2021 were incorporated into the Public Meeting #2 Summary Report.

6.3.1.4 *Format*

Due to the COVID-19 pandemic and the limitations for social gatherings, Public Meeting #2 was presented in an online format via a pre-recorded PowerPoint presentation and voice overlay. The purpose of Public Meeting #2 was to share updates associated with the Project, including the results of technical studies, while providing the public with an opportunity to comment on the Project. The presentation was posted on the Project website as a YouTube link on August 27, 2021 and remained posted for the duration of the Project.

The public and review agencies were encouraged to submit comments to the Project Team through either the Project email address, Project phone number, or through the Bang the Table platform via the Feedback Form.

The presentation was screened using *Accessibility for Ontarians with Disabilities Act* (AODA) compliance software and modified in order to ensure accessibility for all parties. Modifications included closed captioning of the voiceover, alternate text for figures, bookmarks for navigation, colour contrast modifications, and font resizing.

6.3.1.5 Information Presented

A PowerPoint presentation was prepared to provide an update on the Project, including the findings of the technical studies, impact and mitigation, as well as proposed compensation. The topics on each of the PowerPoint slides are listed in Table 6-4.

Table 6-4: Contents of Public Meeting #2 Online Presentation

Slide Title	Slide Contents
Proposed Park Lawn GO Station	Title Slide
Welcome	Meeting Agenda
Proposed Park Lawn GO Station Project Overview	Overview of the Proposed Project
Park Lawn GO Station Lakeshore West Corridor	Map of the Lakeshore West Rail Corridor with the location of the proposed Park Lawn GO Station shown
Park Lawn GO Station Study Area	Map of the Proposed Project Footprint shown over satellite imagery
Park Lawn GO Station Concept Plan	Map of the Project Concept Plan identifying the proposed locations of station facilities, platforms, rail corridor, access and walkways, tunnels, pedestrian shelters, waterway, and adjacent development
Transit Project Assessment Process (TPAP)	Overview of the TPAP
What Are We Assessing?	Overview of the technical studies that were undertaken as part of the EA
Natural Environment	Existing Conditions and Effects Assessment
Tree Inventory Plan	
Fluvial Geomorphology	
Slope Stability	
Cultural Environmental Built Heritage	
Archaeological	
Socio-Economic and Land Use	
Air Quality	
Noise and Vibration	
Transportation	
Next Steps	Overview of the next steps in the TPAP and timeline of future milestones
We Want Your Feedback	Outlines details on how to share comments with the Project Team for inclusion in the EPR

6.3.1.6 General Public and Property Owner Consultation During the TPAP Phase

Comments were received from the general public and other stakeholders through a dedicated Project email (transitea@2150lakeshore.com), Project phone number, and the Bang the Table platform via the Feedback Form. Key themes from the Public Meeting comments and other inquiries from the public included:

- Road Connections;
- Traffic;
- Noise and Vibration;

- Air Quality;
- Privacy;
- Arts and Culture;
- Natural Environment;
- Station Location and Connectivity;
- Project Timelines; and
- Station Configuration.

Written submissions and Project team responses are provided in the SCR found in 0 of this EPR.

6.3.1.7 *Other Submissions from the General Public and Property Owners*

Comments were also received from the general public and other stakeholders through the dedicated Project email (transitea@2150lakeshore.com), Project phone number, and the Bang the Table platform via the Feedback Form outside of the formal Public Meeting comment periods, during the pre-TPAP and TPAP phases. Key themes from the public comments and other inquiries from the public included:

- Construction Timing and Operations;
- Train Electrification and Connectivity;
- Privacy;
- Traffic and Transportation;
- Arts and Culture;
- Noise Pollution; and
- Natural Environment.

Written submissions and Project team responses are provided in Appendix K of this EPR.

6.3.2 **Indigenous Nation Engagement**

Metrolinx contacted and/or engaged Indigenous Nations identified as having potential interest in the Project (see list in Table 6-5).

Table 6-5: List of Indigenous Nations Contacted During the Park Lawn EPR Engagement Process

Indigenous Nations	Notice of Public Meeting #1	Notice of Public Meeting #2	Review of Stage 1 Archaeology Assessment	Opportunity to Review Environmental Project Report
Haudenosaunee Confederacy Chiefs Council	✓	✓	✓	✓
Huron-Wendat Nation	✓	✓	✓	✓

Indigenous Nations	Notice of Public Meeting #1	Notice of Public Meeting #2	Review of Stage 1 Archaeology Assessment	Opportunity to Review Environmental Project Report
Kawartha Nishnawbe First Nation	✓	✓	✓	✓
Mississaugas of the Credit First Nation	✓	✓	✓	✓
Six Nations of the Grand River	✓	✓	✓	✓
Williams Treaties First Nations				
Alderville First Nation	✓	✓	✓	✓
Beausoleil First Nation	✓	✓	✓	✓
Curve Lake First Nation	✓	✓	✓	✓
Georgina Island First Nation	✓	✓	✓	✓
Hiawatha First Nation	✓	✓	✓	✓
Rama First Nation	✓	✓	✓	✓
Scugog Island First Nation	✓	✓	✓	✓

Consistent with the list of Indigenous Nations identified through consultation with the MECP in the pre-TPAP phase, the following Indigenous Nations were contacted on August 27, 2021 to advise of the Notice of Commencement of the TPAP and the second Public Meeting.

A summary of comments received from interested Indigenous Nations are provided in Table 6-6 and are accompanied by the Project Team responses. Correspondence with Indigenous Nations that occurred as part of the TPAP is included in Appendix B and C, of Appendix L of this EPR.

Table 6-6: Indigenous Nation Comments and Project Team Responses in the TPAP Phase

Indigenous Nation	Comment	Project Team Response
Huron-Wendat Nation	We do not have any specific comments at this point regarding the EPR and technical studies. We are interested in participating in any further archaeological fieldwork if the work is extended beyond the assessed Study Area.	Thank you for confirming. We will keep you apprised of any future archaeological assessments.
Curve Lake First Nation	We respectfully wish to offer Metrolinx, as part of our relationship building, constructive dialogue in order to correct the use colonizing tones in communications to First Nations. For example, "Metrolinx appreciates and respects Curve Lake First Nation's desire to be appropriately informed and aware of Projects." This should be written to reflect and acknowledge the right to be informed and consulted when referring to treaty rights holders. The current tone can be perceived as a colonial agenda and may be taken as a sign of disrespect. Metrolinx and other proponents are guests in the Michi Saagiig territory because of the treaty making process.	The language in our Notice letter will be corrected to more accurately reflect Curve Lake First Nation's right to be informed and engaged. Metrolinx recognizes that they are guests in the Michi Saagiig territory because of the treaty making process.
	it is suggested that "Appendix K Draft Stakeholder Consultation Report" be renamed to reflect that "Indigenous Nation Consultation" is in fact a separate and distinct section(s) in the report itself. Rights holders, in particular, are not to be lumped in with stakeholders	Appendices will be renamed to reflect the distinction between Indigenous Nations and other stakeholders, such that a separate Appendix, Appendix K: Indigenous Nations Engagement, in addition to the existing Appendix L: Stakeholder Consultation Report.
	CLFN reserves the right to review, challenge and provide input into all proposed mitigation or ecological managements plans prior to implementation during the detailed design phase of proposed works.	Proposed mitigation measures will be reviewed by CLFN as they become available. Review cycles, the expected level of effort, and review timelines will need to be determined by Metrolinx and CLFN. Metrolinx will share a list of design and restoration plans to CLFN for them to identify which they would like to review. Review time will be assumed to be 30 days.
	CLFN and 4 Directions with support from the Metrolinx team would like to conduct "blind or surprise" environmental construction inspections during the	Metrolinx supports the idea of "blind or surprise" environmental construction inspections, however, will need to be notified in advance of any site-visits due to safety concerns. Metrolinx is

Indigenous Nation	Comment	Project Team Response
	implementation of the detailed design phase of the Project. This will ensure that the third party and contractors hired to represent the interests of the Metrolinx are acting in their best interest and not impacting the environment or Indigenous Rights.	required to provide 48-hour notice to Contractor before a site visit. Safety requirements will be confirmed prior to attendance on active construction site.
	CLFN shall participate in detailed design of the site restoration using cultural knowledge for the enhancement of site features to restore the natural balance of the site.	Metrolinx welcomes CLFN participation in site restoration efforts and planning and will provide restoration plans to Curve Lake as part of detail design for input as part of review process. Metrolinx welcomes and supports constructive dialogue on this topic.
	Further collaboration is needed with both Indigenous knowledge holders and Western science practitioners to understand and evaluate the natural environment. Protection is not only for those species deemed rare or at risk by settler governments and settler occupation, since it is by their own doing that these relations are in danger. All species have a right to exist and to life. Further work is needed by Metrolinx to understand the cultural keystone species and the impacts that their daily operations and future Project may have on cultural keystone species and therefore on the Indigenous communities living within their zone of operations. Cultural keystone species can be as common as species like: the deer, the coyote, the mosquito, or the hummingbird. As we collectively achieve this understanding of worldviews, more meaningful Project and environmental restoration can be accomplished on the landscape, since it is intertwined in spirit, science and in ceremony. Within the information provided in the appendices, seventeen tree and sixteen bird species were observed by Metrolinx and its consultants within the footprint of this Project that fit the designation of culturally important or keystone. Metrolinx must ensure that	Metrolinx recognizes that all wildlife species that may be of interest to CLFN are not included here and commits to discuss and identify species of concern. Metrolinx is committed to including culturally important or keystone species in future plans. While the breeding bird window restricting tree removal between April 1 and August 31 is directed toward specific bird species it will coincide with common species nesting / denning of young, protecting most if not all breeding species found on site. General wildlife mitigation during construction and operations will be implemented to minimize effects to all species.

Indigenous Nation	Comment	Project Team Response
	species/relations have the right and ability to flourish prior to, during and after occupation of Metrolinx. To ignore this, is to ignore the rights of CLFN and other rights bearing communities.	
	Under the soils component of the mitigations - please define qualified personnel for the creation and implementation of a soil management plan.	Under Ontario Regulations 153/04 Record of Site Condition and 406/19 On-Site and Excess Soil Management, a Qualified Persons must hold a Professional Engineer or Professional Geoscientist license. Text in the table has been revised to include this detail.
	The letter of notice states there will be no in water works to be completed for this Project. Please remove this section since it is not required based on the information presented. If in water works is required, then a discussion will be needed with consent from CLFN since we have the rights to water and not the province. Also, if there is to be any riparian vegetation removed then a restoration plant will be required with input by CLFN.	There are no in-water works planned at this time for the Project. The commitments in the Natural Environment Report and Environmental Project Report (EPR) are meant to be all-encompassing in the event that the design changes and in-water works are required. This would trigger an EPR Addendum and additional engagement with Indigenous Nations. This section will be revised to reflect that additional and meaningful consultation with CLFN will be required for in-water works in the event that they are required. This is in recognition of CLFN's water rights.
	Not all plant vegetation is negative to the Michi Saagig. Species deemed to be invasive by the province still could have medicinal value to the community. It is best management practice to ask the community prior to destroying and disposing of any species.	Please note any vegetation removals on site are required for construction. What's more invasive species management on this site will be for restoration planting areas where it is required for the success of plantings. Metrolinx is committed to having meaningful conversations with Indigenous Nations to understand and recognize that species deemed to be invasive may hold cultural value. Invasive species management plans, if required, will be shared with CLFN for review and input during detailed design.
	Please define buffer area proposed around nesting species.	Buffers are typically defined by the species present at the time of construction. Currently buffers are a minimum of 10 metres and revised, as required, based on the needs of the nesting species. Metrolinx welcomes and supports constructive dialogue and input with regards to buffers and timing windows as the Project progresses through detailed design, including the Project's Wildlife Management Plan.

Indigenous Nation	Comment	Project Team Response
	Who is responsible for the herpetofauna and mammal sweeps? What are their qualifications? Is there contractor education to avoid harm and done by who?	Bird nest sweeps and searches will be conducted by a qualified Ecologist or Avian Biologist. Contractors will be properly trained to handle and identify species of conservation concern. Additional detail will be added to the Natural Environment Report to identify the qualifications of the persons completing herpetofauna and mammal sweeps. As per Table 5-2, workers will be provided with the appropriate training to safely handle and relocate wildlife from the construction site, including herpetofauna and mammals. Additional details will be included in the Wildlife Management Plan, which will be developed at the detailed design stage and circulated for review to CLFN. Moving forward Metrolinx will explore opportunities for Indigenous Nations to lead wildlife training.
	All species, not only species at risk have a right to a meaningful life. Please define and ensure all timing windows are communicated in this table.	Metrolinx ensures that sensitive breeding windows will be avoided for all species, regardless of their status under the Species at Risk Act. Mammals have not been documented as breeding/denning on site, though baseline wildlife surveys could include Indigenous Nation's input and/or training to be more comprehensive. Breeding bird windows are respected in construction implementation and encompass the majority of common mammal breeding windows as well. General wildlife mitigation during construction and operations will be implemented to minimize effects to all species. Moving forward Metrolinx will explore opportunities for Indigenous Nations to lead wildlife training.
	Michi Saagig knowledge system and input is critical along with City of Toronto and TRCA expertise for site restoration.	Metrolinx welcomes CLFN participation in site restoration efforts and planning and will provide restoration plans to Curve Lake as a part of detail design for input as part of review process.
	When considering "positive surface drainage" of the site, does this include the water quality inputs to Mimico Creek? Metrolinx needs to ensure their Project does not further impact the Mimico Creek valley system. Please demonstrate how this will be completed.	Metrolinx will be working to minimize impacts to Mimico Creek by meeting storm water requirements for water quality and quantity through retaining runoff generated from site surfaces through infiltration, evapotranspiration, water harvesting, and reuse, and removing a minimum of 80% of total suspended solids (on an annual basis) from the runoff leaving the site. The EPR outlines these details from a high level, however more detailed information through the preparation of the Stormwater Management Plan will

Indigenous Nation	Comment	Project Team Response
		be developed as part of detailed design which will can be shared with CLFN for input and feedback.
	The report completed by Water's Edge Environmental Solutions Team was very well done and insightful to the state of the watercourse. It is also recommended to CLFN by 4 Directions that continued monitoring be undertaken as per recommendations within the report/Appendix J; CLFN agrees with this recommendation and would like to pursue further discussion with Metrolinx. In the likelihood of restoration of the river valley occupied by Metrolinx, it is recommended that all parties use Indigenous knowledge systems to help aid in creating stability within the river.	Metrolinx welcomes and invites CLFN to engage in further discussion regarding the monitoring and recommendations outlined in the report. Should the river valley require restoration by Metrolinx, CLFN will be further consulted. However, it is outside of the TPAP at this time. Metrolinx observes the conditions of the toe of slope structures along Mimico Creek annually and reports on its conditions every 5 years. Any imminent failures would be reported, and repair options assessed. Should restoration be required, excluding emergency works, CLFN will be asked to review restoration plans. Metrolinx welcomes future discussions on Mimico creek with CLFN.
	Please describe or define the protocol used for the detailed fish habitat assessment.	Section 3.3.1 will be updated to describe protocol used for detailed fish habitat assessment. The field assessment follows the protocols in the Ministry of Transportation Environmental Guide for Fisheries. Additional detail regarding fish habitat was obtained from TRCA background reports. If in-water works are required, then more studies would be undertaken and will be reviewed by CLFN. Metrolinx welcomes and supports constructive dialogue on this topic.
	In section 4.4 Watercourses and Hydrological Features, it would be nice to have the Settler community acknowledge that because of their occupation in the watershed and land use, it has resulted in a poor water quality or health of the sub-watershed.	The EPR has been updated to state that the form and function of the hydrology of Mimico Creek and valley features have been negatively impacted by urbanization of the surrounding areas. Metrolinx is preparing language for future reporting to clearly acknowledge treaty territory, rights, and the impacts of the settler community on the environment.
	In section 4.5.3 Aquatic Habitat Summary, the classification of the reach should be considered to be cool to warm water thermal tolerance given that creek chub and pumpkinseed were referenced to be residents within the system.	The description of the reach will be revised to indicate that cool water species are present as well as warm water species. The existing warm water classification will be referred to in reference to timing windows provided by TRCA and the Ministry of Northern Development, Mines, Natural Resources, and Forestry (MNDMNR).

Indigenous Nation	Comment	Project Team Response
	In section 4.7.1 Mammal- all species presented have a cultural value to the Indigenous community. How can the enhancement of their habitat be incorporated into the final restoration of the site?	Will be added as a future commitment. Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem, and this will be shared with CLFN for input and feedback. Metrolinx will explore refining baseline studies in future to include mammals through engagement with Indigenous Nations.
	In section 4.7.3 Herpetofauna- Define protocol used.	The protocol used to identify herpetofauna species will be updated. No focused field surveys have been conducted to date. Potential habitat was identified during field surveys and was compared to the data provided by TRCA, MNDMNR, and the Ontario Reptile and Amphibian Atlas. If at the detailed design stage impacts are identified to potential habitat, additional MNDMNR and TRCA protocols will be followed to determine species presence and if breeding or hibernation habitats are present within the Study Area. Metrolinx will explore refining baseline studies in future to include herpetofauna through engagement with Indigenous Nations.
	In section 4.7.4 Butterflies- Since no detail survey was completed (explain why?) then enhancement should be done within the landscape planning of the site to enhance habitats in the area given the species recorded by incidental observation.	Details will be adjusted to reflect enhancements and will be described in the commitments section. A restoration plan will be developed for all areas within the valley system that are temporally disturbed. This plan includes native herbaceous cover in the form of native seed mixes, shrubs and trees. Selection of planting materials can include appropriate plants to fulfil butterfly lifecycle requirements. that benefits the ecosystem. Metrolinx will explore refining baseline studies in future to include herpetofauna through engagement with Indigenous Nations.

6.3.3 **Regulatory and Municipal Consultation**

As part of the consultation process, elected officials, regulatory agencies, the TRCA and the City of Toronto were consulted.

6.3.3.1 **Meetings with Agencies, TRCA and City of Toronto**

The Project team met with a number of agencies throughout the duration of the Project and reviewed plans and drawings, as well as discussed issues of importance or concern with participants such as technical study methodology and results. Meeting dates, participating regulatory agencies and elected officials are listed in the SCR provided in Appendix K of this EPR. Participating regulatory agencies included the following: MECP, MHSTCI, TRCA and City of Toronto.

Table 6-7 provides a summary of the Meetings held with Agencies during the TPAP phase. Meeting minutes and Action Trackers are contained in 0 of this EPR.

Table 6-7: Dates of Meetings with City of Toronto / TRCA

Meeting Type	Meeting Date (s)
Meetings with Agencies	
City of Toronto (Virtual) – 95% Check-In	October 7, 2021
TRCA (Virtual) – 95% Check-In	October 19, 2021
City of Toronto (Virtual) – Page Flip	November 17, 2021
City of Toronto (Virtual) – Utilities Follow-Up	November 25, 2021
TRCA (Virtual) – Page Flip	December 2, 2021

6.3.3.2 **Agency and Municipal Correspondence**

During the TPAP phase, written correspondence was received from the following agencies: Infrastructure Ontario, Hydro One, MECP, and MHSTCI.

Full correspondence and comment response tables are provided in Appendix K of this EPR.

6.3.4 **Elected Officials**

The following elected Officials were notified of the Project and informed of the opportunity to provide input on the Project:

- Mayor John Tory;
- Ward 3 – Etobicoke-Lakeshore
 - Councilor Mark Grimes
- Members of the Parliament of Canada (MP)

- James Maloney, MP – Etobicoke—Lakeshore
- Members of Provincial Parliament (MPPs) – Legislative Assembly of Ontario
 - Christine Hogarth, MPP – Etobicoke—Lakeshore.

6.3.5 *Incorporation of Stakeholder Comments and Commitments to Future Consultation*

The Developer and Metrolinx are committed to incorporating comments and input, as appropriate, into the design of Park Lawn GO Station. Upon completion of the EPR, consultation with members of the public and interested stakeholders will continue, to support the design and construction of the new GO Station and ensure continued communication on the Project.

7. Permit and Approval Requirements

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

Permits and approvals obtained for the proposed works, as outlined in the following sections, may identify the need for additional mitigation. Any additional mitigation measures required in connection with a permit or approval shall be implemented.

7.1 Federal

At the time of publication, the following federal permits and approvals have been identified as required for the Project, see Table 7-1.

Table 7-1: Summary of Applicable Federal Permits and/or Approval Requirements

Permit, Approval or Agreement Required	Federal Agency
Risk assessment to be completed in accordance with the Railway Safety Management System Regulations for all Project components.	Transport Canada

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

7.1.1 *Impact Assessment Act*

Under the *Impact Assessment Act*, 2019 (IAA 2019), the Regulations Designating Physical Activities (Project List) define the types of Projects that may require a Federal EA. If the proposed Project is listed on the Project List, a Project Description is to be prepared for submission to the Impact Assessment Agency. The Project is not on the Project List, therefore does not trigger an IAA.

7.1.2 *Environment and Climate Change Canada*

7.1.2.1 *Species at Risk Act*

The federal SARA provides a framework to ensure the survival of wildlife species and the protection of natural heritage in Canada. Under SARA, the federal government has responsibility for wildlife on federal lands. On private lands, SARA protection applies to: aquatic species listed as endangered, threatened, or extirpated in Schedule 1 of SARA; migratory birds protected under the MBCA; and species in certain cases where provincial / territorial measures do not adequately protect a species. Permits for activities affecting a Schedule 1 species in a national protected heritage area are administered by Parks Canada. For activities affecting a Schedule 1 aquatic species, permits are administered by Fisheries and Oceans Canada (DFO). All other SARA permit requests are administered by the ECCC.

As there are no species listed on Schedule 1 of SARA that are located on federal lands, no permits under SARA are anticipated.

7.1.2.2 *Migratory Birds Convention Act*

The Federal MBCA protects migratory bird populations by regulating potentially harmful activities during the active seasons. The MBCA and the *Migratory Birds Regulations* (MBR) are Federal legislative requirements that are binding on members of the public and all levels of government, including Federal and provincial governments (Environment and Climate Change Canada, 1994).

Environment and Climate Change Canada and the Canadian Wildlife Service (CWS) have compiled nesting calendars that show the variation in nesting intensity by habitat type and nesting zone, within broad geographical areas distributed across Canada. While this does not mean nesting birds will not nest outside of these periods, the calendars can be used to greatly reduce the risk of encountering a nest. It is noted that ECCC advises that avoidance is the best approach (Environment and Climate Change Canada, 1994).

As no permit can be issued for the incidental take of migratory birds or their nest or eggs as a result of economic activities, there is a responsibility to adhere to these regulations and ensure compliance, particularly during the initial removals and disruption of potential nesting habitats (e.g., trees, vegetated lands, and structures). Thus, removals required for the Project will be planned to occur outside the core breeding bird timing window (i.e., generally occurring April 1 to August 31 of any given year) to the extent possible.

7.1.3 *Fisheries and Oceans Canada*

In accordance with the *Fisheries Act*, approval from DFO is required where the Project work activity could potentially result in the Harmful Alteration, Disruption or Destruction (HADD) of fish habitat and the death of fish, as defined in the Act. Under the Act, the definition of “Fish Habitat” includes “means water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas” (*Fisheries Act*, RSC 1985, c P-2).

Should the Project encroach on Mimico Creek or where potential effects to fish or fish habitat cannot be avoided, and the Project activities could result in ‘HADD’ to fish, DFO will be consulted, and a Request for Review will be submitted.

7.1.4 *Transport Canada*

7.1.4.1 *Railway Safety Act*

Pursuant to the *Railway Safety Act*, R.S.C., 1985 the Railway Safety Management System Regulations (2015) sets out the minimum requirements with respect to safety management systems that must be developed and implemented to achieve the highest level of safety in railway operations. The Project will comply with the safety management system requirements identified within this regulation including the completion of risk assessments that will be conducted for all components of the Project.

7.2 Provincial

These are the possible permit / approval requirements to be confirmed in subsequent stages of the Project as the design progresses. Currently, the following provincial permits and approvals have been identified as required for the Project, see Table 7-2.

Table 7-2: Summary of Applicable Provincial Permits and/or Approval Requirements

Permit or Approval Required	Provincial Agency
Environmental Compliance Approval (ECA) - Noise & Vibration	MECP
Environmental Activity and Sector Registry (EASR) - O. Reg. 1/17: Registrations Under Part II.2 of the Act - Activities Requiring Assessment of Air Emissions	
Drinking Water Works Permit	
ECA - Stormwater	
ECA - Groundwater & Surface Water	
ECA - Sewage Works	
ECA - Waste Management System - Mobile Waste Processing	
Well Abandonment and Source Protection	
PTTW/EASR (O. Reg. 387/04)	
Hazardous Waste Information Network (HWIN) Registry (O. Reg. 347)	
ESA - Consultation and Registrations/Permits	
Cultural Heritage Report	MHSTCI
Stage 1 Archaeological Assessment	

7.2.1 Ministry of the Environment, Conservation and Parks

7.2.1.1 Environmental Compliance Approval - Noise and Vibration

In accordance with the *Environmental Protection Act* (EPA, 1990), a Project must have Environmental Compliance Approval (ECA) from the MECP if it will result in the anticipated release of pollutants into the air, land, or water. An environmental approval sets out operational rules for these activities in order to protect the natural environment. Under Part II.1 of the EPA, an ECA will be required from the MECP for the Project in relation to Project components that have the potential to produce emissions associated with noise and vibration prior to its commissioning. An ECA will be obtained prior to the construction phase.

7.2.1.2 Environmental Activity and Sector Registry - O. Reg. 1/17: Registrations Under Part II.2 of the Act - Activities Requiring Assessment of Air Emissions

Projects that are engaging in activities prescribed in regulation for the purposes of the EASR regime are required by the EPA to register those activities in the EASR. Subject to provision for prescribed activities that require an ECA, as of January 31, 2017, activities with air emissions prescribed by O. Reg. 1/17 must be registered in the EASR.

Prior to construction the prescribed activities under the Air Emissions EASR regulation will be registered in the EASR.

7.2.1.3 *Drinking Water Works Permit*

For compliance with the *Safe Drinking Water Act, 2002* and *Ontario Regulation 170/03*, modification to drinking water systems must have approval from the MECP to modify, repair or extend drinking water systems.

7.2.1.4 *Environmental Compliance Approval - Stormwater Works*

For compliance with the EPA, a Project must have environmental approval from the MECP if it is anticipated to release pollutants into the land or water or stores, transports or disposes of waste. An environmental approval sets out operational rules for these activities in order to protect the natural environment. Under Part II.1 of the EPA, an ECA and SWM Plan will be required from the MECP for the Project in relation to approval of the station that result in discharges.

The ECA will be obtained prior to the construction phase. Any conservation authority and municipal review comments submitted to Metrolinx will be provided to the MECP as part of the ECA application for Stormwater Works.

7.2.1.5 *Temporary Environmental Compliance Approval - Groundwater and Surface Water*

If the Geotechnical Investigation and Hydrogeological Study confirm the presence of contaminated groundwater, the Developer will apply for a temporary ECA from the MECP to facilitate the discharge of groundwater during construction. For areas where it is identified that construction may affect groundwater, a groundwater monitoring and treatment plan/program for pre-construction and construction periods may be required, in accordance with the MECP ECA requirements and conditions. It is noted that this temporary ECA is a separate application from the permanent SWM System ECA.

7.2.1.6 *Environmental Compliance Approval - Sewage Works*

For compliance with the EPA, and Section 53 of the OWRA, a Project must have environmental approval from the MECP if it uses, operates, establishes, alters, extends, or replaces new or existing sewage works. An environmental approval sets out operational rules for these activities in order to protect the natural environment.

7.2.1.7 *Environmental Compliance Approval - Waste Management System - Mobile Waste Processing*

Under Section 27 of the EPA, a Project must have approval from the MECP to use, operate, alter, enlarge, or extend a waste management system or a waste disposal except under and in accordance with an ECA. Depending on the methods and equipment used during construction an ECA - Waste Management System - Mobile Waste Processing may be required.

7.2.1.8 *Well Abandonment and Source Protection*

The MECP regulates well abandonment under O. Reg. 903 of the OWRA.

It is not expected that any of the municipal wells in proximity to the Station Study Area will require abandonment to facilitate implementation of the Project. There may, however, be additional wells, for example monitoring wells, present on properties within the GO Station

Study Area that may require decommissioning. Should wells be identified prior to the construction phase of this Project that require decommissioning, these wells must be abandoned in accordance with O. Reg. 903 by a Licensed Well Contractor, and records provided to Metrolinx System Safety.

7.2.1.9 *Permit to Take Water*

The need for dewatering during construction activities will be confirmed prior to construction, as will the permitting/registration requirements. The requirements for dewatering during construction are dependent on the locations, depth and extent of excavation required for the Project.

The determination of which process is to be followed (PTTW or EASR) is based on the expected volume of water taking during dewatering. For takings between 50,000 litres/day and 400,000 litres/day, registration for the EASR is required, while takings above 400,000 litres/day are regulated by the PTTW process. For takings that will be in excess of 400,000 litres/day, a Category 3 PTTW is required in accordance with Section 34 of the OWRA. In addition, the permit application must be accompanied by a Groundwater Study completed by a qualified person (i.e., licensed Professional Geoscientist or accepted Professional Engineer as set out in the *Professional Geoscientists Act*, 2000 of Ontario).

A review by TRCA will also be required should dewatering be necessary during construction. This will be confirmed prior to the construction phase, following completion of the aforementioned Geotechnical Investigations and Hydrogeological Studies.

7.2.1.10 *Waste Transportation and Processing*

In accordance with *Ontario Regulation 347 - "General - Waste Management"* (O. Reg. 347), under the EPA, subject waste activities must be registered with the MECP. The HWIN allows excess subject waste generated on-site and requiring off-site removal to be registered with the MECP online and to pay hazardous waste fees as required under the Land Disposal Restrictions outlined in the EPA.

All waste materials will be manifested with records maintained by the Developer during construction of the Project and any subject waste identified during construction of the Project will be transported to a licensed facility for processing, transfer, or disposal.

7.2.1.11 *Endangered Species Act Permit*

The provincial ESA provides protection for SAR and their habitat. The Act provides policies for the protection of Extirpated, Endangered and Threatened Species, as well as management for species of Special Concern. Previously, MNRF held all of the formal responsibilities under the ESA including screening, permitting, and enforcement, these responsibilities were transferred to MECP on April 1, 2019.

Based on the work of COSSARO, the MECP maintains and updates the Species at Risk in Ontario (SARO) List. *Ontario Regulation 230/08* forms the official listing of Endangered, Threatened, Special Concern and Extirpated animals and plants in Ontario. Those species listed in the regulation as Endangered, Threatened, or Extirpated and their habitats (e.g.,

areas essential for breeding, rearing, feeding, hibernation, and migration) are automatically afforded legal protection under the ESA. The ESA (Subsection 9 (1)) states that it is illegal to kill, harm, harass, possess, transport, buy, sell any listed species, whether it is living or dead. In addition, it is illegal to harm the species' habitat (Ministry of Natural Resources, 2007) (Subsection 10(1)).

Species of special concern, the lowest risk category under the ESA, may be protected under other various existing laws (i.e., *Fish and Wildlife Conservation Act*, *MBCA*, *Fisheries Act*). Areas of significant habitat for species of special concern are protected under the PPS and OPs as SWH.

Threatened and/or Endangered species have been identified to potentially reside in the Study Area and as a result, have the potential to be affected by the GO Station. Further field surveys will be carried out prior to the construction phase to confirm the presence/absence of these species within the GO Station Study Area in accordance with the MECP species-specific survey windows and protocols. If SAR are confirmed present, and Project effects to SAR cannot be avoided, a permit from, or registration of activity with the MECP will be required. The Developer will continue to consult with the MECP and keep the Ministry informed of the results from all SAR surveys undertaken prior to the construction phase.

7.2.2 Ministry of Natural Resources and Forestry

7.2.2.1 Fish and Wildlife Conservation Act

A Licence to Collect Fish for Scientific Purposes would be required under the *Fish and Wildlife Conservation Act* (1997) to carry out the Project works if in-water works are proposed, which will be confirmed during detailed design. The MNRF issues these licenses to qualified professionals (i.e., Aquatic Ecologist/Biologist) for the purposes of collecting, documenting, and salvaging fish.

A Wildlife Scientific Collector's Authorization under the *Fish and Wildlife Conservation Act* may also be required to carry out the Project construction works and/or for research purposes (i.e., future wildlife species specific surveys prior to the construction phase). The MNRF will be consulted to determine if such authorization is required. For the purposes of the Project, wildlife salvages and documentation are not anticipated.

7.2.3 Ministry of Heritage, Sport, Tourism and Culture Industries

To address matters of provincial importance and as per Metrolinx's responsibility under Section 25.2 of the *Ontario Heritage Act*, a Stage 1 Archaeological Assessment and Cultural Heritage Report were prepared for the Study Area as documented in this EPR. These reports were submitted to the MHSTCI as a condition of licencing in accordance with Part VI of the *Ontario Heritage Act* (OHA), R.S.O. 1990, c 0.18.

Based on the Stage 1 Archaeological Assessment property inspection, it was determined that the Study Area does not retain archaeological potential on account of deep and

extensive land disturbance, slopes in excess of 20 degrees, or having been previously assessed.

The Developer shall only proceed with Project-related activities when the Archaeological Assessment is completed in compliance with MHSTCI requirements, and when:

- A letter has been sent by MHSTCI to the licensed archaeologist confirming that MTCS has added the Report to the Ontario Public Register of Archaeological Reports; and
- The Report states that there are no concerns regarding impacts to archaeological sites.

The Cultural Heritage Report identified one BHR (Water Tower) within the Study Area. Given that the water tower is over 50 metres from the Project footprint, no vibration impacts from construction activities are anticipated. In addition, the Park Lawn GO Station will not impact views to the water tower from the Gardiner Expressway or the Lakeshore West rail corridor. The Christie Water Tower will likely be relocated within the 2150 Lake Shore site. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified BHRs.

The Developer shall only proceed with Project-related activities when the Cultural Heritage Report has been completed in compliance with MHSTCI requirements, and when:

- A letter has been sent by MHSTCI to the licensed cultural heritage specialist confirming that MHSTCI has entered the report into the Pastport register; and;
- The Report states that there are no concerns regarding impacts to cultural heritage resources.

7.2.4 Ministry of Labour

7.2.4.1 Designated Substances

In accordance with O. Reg. 490/09, a designated substance survey will be completed for any buildings or structures that require demolition and this provision will be included in the Construction Contract Documents. This assessment is required by the Ministry of Labour to assess the exposure or likelihood of exposure of a worker to a designated substance in the workplace.

Where these assessments identify the presence of designated substances, all abatement/management plans for these substances shall be developed in accordance with the OHSA, R.S.O. 1990 and regulations.

7.3 Conservation Authority

The *Conservation Authorities Act* (CAA) is administered by the MECP and outlines the organization and delivery of programs and services that further the conservation, restoration, development, and management of natural resources in watersheds in Ontario.

The Project lies within the Jurisdiction of the TRCA, who administer development policy under O. Reg 166/06: *Toronto And Region Conservation Authority: Regulation Of*

Development, Interference With Wetlands And Alterations To Shorelines And Watercourses (O. Reg. 166/06).

The following section identifies the TRCA requirements for the Project, as summarized in Table 7-3

Table 7-3: Summary of Applicable Conservation Authority Permits and/or Approvals

Permit or Approval Required	Conservation Authority
O. Reg. 166/06 Permit Application Package, including: • Detailed Design Drawings • Slope Stability Analysis • Geotechnical Report • Fluvial Geomorphology and Meander Beltwidth Assessment • SWM Plan • ESC Plan • Tree Removal, Restoration and Compensation Plan • EMCP	TRCA

Under the CAA, conservation authorities have been established to manage watersheds throughout most of southern Ontario. In 2006, the MNRF approved revisions to the "Development, Interference and Alteration" regulations for each conservation authority, which enable conservation authorities to control development through a permitting process in areas prone to water-related natural hazards, such as shorelines, river and stream valleys, floodplains, watercourses, and wetlands. The conservation authority permitting process is designed to deal with issues related to flooding, erosion, dynamic beaches, pollution and "conservation of land".

The following TRCA permits and approvals will be considered:

- The Developer shall submit an application package in support of an O. Reg. 166/06 Development, Interference and Alterations permit for areas within the Study Area that fall within TRCA Regulated Lands;
- The application package will include the Detailed Design Drawings, Slope Stability Analysis, Geotechnical Report, and Fluvial Geomorphology and Meander Beltwidth Assessment;
- The SWM Plan for the discharge of water and wastewater from the Project will be prepared based upon the TRCA "Stormwater Management Criteria" (2012) (including water quantity, water quality, erosion control and water balance for groundwater and natural features, as well as the MOECC SWM Guidelines (2003). The SWM design will be submitted to the TRCA for conceptual and detailed design review and comment;
- As part of the SWM design submission, an ESC Plan will be prepared based upon the Erosion and Sediment Control Guideline for Urban Construction (December 2019) and

submitted to TRCA for their review and comment follow. As per the Guideline, an ESC Plan is required in addition to the ESC Plan drawing(s);

- In order to mitigate against canopy loss, and vegetative cover, and as part of an ongoing commitment, compensation will adhere to the Metrolinx Vegetation Guideline. It outlines items such as: tree and vegetation removal from within the ROW, from within woodlots, wetlands as well as trees immediately adjacent to Metrolinx-owned properties; compensation; and tree limb pruning protocols for construction. Vegetation that is removed will be compensated for in accordance with this Guideline. The TRCA will be consulted on restoration planting; and
- The TRCA will be engaged during detailed design in order to determine the scope of an Environmental Monitoring and Contingency Plan (EMCP) in accordance with TRCA Standards. The EMCP will be included as part of the O. Reg. 166/06 application package to be prepared during detailed design.

Communication and engagement with the TRCA will continue as design and construction planning progress to address matters related to their mandate.

7.4 Municipal

A range of municipal permits and approvals may be required for the Project, including development approvals and approvals pertaining to municipally owned lands and infrastructure. All required permits and approvals (Table 7-4 shall be obtained).

Table 7-4: Summary of Permits and/or Approvals

Permit or Approval	Municipality
Building Permit	City of Toronto
Site Plan Application	
SWM, ESC and Dewatering Plans	
Construction Permits	
Road Occupancy Permits (with Traffic Control and Management Plans)	
Tree Injury/Removal Permits - RNFP	
Zoning Approval	
Municipal Water and Sewer Connections Applications	
Sewer Use By-law and Sewer Discharge Agreement	
Official Plan Amendment (Green Space System)	
Municipal Consent Requirements Sign off	
Cut Permit	
Road Cut	
Right-of-Way Permits	

7.4.1 Municipal Water and Sewer Connections

Water, sanitary, and storm servicing will be reviewed during detailed design. The City of Toronto will be consulted during detailed design to address impacts to municipal water,

sanitary, and storm sewer systems. Municipal services to the GO Station buildings should be in compliance with the City of Toronto "Notice to Applicants Servicing Requirements for New Developments". Any discharge from dewatering to a City of Toronto sewer will be discharged in accordance with the applicable City of Toronto Sewer Use By-law. Communication and engagement with the City of Toronto shall continue as design and construction planning progress to address municipal interests.

7.4.2 **Municipal Tree Legislation**

Where permits are required on City of Toronto or private property lands within the Study Area, the Developer will work with stakeholders to obtain the necessary documents and approvals. Tree protection measures will follow municipal By-laws, regulations, and policies, including:

Toronto Municipal Code: Chapter 658, Ravine and Natural Feature Protection

As the Project Footprint is located within the RNFP area, a RNFP permit is likely required. Coordination with the City of Toronto and the TRCA should be completed in order to ensure all trees within natural areas are managed appropriately.

Toronto Municipal Code: Chapter 813, Article II: Trees on City Streets

As the Project will be located in close proximity to city streets, including the Gardiner Expressway, Lake Shore Boulevard West, and both sides of Park Lawn Road within the City of Toronto, a permit will be required for permission to injure, destroy, or remove trees.

Toronto Municipal Code: Chapter 813, Article III : Private Tree Protection

A permit will be required if any part of the trunk of the tree(s) that will be injured, destroyed, or removed is growing across one or more property lines.

Toronto Municipal Code: Chapter 608: Parks

The Project footprint does not include any parklands, therefore impacts to parklands are not anticipated. However, a permit will be required for the following:

- The removal or injury of trees on park property. Prior written approval will also be required for any tree-tagging activities within parklands; and
- The disturbance of wildlife or their habitat. This includes any attempt to harm, trap, move, or remove wildlife.

Compensation will be determined during detailed design once tree removals have been determined based on construction methods. Detailed restoration and compensation plans will be prepared prior to Project construction in discussion and coordination with the City of Toronto and TRCA using the expertise of an ISA Certified Arborist/Forester and/or licensed Landscape Architect. Restoration plans and compensation payments must be submitted prior to permit issuance.

7.5 **Utilities**

Coordination with both the City of Toronto and the relevant private utilities will be undertaken as design and construction planning progress. Potential utility conflicts shall be

reviewed in consultation with each utility company as part of detailed design. Implementation and construction obligations shall be undertaken pursuant to the crossing agreements with each of the utility companies as required. Any associated permits and approvals will be obtained prior to construction.

7.6 Transit Corporations

No permits or approvals are required. Future commitments related to transit are in Section 8 of this EPR.

8. Future Commitments

The future commitments outlined in this EPR have been developed to satisfy the requirements of O. Reg. 231/08 and will be carried out prior to, during and after construction. The potential effects and mitigation measures for the Park Lawn GO Station have been identified, evaluated, and assessed in the earlier sections of this EPR. It is anticipated that any changes to the design will not affect the original intent and commitments; however, these commitments should be reviewed further throughout detailed design and prior to construction to confirm completeness.

An EMMP will be developed which will summarize potential environmental impacts or approval requirements that arise during completion of the detailed design and the additional environmental studies, as required. All the required permits and approvals for the GO Station as contained with the EMMP will be obtained, and the EMMP will be updated once the permits and approvals are received, and/or findings from the additional environmental studies are available. Any additional mitigation measures or requirements, and any new monitoring or reporting requirements will also be included.

8.1 Summary of Future Commitments

Future commitments to be completed throughout detailed design and prior to construction, and during the construction phase of the GO Station are identified in Table 8-1 and Table 8-2, respectively. Table 8-3 provides a summary of future operations and maintenance commitments.

Table 8-1: Summary of Future Design Commitments

Feature	Future Design Commitment
Natural Environment	
Soils	Engage TRCA during detailed design to determine scope of an Environmental Monitoring and Contingency Plan.
	A Soil Management Plan (SMP) as defined by Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19) will be prepared by a Qualified Professional as defined in Ontario Regulation 153/04: Records of Site Condition (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for managing soil materials on site (includes excavation, location of stockpiles, reuse, and off-site disposal).
Groundwater	Stormwater management for the Station will be designed to meet the standards set forth in the Toronto Green Standard (City of Toronto, 2019) and the TRCA's stormwater management criteria (water quantity, water quality, erosion control and water balance for groundwater and natural features). The SWM report will include a water balance for the site. The SWM report prepared and stamped by a qualified professional engineer will be included as part of the submission for the O. Reg. 166/06 application package to be prepared during detailed design.
	Any discharge from dewatering will be discharged to a City of Toronto sewer in accordance with applicable City of Toronto Sewer Use By-Law.
	Approval of water takings will be in accordance with the MECP PTTW process or within the EASR framework.
	Consult with Project Manager for Drinking Water Source Protection at the Credit Valley, Toronto and Region, and Central Lake Ontario (CTC) source protection authority during detailed design to determine whether construction or operation of the Project may be considered a drinking water threat per the <i>Clean Water Act</i> .
	Smart About Salt certification will be obtained through the Smart About Salt program to reduce road salt application and manage impacts to the environment.
Watercourses, Hydrological Features and Aquatic Environment	A detailed ESC Plan will be prepared during detailed design, in consultation with the TRCA and 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. Erosion and sediment control measures will be implemented prior to Project construction and maintained during the construction phase in accordance with the ESC Plan.
	Further discussions on alternative locations for the south sloped walkway location will occur during detailed design to optimize the design considering TRCA, City of Toronto, passenger, utilities, safety, and property requirements.
	Supporting documentation for the reduction in platform width, including passenger flow modelling and code compliance, will be prepared as part of the 30% design submission for a Design Standard Deviation Request (DSDR) for review and, if acceptable, approval by Metrolinx.
	All in-water work must occur from July 1 to March 31 of any given year due to the warmwater classification of the watercourse in order to avoid sensitive life stages, such as migration, spawning and rearing.
	If in-water work will occur during construction - the area will be isolated using cofferdams and dewatered in accordance with a Dewatering Plan during detailed design.
	If construction methodology requires fill or work within the floodplain, further analysis will be completed in consultation with the TRCA, including cut-fill balance and hydraulic modelling, as part of detailed design.
	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.
	If in-water work determined to be required, engagement with Transport Canada, DFO and TRCA will be undertaken, further analyses will be identified and completed, and additional mitigation measures will be implemented to minimize potential effects to the watercourse.
	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).

Feature	Future Design Commitment
	A 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. A hydrocarbon spill response kit will be on-site at all times during the work. Spills will be reported to the Ontario Spills action Centre at 1 800 268 6060.
	All requirements under the OWRA, R.S.O. 1990, c. O.40 with respect to water taking, management and discharge will be met, including applicable permits.
	Detailed design plans, including construction methodology and staging, will be submitted as part of the O. Reg. 166/06 application to the TRCA in order to confirm that all work is in compliance with O. Reg. 166/06.
	Metrolinx is committed to having meaningful engagement with Curve Lake First Nation in the event that in-water works and restoration are required. If in-water works are required, then additional studies would be undertaken and will be circulated for input to Curve Lake First Nation.
	Metrolinx welcomes Curve Lake First Nation participation in meeting stormwater requirements and will provide SWM Plans to Curve Lake First Nation for input as a part of the review process for detail design.
Significant Wildlife and Terrestrial Environment	A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures. Ecological compensation will follow the basal area approach. The Vegetation Management Plan shall be submitted as part of the O. Reg. 166/06 application to the TRCA.
	Laydown areas will be reviewed with the TRCA, and the City related to RNFP Area development of detail design, and will be located to minimize impacts to natural environment and sensitive receivers.
	Adhere to relevant OPSS for clearing and grubbing (OPSS 201), and City of Toronto requirements for tree protection.
	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.
	Areas for vegetation removal will be defined during detailed design.
Wildlife	Additional studies to support detailed design will be completed in spring 2022 to identify if hibernaculum are located within the Project footprint. The results of the work will be included with the O. Reg. 166/06 application package for TRCA review.
	A Wildlife Management Plan shall be developed that includes exploring options for wildlife protection and enhancement during detailed design and followed accordingly. The Wildlife Management Plan shall be submitted as part of the O. Reg. 166/06 application to the TRCA.
	Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species' buffers and timing windows. During the detailed design phase of the Project, Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation.
	Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds.
	Metrolinx is committed to discussing and identifying species of concern with Curve Lake First Nation including culturally important or keystone species.
Significant Wildlife Habitat	Additional studies to support detailed design will be completed in spring 2022 to identify if hibernaculum are located within the Project footprint.
SAR	Detailed field surveys will be undertaken prior to Project construction by a qualified Ecologist to confirm the presence or absence of SAR Bats and findings of field surveys will be reported to the MECP.
	During the detailed design phase, construction (including pre-construction land clearing) will be designed to avoid the loss of any Confirmed Habitat of Endangered or Threatened Species to the extent possible. Where loss cannot be avoided, the MECP will be contacted and all requirements under the ESA will be met, including any species-specific registration, compensation and/or permitting requirements.
	Retain existing vegetation within the GO Station Study Area to the extent practicable. Where avoidance is not possible, vegetation removal will occur in accordance with the timing windows; and any construction laydown areas or easements located within the Candidate or Confirmed Habitat of Endangered or Threatened Species will be subject to applicable requirements under the ESA. Timing windows will be developed in consultation with the MECP.

Feature	Future Design Commitment
	Timing windows for any necessary removal of any confirmed Endangered or Threatened Species habitat will be developed in consultation with the MECP in association with any self-registration or permitting requirements. In order to mitigate impacts to American Eel, various mitigation measures shall be implemented if in-water works are required within Mimico Creek. These include sediment and erosion control measures, appropriate dewatering, and cofferdam installation if in-water works are required and adherence to sensitive timing windows for fish species throughout the creek.
	General wildlife mitigation during construction and operations will be implemented to minimize effects to all species. This includes avoiding sensitive breeding windows for all species regardless of their status under the <i>Species of Risk Act</i> .
Significant Natural Features / Ravine and Natural Feature Plan Area	Any herbicide applications to clear vegetation within the rail corridor ROW will be applied in accordance with industry BMPs and regulations including MECP requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas.
	An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan shall include site specific techniques and procedures outlining the removal and transportation of invasive species.
	Metrolinx is committed to having meaningful conversations with Indigenous Nations to understand and recognize that species deemed to be invasive may hold cultural value. Invasive species management plans, if required, will be shared with Curve Lake First Nation for review and input during detailed design.
	Additional opportunities to enhance the access route to Mimico Creek for maintenance of the existing toe wall structure should be further assessed during detailed design, as well as potential restoration measures.
	Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design. Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation.
	Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem, and this will be shared with Curve Lake First Nation for input and feedback.
	In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank.
Trees	An Arborist Report will be completed for all trees and shrubs (i.e., woody vegetation) that may be impacted by the GO Station infrastructure, including trees/shrubs to be preserved, removed, or injured.
	Further consultation with potentially impacted property owners will be undertaken when the detailed tree and shrub impacts are known.
	Inspection of Trees 1 – 4 by Urban Forestry to confirm their poor conditions to be completed prior to issuance of permit/approval.
	Timing windows for trees and shrubs that have been identified as part of the habitat of a SAR will be confirmed by the MECP.
	Engage with the appropriate authorities, as necessary, to obtain all applicable permits and approvals.
	Applicable TPZs will be established in accordance with the Metrolinx Vegetation Guideline (2020); barriers will be installed around trees to be protected using material approved by the City of Toronto; and no stockpiles, storage or disturbance to grade will occur within the TPZ to minimize soil compaction and root damage.
	Where permits are required on City of Toronto or private property lands within the Study Area, the Developer will work with stakeholders to obtain the necessary documents and approvals. Tree protection measures will follow the municipal By-laws, regulations, and policies.
	Detailed restoration and compensation plans will be prepared prior to Project construction in discussion and coordination with the City of Toronto and TRCA using the expertise of an ISA Certified Arborist/Forester and/or licensed Landscape Architect.

Feature	Future Design Commitment
	Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design. Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation.
	Metrolinx will work with the TRCA to develop a habitat restoration and compensation plan that benefits the ecosystem, and this will be shared with Curve Lake First Nation for input and feedback.
Cultural Environment	
Archaeological Resources	If final limits of the GO Station are altered and fall outside the current Study Area, an additional Stage 1 Archaeological Assessment is required to assess these areas.
Cultural Heritage Resources	Should future work require an expansion of the Study Area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on heritage resources.
Social and Built Environment	
Socio-Economic and Land Use Characteristics	The Developer will confirm specific property requirements prior to Project construction to determine predicted property impacts.
	The Developer will engage and negotiate with affected property owners regarding land acquisition and easements/TLIs required for the proposed works, and provide fair market value compensation to affected property owners in accordance with applicable laws.
	The Developer will confirm potential conflicts with the proposed development applications and engage and negotiate with appropriate parties regarding land acquisition in advance of Project construction.
	Prepare and implement a Construction Traffic Management Plan.
	Prepare and implement a Dust Management Plan.
	Locate stockpile and laydown areas away from Park Lawn Road and Lake Shore Boulevard West.
	Potential effects to utilities during construction should be confirmed through detailed design.
	Connection Applications will be submitted, as required, to the applicable utility companies for the purposes of any new services required for the Station. In addition to the hydro and gas service connections discussed below, connections may also be required for other services including telephone and communications to the various sites. Any excavation for utilities requires approval of a Municipal Consent Application (including applicable drawings that show where the utility will be placed) that gives permission to install new or move existing utilities and to carry out excavations within a municipal roadway.
	Connection Applications will be prepared and submitted to the relevant hydro provider (i.e., Toronto Hydro) for any new hydro connections required for the Project. A Connection Cost Recovery Agreement will be required to secure funding and to contract for engineering, construction and commissioning work carried out by the hydro provider. Prior to connection, Metrolinx will enter into a Transmission Connection Agreement for ongoing operations with the applicable provider.
	Connection Application will be prepared and submitted to the relevant gas provider (i.e., Enbridge Gas and/or Union Gas) for any new gas connections required for the Project. A Connection Cost Recovery Agreement will be required to secure funding and to contract for engineering, construction and commissioning work carried out by the gas provider. Prior to connection, Metrolinx will enter into a Connection Agreement for ongoing operations with the applicable gas provider.
	A Municipal Service Application will be prepared and submitted to the City of Toronto for any water and sewer connections required for the Project. This application is to be made in person and will include a Site Service Plan showing the location of required site services and invert elevations for review by the applicable municipality. The municipality will complete a pre-construction inspection and site meeting with the Developer to finalize the installation of water and sewer service. Subsequent to the connection being installed, the Developer will request a water turn on from the water authority. Any discharge from dewatering to a municipal sewer will be discharged in accordance with the applicable municipal by-law.
	Confirm all abandoned watermains are not in service with the City of Toronto Transportation services and Utility Companies prior to removals.

Feature	Future Design Commitment
	Consult with the City of Toronto to confirm where Transfer of Review may apply to the proposed work.
	The Developer will continue to consult with affected parties prior to Project construction to further enhance and develop applicable mitigation measures for nuisance effects (i.e., noise, vibration, dust).
	If restoration of Open Space lands required, restoration shall meet TRCA/RNFP/City Standards.
Air Quality, Noise, and Vibration	A communications protocol will be implemented to provide advance notification of construction works to affected persons to inform them of the timing and duration of construction activities including anticipated noise and vibration effects.
	The Station public address system, ancillary systems, and any other stationary noise sources selected during final design shall be designed so that the one-hour equivalent sound level does not exceed the higher of the applicable exclusion limit value given in NPC-300, or the background sound level.
	A Construction Noise and Vibration Control Plan will be developed prior to construction. The plan will include verification procedures, monitoring instrumentation and monitoring duration, procedures to follow when exceedances are identified and a complaint protocol.
	Mitigation measures will be investigated to reduce the noise effects at identified sensitive areas.
	Mitigation measures will be investigated to reduce the vibration effects at identified sensitive areas.
	Wherever feasible, design suitable foundations for infrastructure that minimizes the need or extent of pile driving.
	Implementation of dust suppression measures to control fugitive dust emissions.
	Stockpiling of soil and other friable materials in locations that are less exposed to wind and far from sensitive receptors.
Traffic and Transportation Infrastructure	The Developer will ensure that the recommendations contained in the Transportation Brief are shared with the City of Toronto, for their consideration in mitigating traffic impacts.
	Recommendations regarding the maintenance and improvement of active transportation facilities in the Transportation Brief (Appendix H) of this EPR will be shared with the City of Toronto for their consideration in enhancing active transportation connections in the GO Station Study Area.
	Preparation of traffic control plans to be prepared during detailed design.
	Project Team to continue discussions with the City and TRCA regarding the pedestrian access west of Park Lawn Road during detailed design.
	Further discussions will be required in relation to construction methodology, sequencing and requirements will be conducted with the City of Toronto during detailed design to finalize access arrangements and requirements.
	Passenger Flow and Capacity Analysis Report to be prepared during detailed design.
	Consult with City of Toronto and Toronto Public Bike Share during detailed design.
	Further discussion and coordination required with City of Toronto related to ongoing studies, related to road right-of-way width requirements in/around the GO Station.
Climate Change	
Climate Change	Contractors will adhere to the GO Design Requirements Manual during the design phase.
	A detailed SWM Plan will be developed prior to the construction phase of the Project so that runoff from rainfall is controlled based on predicted future scenarios, to promote climate resilience.

Table 8-2: Summary of Future Construction Commitments

Feature	Future Construction Commitment
Natural Environment	
Soils	Erosion and Sediment Control drawings and a report (ESC Plan) which follow the Erosion and Sediment Control Guideline for Urban Construction, December 2019, will be developed as part of the O. Reg.166/06 application to detail the mitigation measures required during construction. The ESC measures will be implemented prior to Project construction and maintained during the construction phase in accordance with an ESC Plan. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed.
	Disturbed areas within the construction site will be stabilized and re-vegetated as soon as conditions allow.
	The ESC measures will be left in place until disturbed areas within the construction site have been stabilized and will then be removed.
	Deleterious substances (including stockpiled material) will be used and stored in a manner that prevents any of the substances from entering a natural feature (at least 30 m away from Mimico Creek).
	Environmental Inspector to confirm all activities conducted in accordance with mitigation plans, and that ESC measures functioning properly, maintained throughout construction phase, and all work conducted within the specified work zone.
	Wet weather restrictions shall be applied during site preparation and excavation.
	Refueling is to occur at least 30 m from a watercourse; if this distance cannot be maintained, a spill tray is to be placed under the fueling point.
	A 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. A hydrocarbon spill response kit will be on-site at all times during the work. Spills will be reported to the Ontario Spills Action Centre at 1-800-268-6060.
Groundwater	A site-specific Dewatering Management Plan shall be followed in order to determine groundwater levels and aquifer recharge rates to mitigate any impacts to groundwater quantity.
	Mitigation measures for ESC will be sufficient to mitigate any potential contamination of groundwater. A detailed ESC Plan will be prepared during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed.
	Environmental Inspector to be on-site during any dewatering within 120 m of nature features, to check that filter bag working properly and no sediment entering significant natural features.
	Environmental Inspector to conduct regular inspections, to confirm all activities conducted in accordance with mitigation plans, ESC measures functioning properly and maintained throughout construction phase, and all work conducted within specified work zone.
Watercourses, Hydrological Features and Aquatic Environment	Wet weather restrictions will be applied during site preparation and excavation. Work will be avoided in valleylands and watercourses during periods of excessive precipitation and/or excessive snow melt.
	The footprint of disturbed areas will be minimized to the extent possible. Vegetated buffers will be left in place adjacent to watercourses/waterbodies to the maximum extent possible.
	Hazardous material and fuel storage, refueling and maintenance of equipment will occur within designated areas only.
	All requirements under the OWRA, R.S.O. 1990, c. O.40 with respect to water taking, management and discharge will be met.
	Spills or depositions into natural features/areas 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 Spills Action Centre at 1 800-268-6060.
	In-water work must occur from July 1 to March 31 of any given year due to warmwater classification of watercourse in order to avoid sensitive life stages such as migration, spawning and rearing.
	If in-water work will occur during construction, the area will be isolated using cofferdams and dewatered in accordance with a Dewatering Plan prepared during detailed design.

Feature	Future Construction Commitment
	Fish removals will be conducted by qualified biologists in isolated areas prior to dewatering. All fish will be enumerated and reported in accordance with the MNRF. A Licence to Collect Fish for Scientific Purposes will be obtained from the MNRF if fish relocations are required. Fish will be released unharmed into suitable habitat downstream of the work area. If an invasive species is encountered during the fish relocation it will be euthanized and removed from the watercourse in accordance with MNRF conditions.
	The work area shall be delineated and workers shall be made aware of the limits to construction activities.
	Heavy machinery or equipment requiring fuel shall be stored at a minimum of 30 m from the watercourse.
	Where feasible, site preparation shall be phased for the winter months to avoid impacts to aquatic wildlife in the summer months.
	Riparian vegetation removal shall be kept at the minimum required for construction.
	SWM Plan to be prepared in accordance with guidelines and the Christie Secondary Plan.
	Metrolinx will work with Curve Lake First Nation to coordinate future environmental construction inspections, understanding that 48-hour notice is needed for safety requirements.
Significant Wildlife and Terrestrial Environment	If the ESC measures or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed. Erosion and sediment control measures will be left in place until all areas within the construction site have been stabilized and will then be removed.
	Disturbed areas within the construction site will be revegetated as soon as conditions allow.
	Any herbicide applications to clear vegetation within the corridor ROW will be applied in accordance with industry BMPs and regulations including TRCA requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas.
	Any equipment will be thoroughly cleaned prior to entering the site and when being transported between sites. Equipment cleaning must occur at least 30 m from Mimico Creek.
	If an invasive species is removed, the species will be disposed of appropriately in an off-site location.
	Where revegetation is required, a native seed mix, which does not contain invasive species, will be used.
	Post planting monitoring of restoration areas for two years after installation to confirm survival of plantings and/or seed mix, one year thereafter with one additional monitoring visit in the following growing season. Should the plantings and/or seed mix not survive, additional seeding and/or plantings will be undertaken, and the two year ‘warranty’ period will restart. Mandatory inspection by City of Toronto Urban Forestry after the two-year period will confirm whether the state of the planting is acceptable, and an 80% survival rate for RNFP areas will be required
	In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank.
Wildlife	Dust from the work areas will be controlled through suppressants (e.g., water).
	The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits by a qualified Ecologist.
	Exclusionary fencing shall be installed to eliminate access to the Project area in advance of construction to prevent reptiles, amphibians, and some mammals to the site.
	Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site.
	Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions
	Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds. If vegetation must be removed during the breeding bird timing window: Nest and nesting activity searches will be conducted in areas defined as simple habitat by a qualified Ecologist/Avian Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of confirmed breeding evidence, as defined by OBBA criteria.

Feature	Future Construction Commitment
	Suitable human-made structures within the Study Area shall be inspected by a qualified Ecologist/Avian Biologist for evidence of active bird nests during the breeding bird timing window prior to the onset of construction activities in order to determine appropriate nesting preventative measures (e.g., netting).
Significant Wildlife Habitat	The site shall be swept prior to each day to ensure no reptiles are found within the construction limits by a qualified Ecologist.
	Exclusionary fencing shall be installed to eliminate access to the Project area in advance of construction to prevent reptiles, amphibians, and some mammals to the site.
	Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site.
SAR	Should a SAR be encountered that is not identified on relevant permits, all work will cease within the immediate work area and the MECP will be contacted: - In the case of SAR Birds: all activities will stop and the Contractor (with assistance from a qualified Ecologist/Avian Biologist) will discuss mitigation measures with the Environmental Inspector. In addition, the MECP and ECCC (if the species is considered a migratory bird) will be contacted to discuss applicable mitigation options. The Contractor will proceed based on the mitigation measures established through discussions with the MECP and/or ECCC. - Candidate Bank Swallow Habitat and Barn Swallow habitat shall be identified to all construction personnel prior to construction activities. Workers will also be trained in the identification of all potential SAR within the Study Area.
Significant Natural Features / Ravine and Natural Feature Plan Area	An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan shall include site specific techniques and procedures outlining the removal and transportation of invasive species.
	Metrolinx is committed to having meaningful conversations with Indigenous Nations to understand and recognize that species deemed to be invasive may hold cultural value. Invasive species management plans, if required, will be shared with Curve Lake First Nation for review and input during detailed design.
	All disturbed areas within the construction site will be re vegetated as soon as conditions allow.
Trees	If determined that trees require pruning, trees shall be pruned in a manner that minimizes physical damage and promotes quick wound closure and regeneration. If earthworks are required immediately adjacent to a TPZ, and there is a potential to encounter roots, it is recommended that an exploratory exercise with an air spade be conducted.
	Prior to construction, a site meeting shall be held with the Contractor(s) and Contract Administrator to review the clearing limits and confirm the installation location for the tree protection barrier.
	Any tree clearing, or limb trimming will be limited to meet necessary safety clearances. Trees will be trimmed by a Qualified Professional to limit tree damage.
	Inspection of the tree protection barrier, including photographic records and deficiency notes, shall be undertaken by the site supervisor, and submitted to the Contract Administrator prior to the commencement of construction, during construction and after construction is completed.
	All removals should be felled into the work area to ensure that damage does not occur to the trees within the TPZ. Upon completion of the tree removals, all felled trees are to be removed from the site, and all brush chipped. All brush, roots and wood debris should be shredded into pieces that are smaller than 25 mm in size to ensure that any insect pests that could be present within the wood are destroyed.
	Nest and nesting activity searches will be conducted in areas defines as simple habitat by a qualified Ecologist/Avian Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of confirmed breeding evidence, as defined by Atlas of the Breeding Birds of Ontario (OBBA) criteria.
	On-site inspection as required 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 silt fencing will be repaired if damaged. Damaged/injured trees will be assessed b y an ISA Certified Arborist who will provide management recommendations and direction following City by-laws, standards, and practice.
	Ash trees, leaves, logs, or wood chips will not be removed out of the Regulated Area, as identified on the CFIA website (Canadian Food Inspection Agency, 2015). This is necessary to prevent the spread of the EAB to un-infested areas in Ontario. The Contractor must dispose of all wood at a registered Waste Facility.

Feature	Future Construction Commitment
	Tree protection barriers will be installed as per the construction specifications and applicable City of Toronto specifications. All supports and bracing to safely secure the barrier will be placed outside the TPZ.
	During removal operations efforts should be made to prevent the spread of invasive plant species during construction both on and off-site. Sanitation of construction equipment should be undertaken in accordance with the Clean Equipment Protocol (OIPC, 2016) and at a minimum should include sanitation of construction vehicles and equipment prior to leaving and moving to the next site. A cleaning station should be set up, so vehicles and equipment can be inspected and cleaned regularly.
	On-site inspection as required by City of Toronto Urban Forestry to confirm the condition of trees in poor health and determine whether pruning is appropriate prior to permit issuance or approval.
Cultural Environment	
Archaeological Resources	No construction activities shall take place within the Study Area prior to the MHSTCI confirming in writing that all archaeological requirements have been met.
	Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the <i>Ontario Heritage Act</i> . The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.
	In the event that archaeological remains are discovered during construction activities, the consultant archaeologists, approval authority and the MHSTCI should be notified immediately.
	<i>The Funeral, Burial and Cremation Services Act</i> , 2002, S.O. 2002, c.33 require that any person discovering human remains must notify the police or coroner and the Registrar, Burials of the Ministry of Government and Consumer Services.
Cultural Heritage Resources	N/A
Social and Built Environment	
Air Quality, Noise and Vibration	Construction BMPs will be utilized to mitigate potential air quality effects associated with the construction activities related to the GO Station.
	Construction BMPs will be utilized to minimize any adverse effects from construction noise at nearby sensitive receptors, and construction vibration at nearby sensitive receptors.
	A DMP will be developed for construction. Dust suppression methods will be implemented as needed to control fugitive dust emissions in accordance with the publication “Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities” (Cheminfo Services Inc., 2005).
	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 they are functioning as intended. In the event that mitigation measures and/or construction BMPs are not functioning as intended (and are ineffective), the Contractor will be notified to implement revised mitigation measures/BMPs designed to improve their overall effectiveness. Dust levels will be monitored daily to assess the effectiveness of dust suppression measures, and adjust as required. Monitoring will continue throughout the construction phase until activities are complete, all exposed soils have been stabilized, and all construction waste has been cleaned up. A complaint response protocol for nuisance effects such as dust, will be established.
	A more detailed noise assessment of construction activities to be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment will consider minimizing construction-related noise levels, while balancing construction schedules and expediting construction activity.
	Complying with the applicable municipal by-laws as they relate to construction activities and timing prohibitions. Scheduling activities that are expected to be particularly noisy during the day. Best efforts will be made to minimize impacts on neighbourhoods by limiting nighttime noisy activities. Notification of nighttime construction will be provided in advance.
	Provide advance notification and signage for lane and road closures.
	Maintain access to residential and commercial buildings.
	‘Type 1’ noise and vibration monitoring at 88-90 Park Lawn Road and 96 Park Lawn Road.

Feature	Future Construction Commitment
	Monitoring to continue throughout construction phase until activities are complete, exposed soils have been stabilized and construction waste has been cleaned up.
	Construction-related noise, vibration, dust and diminished air quality effects will be managed to confirm compliance with provincial regulations, local by-laws and noise, vibration and air quality monitoring will reflect Metrolinx' Environmental Guide for Noise and Vibration Impact Assessment.
Traffic and Transportation Infrastructure	Local transit should be notified well in advance of Project construction or road closures. All road closures due to Project construction should be coordinated with local transit to identify the best detour routes for transit vehicles, and to minimize transit travel time while maintaining a high LOS for transit users. Requirements to enact mitigation measures during construction should be incorporated into the development of the Project Specific Output Specifications, and Project Agreement during future phases of Project development.
	Prepare and implement emergency response and incident management plans during construction to assist emergency service providers in response to incidents and emergencies.
	Development of a CTMP which will include providing pedestrian and cyclist access through work zones, alerting local transit of potential travel delays/service disruptions in advance of Project construction including road closures; identification of best detour routes for transit vehicles that minimizes travel time and service disruptions should be identified. The CTMP will be shared with relevant municipalities and transit authorities.
Climate Change	
Climate Change	Contractors will adhere to the GO Design Requirements Manual (DRM) during the construction phase.
	Vegetation that is removed will be compensated for in accordance with the provisions of the Metrolinx Vegetation Guideline (2020).
	An ESC Plan will be development and implemented.

Table 8-3: Summary of Future Operations and Maintenance Commitments

Feature	Future Operations and Maintenance Commitments
Natural Environment	
Significant Wildlife and Terrestrial Environment	Spills or depositions into natural features/areas 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 Spills Action Centre at 1-800-268-6060.
	An Emergency Response and Communications Plan will be developed and followed throughout the operations and maintenance phase (includes spill response and contingency plans).
	Any herbicide applications to clear vegetation within the GO Station lands will be applied in accordance with industry BMPs and regulations.
	Any major maintenance work that would result in the replacement or upgrade of major infrastructure components requiring earth-moving work will be conducted in accordance with the applicable mitigation construction commitments.
Watercourses, Hydrological Features and Aquatic Environment	All requirements under the OWRA, R.S.O. 1990, c. O.40 with respect to water taking, management and discharge will be met, including applicable permits.
	An Emergency Response and Communications Plan will be developed and followed throughout the operations and maintenance phase (includes spill response, contaminant management and contingency plans).
	Hazardous material and fuel storage, refueling and maintenance of equipment will occur within designated areas only.
	Metrolinx is committed to protecting infrastructure supporting rail operations. Metrolinx observes the condition of the toe wall at Mimico Creek on route to the annual bridge inspection of the rail carrying bridge and wingwalls. Any imminent failures would be reported, and repair options assessed. An inspection report for the retaining wall structures at Mimico Creek is completed on a five-year cycle. If observations during the five-year inspection reports point to maintenance or repairs, Metrolinx will assess best methods to stabilize the retaining wall and/or slope. The tracks are also to be inspected at least twice a week.
	Metrolinx welcomes future discussions on Mimico creek with Curve Lake First Nation. Should restoration be required, excluding emergency works, Curve Lake First Nation will be asked to review restoration plans.
Trees	Maintenance, seasonal pruning, or removal may be required to prevent woody material falling onto rail corridor and GO Station property. Pruning and felling will be carried out by or under the direction of an ISA Certified Arborist. Tree and shrub replacement may be required to compensate adjacent landowners if the condition of off-site Trees and shrubs deteriorates as a result of Project implementation, and compensation will be determined in accordance with the Vegetation Compensation Protocol.
Cultural Environment	
Archaeological Resources	N/A
Cultural Heritage Resources	N/A
Social and Built Environment	
Air Quality, Noise and Vibration	Operations and maintenance of the GO Station will be carried out in accordance with applicable regulations and standards, including Ontario's AAQC (PIBS#6570e01) (MOE, 2016).
Traffic and Transportation Infrastructure	Decision required related to PUDO ownership and enforcement between the Developer and Metrolinx.
	Monitoring of usage of PUDO space shall be conducted as part of Metrolinx' ridership monitoring program.
Climate Change	
Climate Change	Appropriate ESC measures will be installed and monitored.
	LEED certification as required by the DRM, will include consideration of water conservation measures to reduce effects of drought on the Project, such as:

Feature	Future Operations and Maintenance Commitments
	• Metering indoor and outdoor water use to better track and manage the impacts of extended droughts on operations and landscape plantings; • Using water conserving systems to reduce consumption; and • Planting drought resistant vegetation.

8.1.1 Notice of Completion of the Environmental Project Report

The Notice of Completion of the EPR is planned for December 16th, 2021. The Notice was placed in the *Etobicoke Guardian* on December 16th and 23rd, 2021, as well as *Le Metropolitain* on December 16th and 23rd, 2021. A copy of the Notices are included in Appendix L of this EPR. The Notice of Completion was sent by email to the Project Contact List, including agencies, stakeholders, Indigenous Nations, and those who requested to be added. In addition, a letter was provided to property owners within 30m of the Project footprint, as well as unaddressed admail through Canada Post for residents within 200m of the Project footprint. Comments from the public, stakeholders, agencies and Indigenous Nations will be welcomed from December 17th, 2021 to January 17, 2022.

9. References

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