# Park Lawn GO Station

## DRAFT ENVIRONMENTAL PROJECT REPORT

AUGUST 2021

FIRST CAPITAL | METROLINX

# First Capital
# Park Lawn GO Station

## 95% Draft Final Environmental Project Report

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# Executive Summary

## ES Section 1- Introduction and Project Overview

First Capital (Park Lawn) Corporation (FCR) 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 FCR 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. FCR 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 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 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 4 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). 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
- Local Transit Connections

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 Relief Road. 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 the three adjacent land owners, including the City of Toronto, TRCA 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 consultation activities initiated as part of the Project are summarized. As part of the TPAP, public and stakeholder consultation allows the proponent to consult 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 and engagement with the public, stakeholders, and Indigenous Nations during the pre-TPAP and TPAP phases of the Project.

The consultation program was initiated in the spring of 2020 and will continue until the end of 2021.

Metrolinx worked to identify a list of Indigenous Nations that may have an interest in the proposed Park Lawn GO Station. As a result the following communities were identified:

- Haudenosaunee Confederacy Chiefs Council
- Huron-Wendat Nation
- Kawartha Nishnawbe First Nation
- Mississaugas of the Credit First Nation
- Six Nations of the Grand River
- Alderville First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of 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 for regulatory agencies, City of Toronto, Indigenous Nations, 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 was compiled following consultation with the Director of the Ministry of the Environment, Conservation and Parks

(MECP) Environmental Assessment Branch regarding the identification of Indigenous Nations, agency consultation and review of previous contact lists for similar projects following the TPAP.

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 well as at key milestones during 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.

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.

### 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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# Glossary of Terms and Acronyms

| | |
|---|---|
| AA: | Archaeological Assessment |
| 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: | *Accessibility for Ontarians with Disabilities Act* |
| 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: | *Conservation Authorities Act* |
| 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 |

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| CHR: | Cultural Heritage Resource |
| 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 $2x10^{-5}$ 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. |
| DFO: | Fisheries and Oceans Canada |
| DHB: | Diameter at Breast Height |
| DMP: | Sut Management Plan |
| EA: | Environmental Assessment |
| EAA: | *Environmental Assessment Act* (Ontario) |
| EAB: | Emerald Ash Borer |
| EASR: | Environmental Activity and Sector Registry |
| ECA: | Environmental Compliance Approval |
| ECCC: | Environment and Climate Change Canada |

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| 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: | *Endangered Species Act* |
| Etc.: | et cetera |
| FCR: | First Capital (Park Lawn) Corporation |
| 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. |

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| HVAC: | Heating, ventilation, and air-conditioning |
| 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: | *Migratory Birds Convention Act* |
| MHSTCI: | Ministry of Heritage, Sport, Tourism and Culture Industries |
| MMAH: | Ministry of Municipal Affairs and Housing |
| MNR/MNRF: | Ministry of Natural Resources/Ministry of Natural Resources and Forestry. The Department of Lands and Forests became the Ministry of Natural Resources in in 1972. The Ministry of Natural resources changed its name to the Ministry of Natural Resources and Forestry on June 24, 2014. Thus, MNR and MNRF 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 |

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| | 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 |
| $N_2O$: | 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 |

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| 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: | Ontario Water Resources Act |
| 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: | *Planning Act* |
| 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). |

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| 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: | *Species at Risk Act* |
| 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 |

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| 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). |
| $\mu g/m^3$: | Micro-gram per cubic metre |

# 1. Introduction

First Capital (Park Lawn) Corporation (FCR) 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 FCR 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. FCR 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;
- Sloped walkways north and south of the rail corridor, and 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 can 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 (AA) | 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*

First Capital 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.

*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.*

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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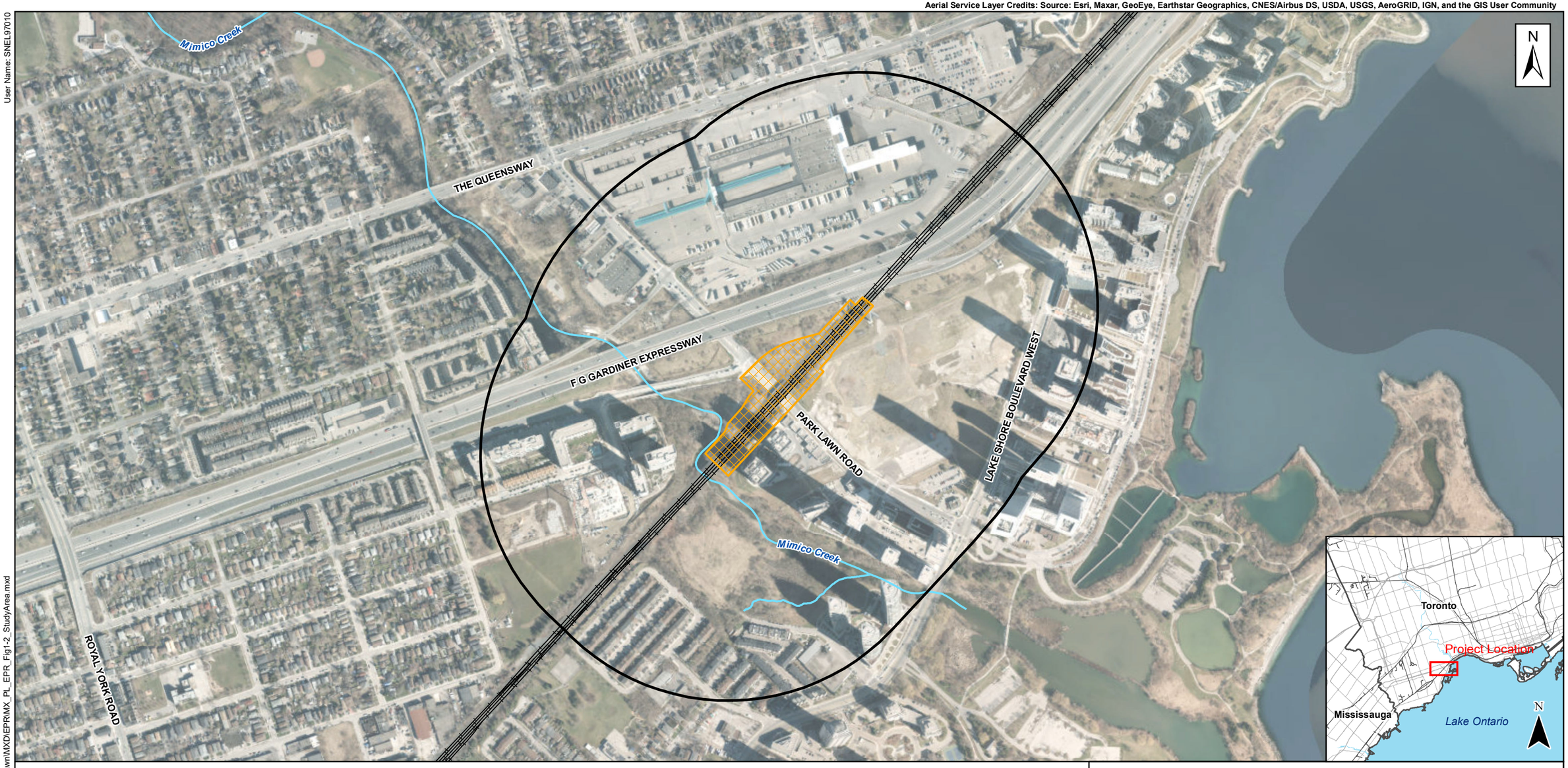


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**LEGEND**

- 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.

0 90 180 360 Meters

1:7,000

| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Study Area** | | |
| **Prepared By:** HATCH | | **Date:** August 19, 2021 | |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 1-2 | **Page:** 1 of 1 |

# 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.

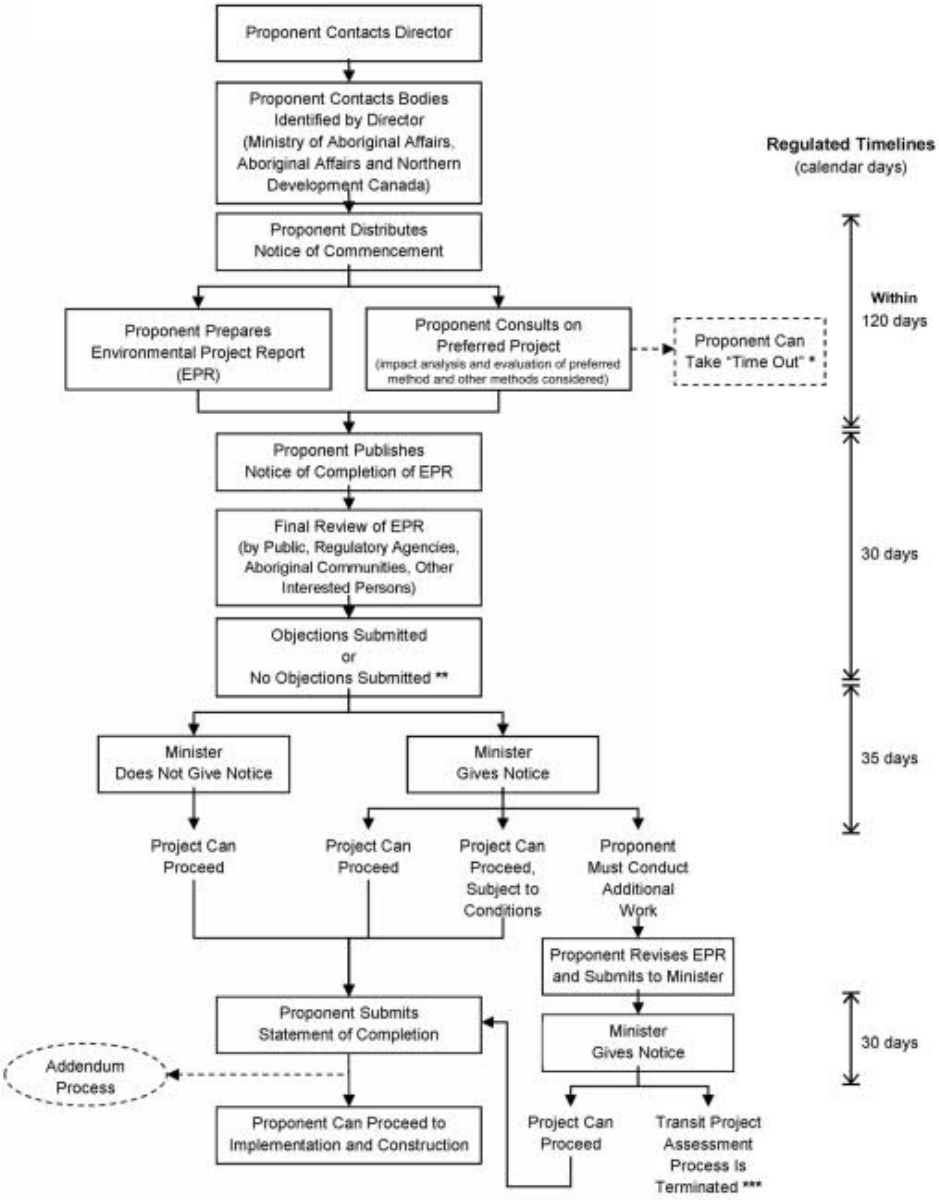



**Figure 2-1: Transit Project Assessment Process (Figure 2 of the TPAP Guide)**

### *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 period 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; and
- Appendix K: Stakeholder Consultation 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:<br>• The assessment and evaluation of the impacts of the transit project and other methods considered;<br>• The criteria for the assessment and evaluation of those impacts;<br>• Any studies completed with respect to those impacts.<br><br>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.<br><br>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.<br><br>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.<br><br>O. Reg. 231/08, s. 8 (5a) | N/A |
| Discussing with Aboriginal communities any measures identified by the Aboriginal community for mitigating potential negative impacts on constitutionally protected Aboriginal or treaty rights.<br><br>O. Reg. 231/08, s. 8 (5a & b) | N/A |

Key consultation initiatives involved with the Project include:

- A preparation of a Master Contact List which housed all stakeholder and community 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 the fall of 2020, ending in 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. | TBC |
| 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 |
| If a "time out" was taken during the transit project assessment process, a summary of each issue including:<br>• A description of the issue;<br>• A description of what the proponent did to respond to the issue and the results of those efforts;<br>• 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 facilitates 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: Heathy 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).

Polices 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:<br>•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.<br>Section 5.10.2 and 5.12 as well as Table 8-2 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<br>ecological conditions, such modifications may be considered where it can be demonstrated to the satisfaction of TRCA that:<br>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.<br>Section 3.1.3.3 provides a description of alternatives considered for the sloped walkways to arrive at the proposed configuration.<br>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.<br>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.<br>Section 3.1.3.3 provides a description of alternatives considered for the sloped walkways to arrive at the proposed configuration.<br>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.<br>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 e) | 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 Assessment (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.<br>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 *infrastructure* 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 *infrastructure* and is located within the Mimico Creek valley system. |
| 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 *infrastructure* 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 *infrastructure* and a small portion of TRCA lands on the south side of the existing railway embankment 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:<br>i. cause no upstream or down stream impacts to flooding and erosion;<br>ii. ensure safe conveyance of flood flows;<br>iii. be situated at appropriate locations to avoid natural hazards;<br>iv. maintain the ecological and hydrological functions of the valley or stream corridor by considering the following in accordance with TRCA Standards:<br>• physical characteristics of the watercourse;<br>• geomorphic processes of the watercourse;<br>• aquatic and terrestrial habitat;<br>• valley or stream corridor form;<br>• aquatic and terrestrial wildlife passage; and<br>• pedestrian passage (e.g. trails). | The proposed project is considered *transportation infrastructure* 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 Assessment (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 Assessment (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 *infrastructure* 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:<br>a) there is no increase in risk associated with flood hazards and erosion hazards to upstream or downstream properties within valley and stream corridors;<br>b) there is no impediment to the safe passage of flood flows;<br>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;<br>f) infrastructure has been designed in a manner that:<br>i. does not decrease the base flow characteristics of watercourses;<br>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;<br>iii. considers options for remediation of existing natural hazards;<br>iv. minimizes the area of construction disturbance and vegetation removal;<br>v. maintains the predevelopment configuration of the flood plain, valley or stream corridors and the topography along the Lake Ontario shoreline;<br>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 *infrastructure* 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 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.<br>- Section 3.1.3.3 provides a description of alternatives considered for the sloped walkways to arrive at the proposed configuration.<br>- 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.<br>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.<br><br>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 Section 8.1) of the EPR. |

| Policy # | The Living City Policy Clause | Applicability to Project |
|---|---|---|
| | vii. does not prevent access for maintenance, evacuation, or during an emergency;<br>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<br>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;<br>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<br>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 *infrastructure* project |

## 2.3 City of Toronto

### *2.3.1 City of Toronto Official Plan, 2015*

The City's Official Plan 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 Official Plan 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, 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.

As per Policy 2.3.2.4, the OP notes that City owned land in the Green Space System, including Parks and Open Space Areas cannot be sold or disposed of, but lands may be exchanged for other nearby land of equivalent or larger area.

#### *2.3.1.1 Christie Secondary Plan*

An Official Plan Amendment 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 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 consist. 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 beyond the signals, which contravenes operation rules on the corridor, and effects operation of the two inner tracks. Both Option 1 and Option 2A 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.

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.

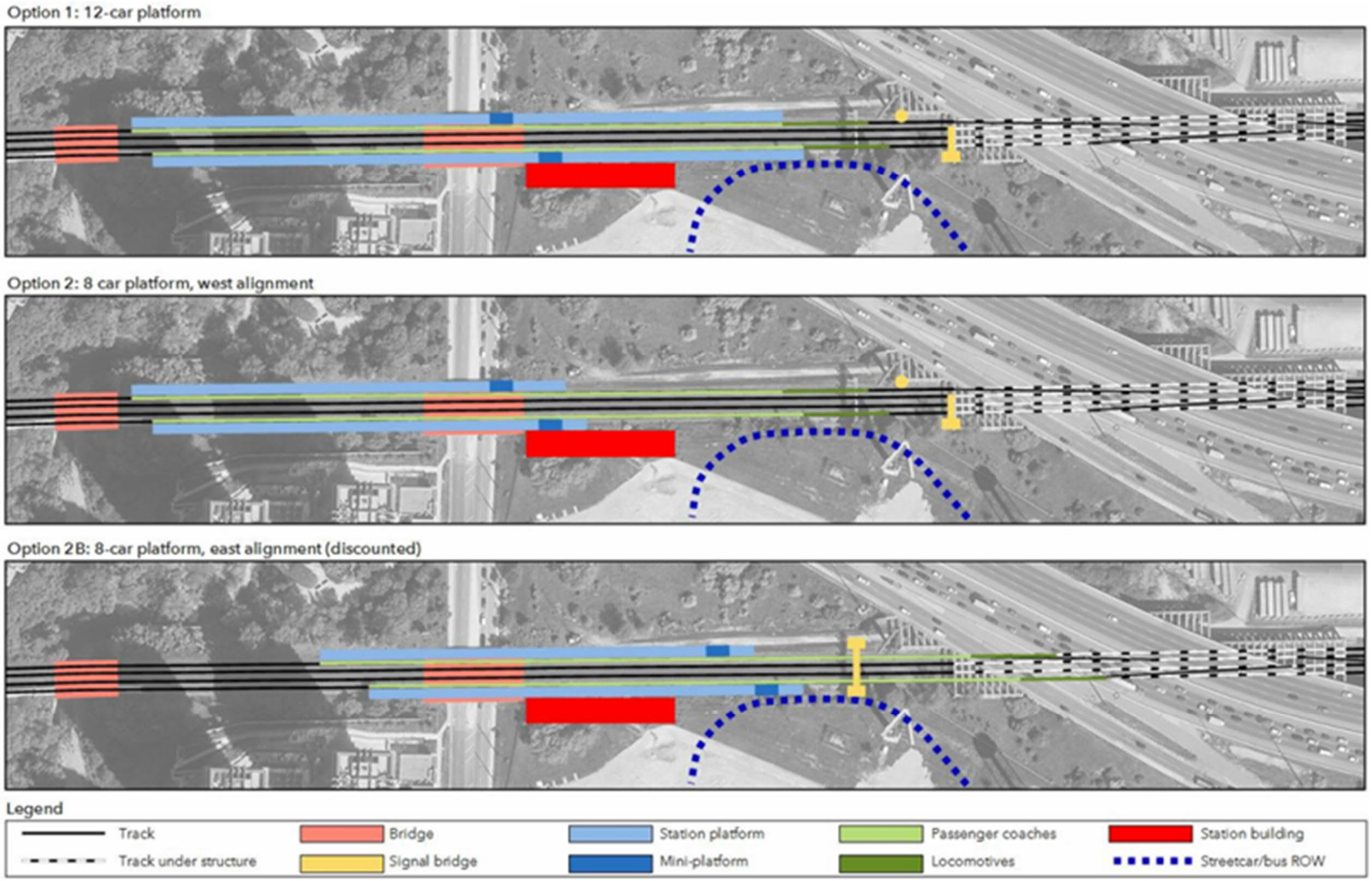



**Figure 3-1: Updated 2020 IBC Options** (Metrolinx, 2020a)

### *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. 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 Elements Configuration*

#### *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 3-2. As detailed design progresses this deviation will be reviewed by Metrolinx.

#### *3.1.3.2 Platforms*

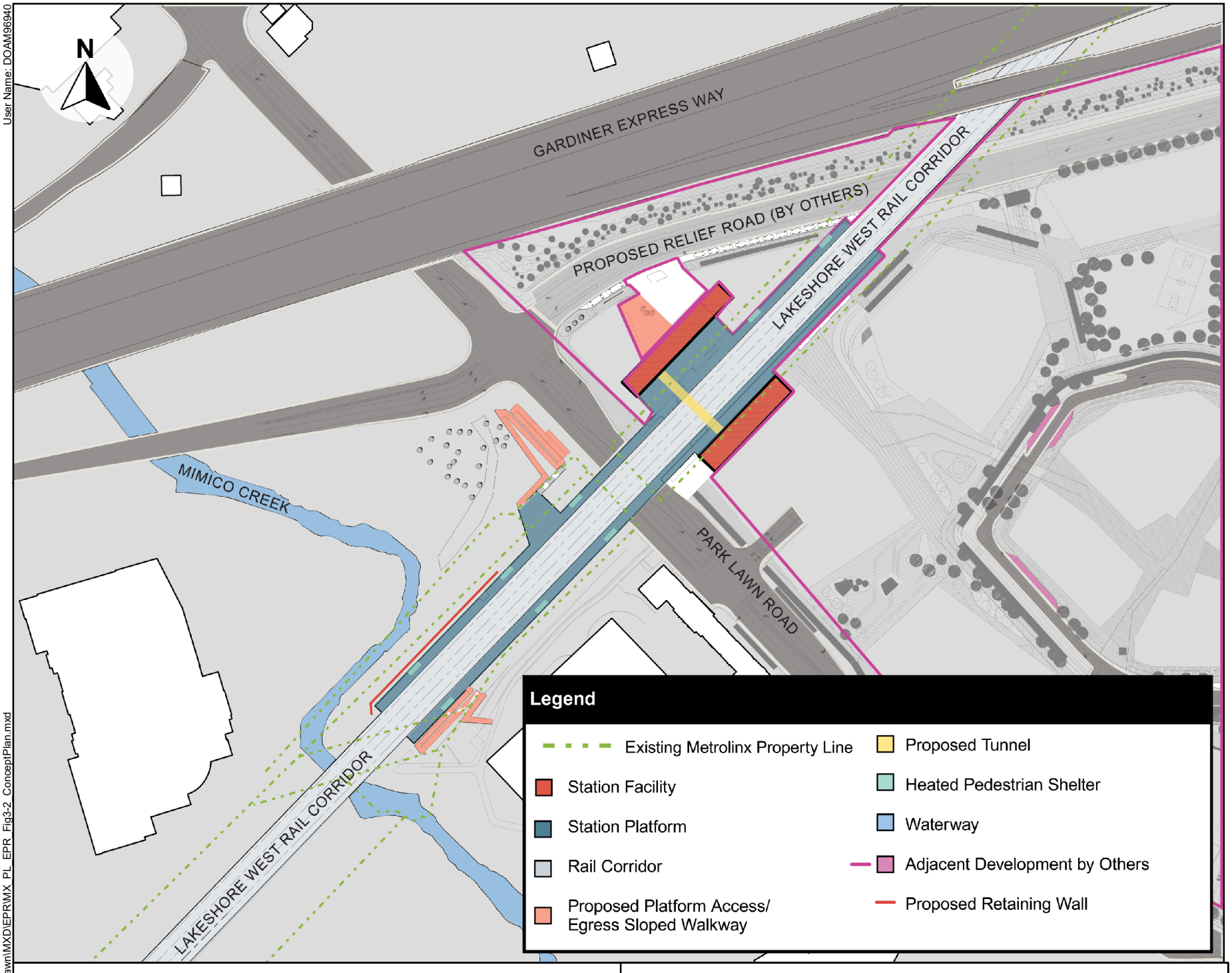
A standard side platform width, based upon the Design Requirements Manual (DRM), is 4.9 m. Based upon the positioning of the platforms due to the proposed signal locations summarized in Section 3.1.3.1 a portion of both the north and south platforms extend into TRCA's Hazard Lands for Mimico Creek. Reduction in platform width from the DRM standard requires a deviation to be approved by Metrolinx, which includes the design drawings, pedestrian flow model and rationale for the variation. Studies are being undertaken at this time to be submitted as part of the 30% design of the proposed Park Lawn GO Station to explore reduction in platform width.

#### *3.1.3.3 Sloped Walkways*

Access to the north and south platforms west of Park Lawn Road is proposed to be via sloped walkways. Alternative access to the platforms 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 these sloped walkways were considered. The north sloped walkway was initially designed as shown in Figure 3-3, oriented east-west, roughly parallel with the north platform. This concept was found to encroach into the Mimico Creek valley system with vegetation removal closer to the creek and required significant amounts of fill to construct. The north sloped walkway has already been reconfigured, as shown in Figure 3-2, away from the creek and parallel to Park Lawn Road to minimize encroachment into the valley system. The walkway layout and accessibility will continue to be reviewed as detail design progresses.

The south sloped walkway was initially designed as shown in Figure 3-4, located between the south platform and the South Beach condos noise wall. This configuration was found to require additional third party property, location 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 3-4 placed the south sloped walkway closer to Mimico Creek. Further discussions on this sloped walkway are necessary during detailed design to optimize this design considering TRCA, passenger, utilities, safety, and property requirements.




**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 - Park Lawn GO Station Concept Plan** | | |
| **Prepared By:** | HATCH | **Date:** | **August 27, 2021** |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 3-2 | **Page:** |

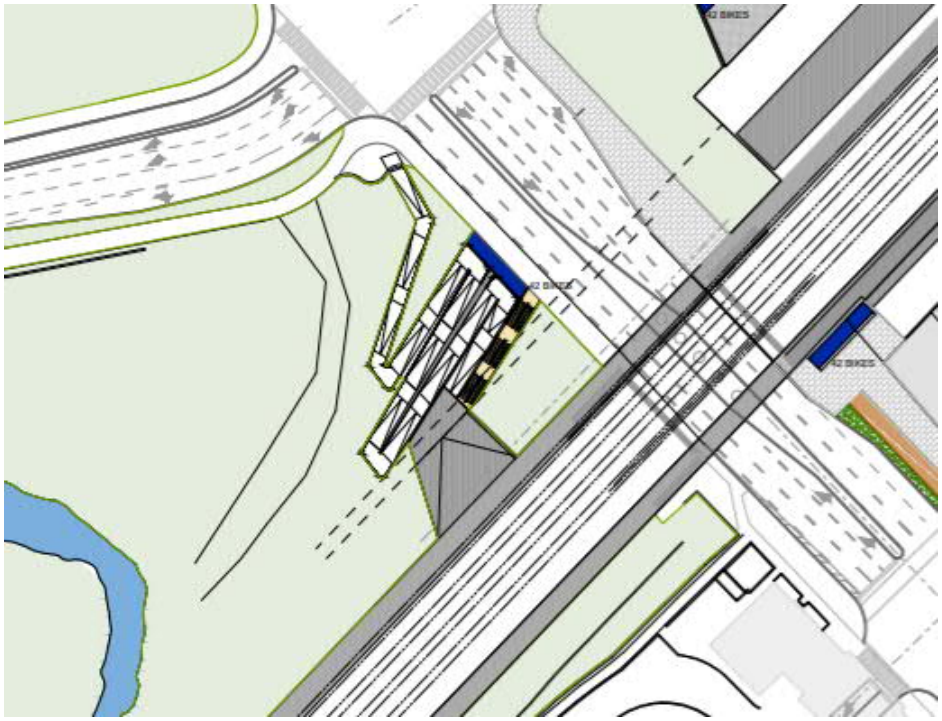


**Figure 3-3: North Sloped Walkway Initial Design Configuration**

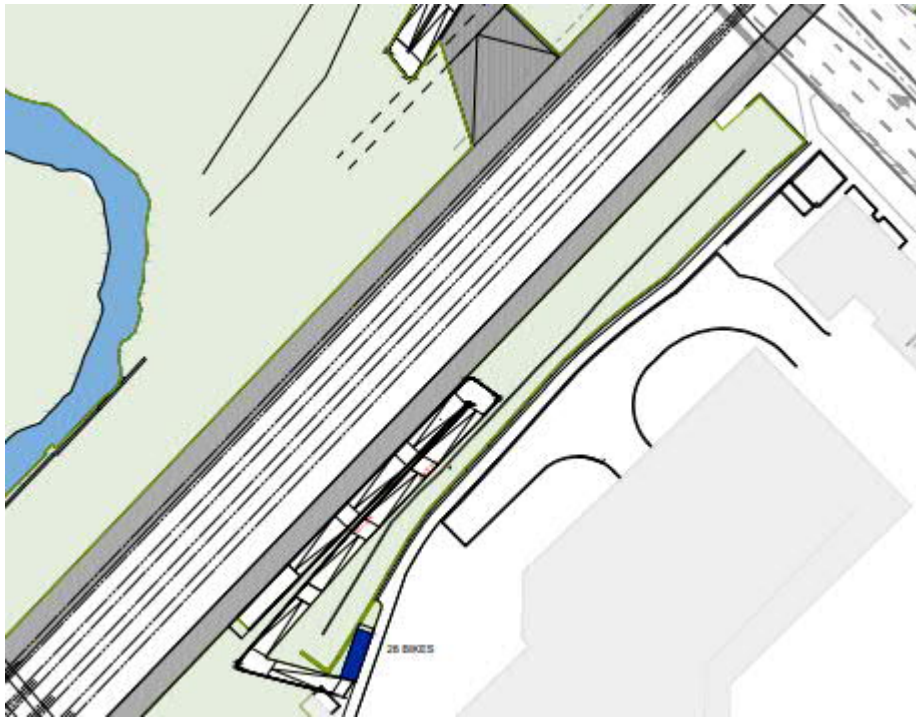


**Figure 3-4: South Sloped Walkway Initial Design Configuration**

## 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 enduring 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" (Relief Road).

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 3-2 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 better connectivity to the planned bus and streetcar infrastructure, compared to a shorter platform, as well as reduced walking distances to reach the platforms (Metrolinx, 2020a).

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 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); and
- Landscaping and paving around the north station building

### *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 PUDO and 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.

Sloped walkways on the west side of Park Lawn Road, including one located north of the rail corridor, connecting from Park Lawn Road, including stairs, as well as one located south of the rail corridor, connecting with the South Beach Condos sidewalk.

The City of Toronto and TRCA have proposed future pathways and structures over Mimico Creek, which will improve access from adjacent developments. It should be noted that these connections are outside of the Park Lawn GO Station Study Area, and will be realized following approval of the construction by the City and TRCA

### *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 Relief Road.

### 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*

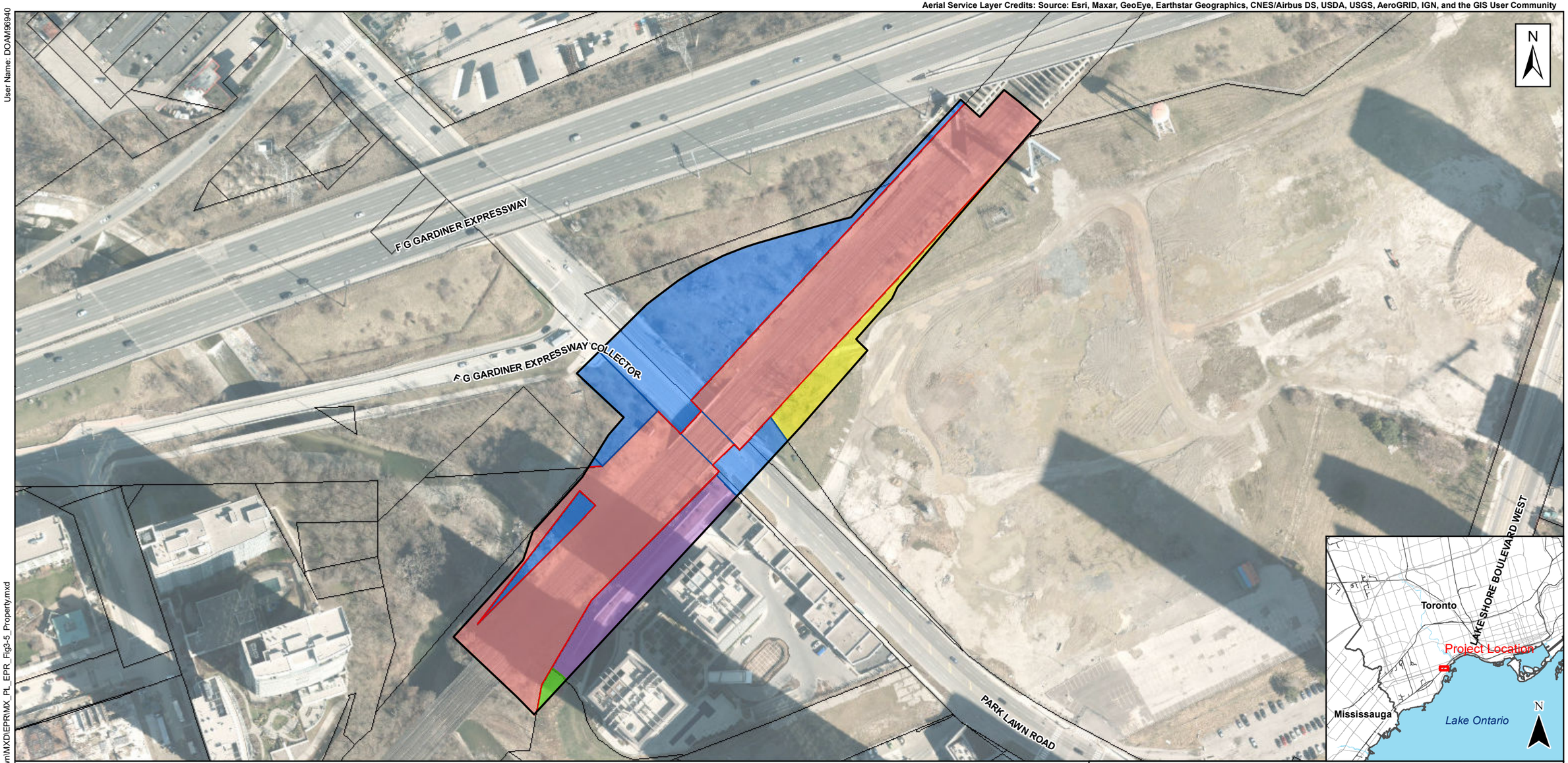
The proposed GO Station will be designed to accommodate the requirements for future level-boarding. Additionally, the north PUDO facility will be located along the south edge of the new Relief Road with a dedicated layby provided for accessible PUDO along Public Street 'A' (Relief Road). The location 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 Relief Road.

### *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 three adjacent land owners, including the City of Toronto, TRCA and South Beach Condos and Lofts adjacent to the Lakeshore West rail corridor (see Figure 3-5. During detailed design the property impacts will be refined to reflect the updated footprint, as well as construction staging areas.




**LEGEND**

- Proposed Project Footprint (approximate)
- Property Boundary

**Project Footprint by Property Ownership**

- City of Toronto
- First Capital Corporation
- 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.

0 50 100 200 Meters

1:2,000

| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Property Impact Plan** | | |
| **Prepared By:** HATCH | | **Date:** | **August 25, 2021** |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 3-5 | **Page:** 1 of 1 |

### *3.3.12 Utilities*

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

- Incoming station services including domestic cold water, gas, and electricity, provided from 2150 Lake Shore where required.

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. Relocation is to be confirmed;
- One existing Enbridge gas main northwest of Park Lawn Road is in conflict with the proposed north sloped walkway. Relocation is to be confirmed;
- 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. It is to be relocated underneath the proposed platforms; 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. It is to be relocated underneath proposed platforms.

Wet Utilities

- One existing stormwater sewer northeast of Park Lawn Road is to be relocated to suit the proposed bridge widening;
- One abandoned 300mm diameter watermain northeast of Park Lawn Road is to be removed as required for construction;
- One sanitary sewer along Park Lawn Road (east) is in conflict with the proposed bridge piers. It is to be relocated further east;
- One abandoned sanitary sewer along Park Lawn Road (west) 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. Treatment is to be confirmed.

### *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 FCR 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 with the proposed Relief Road 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.

### *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 drainage and SWM objectives of the MECP Stormwater Management Planning and Design Manual (2003), MTO Drainage Management Manual (2008), TRCA Stormwater Management Criteria (2012), Toronto Green Standard (City of Toronto, 2021), Metrolinx Sustainable Design Standards (2021), and Christie Secondary Plan (2021) among other guidance;
- The SWM Design will incorporate Low Impact Development (LID) techniques provided by these design guides;
- Noting that the Christie Secondary Plan has committed to Toronto Green Standard Tier 3, which includes retention of 25 mm of each rain event through infiltration, evapotranspiration, and reuse. For the proposed GO Station this 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 by removing 80 percent TSS through the use of oil-grit separators or filtration 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 rigid retaining wall are 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. Use of the rigid 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 2).

#### *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 form 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 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 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.

#### *4.1.3.4 Significant Wildlife Habitat*

A Significant Wildlife Habitat (SWH) Assessment Table 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) (MNRF, 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). 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 it's peripheries and is not expected to provide hydrological stormwater retention to any measurable degree. Humber River is approximately 900 metres 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 metres 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.

### *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 | *Salix nigra* | L3 | R |
| White Spruce | *Salix glauca* | L3 | X+ |
| Black Ash | *Fraxinus nigra* | L4 | R[2] |
| Black-Eyed Susan | *Rudbeckia hirta* | L4 | X |
| Freeman's Maple | *Acer x freemanii* | L4 | X |
| Pussy Willow | *Salix discolor* | L4 | X |
| Red Maple | *Acer rubrum* | L4 | X |
| Red Oak | *Quercus rubra* | L4 | X |
| Softstem Bulrush | *Schoenoplectus tabernaemontani* | L4 | X |
| White Birch | *Betula papyrifera* | L4 | X |
| White Pine | *Pinus strobus* | L4 | X |
| Wild Columbine | *Aquilegia canadensis* | 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 Assessment Table 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) 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 | *Riparia* | 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 | *Hirundo rustica* | 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 | *Chaetura pelagica* | 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 | *Chordeiles minor* | 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 | *Contopus virens* | 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 | *Falco peregrinus* | 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 | *Melanerpes erythrocephalus* | 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 | *Hylocichla mustelina* | 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 | *Anguilla rostrata* | 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 | *Emydoidea blandingii* | 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 | *Lampropeltis triangulum* | 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 | *Graptemys geographica* | 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 | *Chelydra serpentina* | 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 | *Danus plexippus* | 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 | *Erynnis martialis* | 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 | *Myotis leibii* | S2S3 | Endangered | Not Assessed | No Status | No Schedule | Moderate | Potential to occur within forest communities and candidate snag trees. |
| Little Brown Myotis | *Myotis lucifugus* | S4 | Endangered | Endangered | Endangered | 1 | Moderate | Potential to occur within forest communities and candidate snag trees. |
| Northern Myotis | *Myotis septentrionalis* | S3 | Endangered | Endangered | Endangered | 1 | Moderate | Potential to occur within forest communities and candidate snag trees. |
| Tri-coloured Bat | *Perimyotis subflavus* | 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:

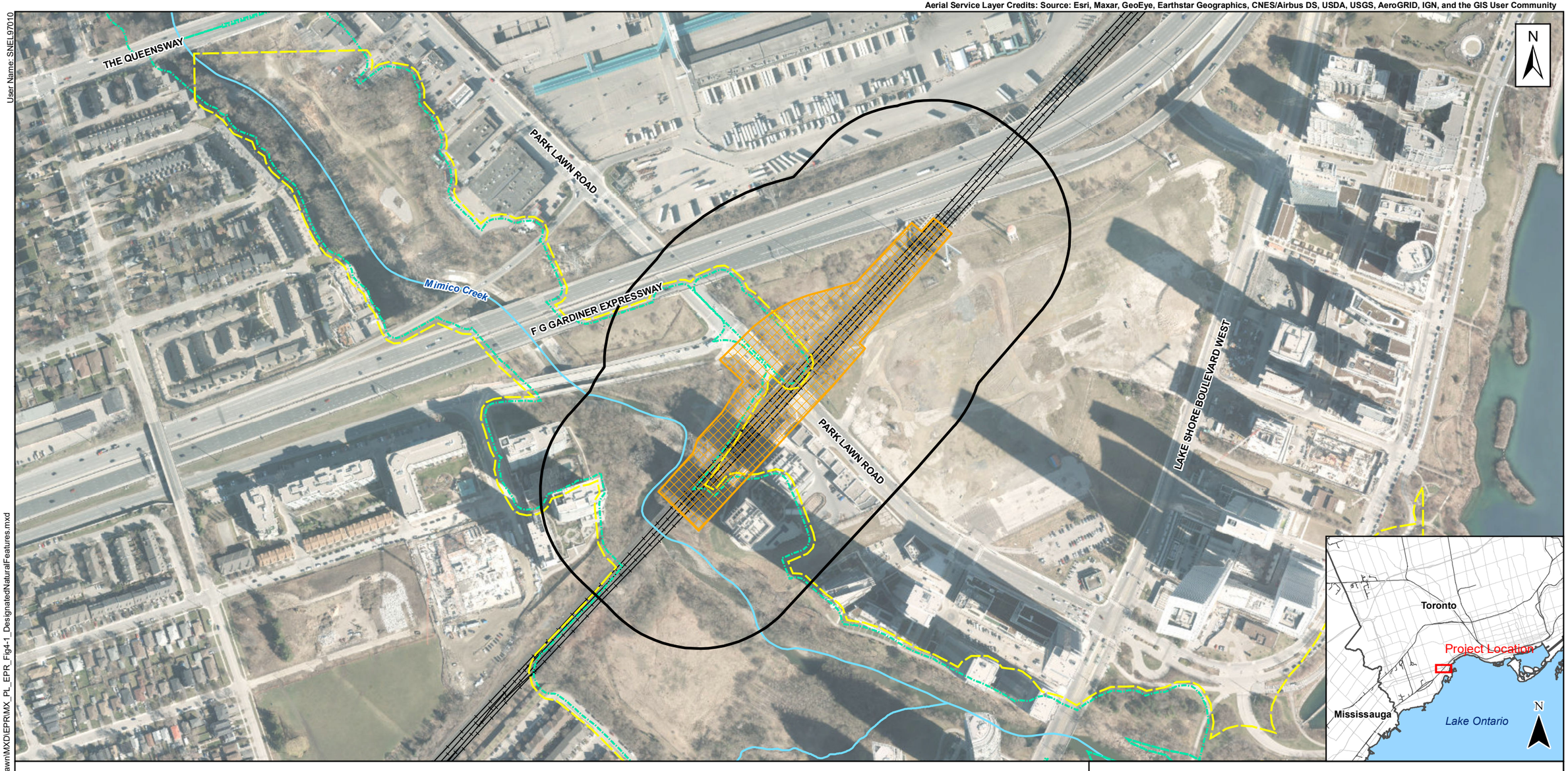
- Lands Information Ontario (LIO);
- NHIC; and
- Natural Heritage Areas mapping (e.g., ANSIs, PSWs, and Environmentally Significant Areas).

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

1. A discernible land form 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.

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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**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.

0 50 100 200 Meters

1:4,000

| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Designated Natural Heritage Features** | | |
| **Prepared By:** HATCH | | **Date:** August 19, 2021 | |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 4-1 | **Page:** 1 of 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 planipennnis (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, FCR 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 dioicus*), 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.. 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 investigation conducted for this Report, 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 dioicus*), 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*

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MHSTCI. This database contains archaeological sites registered within the Borden system. Under the Borden

system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block AjGu.

According to the OASD, one previously registered archaeological site is located within one kilometre of the Study Area and it is not within 50 metres of the Study Area (MHSTCI, 2020). A summary of the sites is provided below in Table 4-4.

**Table 4-4: List of previously registered sites within one kilometre of the Study Area**

| Borden # | Site Name | Cultural Affiliation | Site Type | Researcher |
|---|---|---|---|---|
| AjGu-11 | Treatment Plant | Post-Contact Mississauga | Village | Boyle 1885 |

According to the background research, five previous archaeological assessments (AA) detail fieldwork within 50 m of the study area:

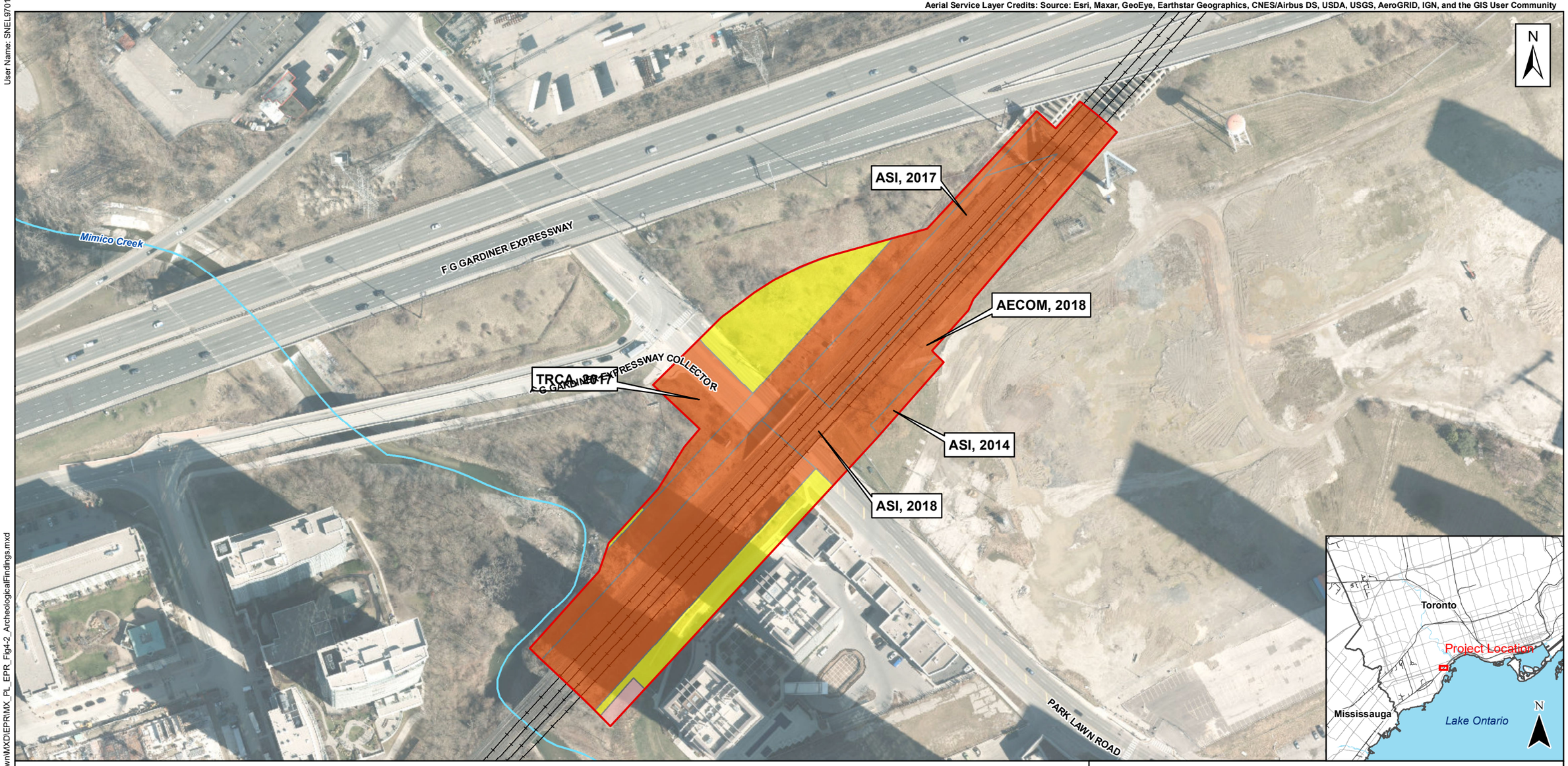
- (AECOM, 2018) conducted a Stage 1 AA for the Park Lawn / Lake Shore Boulevard West Transportation Master Plan, between Legion Road North and the Gardiner Expressway. The background research and field review determined much of the lands within the current Study Area to be disturbed by commercial and residential development as well as road and highway construction. Some portions were identified to retain archaeological potential.
    - Please note that ASI's 2020 property inspection and background review of historical aerial photographs re-analysed these areas and determined that - contradictory to the AECOM Stage 1 results - these lands were previously assessed as having no potential or were determined to have been disturbed where they overlapped with the current Study Area (see Plates 3-5, Figure 12). No further work is recommended in these areas.
- (ASI, 2013b) conducted a Stage 1-2 AA of 2150 Lake Shore in the City of Toronto, including part of the current Study Area. The Stage 1 field review determined that although significant portions of the subject property had been impacted during the development of the Mr. Christie factory in the 1940s and 1950s, it was unable to determine if the land alteration was limited to the building footprints, buried utility pathways, and graded an paved driveways and parking lots which extent throughout the property. The results of the Stage 2 field assessment indicate that the entire property had been thoroughly disturbed, most likely during the quarrying, grading and subsequent development of the Christie factory in the mid-twentieth century. It was recommended that no further archaeological assessment of the property be required;
- (ASI, 2017) conducted a Stage 1 AA of the GO Rail Network Electrification TPAP in the City of Toronto, including part of the current Study Area. Field inspection determined that previous railway construction had severely disturbed the area, and no further archaeological assessment was recommended;

- (ASI, 2020a) conducted a Stage 1 AA as part of the Metrolinx OnCorr Due Diligence Project. The OnCorr Project area includes sections of each of the Metrolinx rail corridors that are to be included in the OnCorr Private-Public Partnership package for construction and maintenance of the OnCorr Project by ProjectCo. for 35 years. The scope of this Stage 1 was the OnCorr Non-Priority Works for the existing Lakeshore West Rail Corridor footprint, plus a 25 m buffer on either side from the centerline of the rail corridor, including the current Study Area. A property inspection and background research identified that those parts of the corridor which had not been previously assessed were disturbed. No further archaeological assessment was recommended; and
- Toronto and Region Conservation Authority (Toronto and Region Conservation Authority (TRCA), 2017) conducted a Stage 1-2 AA for the Oakville Bank Stabilization, in the City of Toronto. A judgemental test pit survey was conducted which did not locate cultural resources. No further archaeological assessment was recommended.

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.

User Name: SNEL97010

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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**LEGEND**

- Study Area
- Railway
- Permanent Watercourse
- Disturbed - No Potential
- Previously Assessed
- 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.

0 25 50 100 Meters

1:2,000

| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Stage 1 Archaeological Findings** | | |
| **Prepared By:** HATCH | | **Date:** August 19, 2021 | |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 4-2 | **Page:** 1 of 1 |

## 4.4 Cultural Heritage Resources

### *4.4.1 Methodology*

The cultural heritage assessment considers the Study Area footprint and adjacent properties within 50 metres, to ensure all potential Built Heritage Resources (BHR) and Cultural Heritage Landscapes (CHL) are considered as best possible.

Use of a 40-year-old threshold is a guiding principle when conducting a preliminary identification of BHRs and CHLs (MHSTCI, 2016). While identification of a resource that is 40 years old or older does not confer outright heritage significance, this threshold provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly less than 40 years old, this does not preclude the resource from retaining heritage value.

In the course of the cultural heritage assessment, all potentially affected BHRs and CHLs are subject to inventory. Short form names are usually applied to each resource type. Examples include, but are not limited to: barn, residence, bridge, culvert, and neighbourhood cultural heritage landscape.

Background historical research, which includes consultation of primary and secondary source material and historic mapping, was undertaken to identify early settlement patterns and broad agents or themes of change in the Study Area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth- and twentieth-century settlement and development patterns. For the purposes of this study, the following sources were consulted: nineteenth-century mapping; nineteenth-century local historical accounts (Boulton, 1805) (Robinson, 1885) (Smith, W. H, 1846); twentieth-century mapping; and community histories.

To augment data collected during this stage of the research process, federal, provincial, and municipal databases and/or agencies were consulted to obtain information about specific properties that have been previously identified and/or designated as retaining cultural heritage value. Typically, resources identified during this stage of the research process are reflective of particular architectural styles, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

Finally, site visits were conducted to confirm the location and integrity of previously identified BHR's and CHL's, and to identify potential heritage resources not previously recognized.

Several investigative criteria were utilized during the data gathering phase to appropriately identify CHRs. These investigative criteria were derived from provincial guidelines (including the Metrolinx Draft Terms of Reference for Consultants: Cultural Heritage Screening report for Built Heritage Resources and Cultural Heritage Landscapes, and O. Reg. 9/06 and O. Reg. 10/06 of the *Ontario Heritage Act)*, definitions, and past experience.

### 4.4.2 Agency Data Collection

Following Metrolinx approval, the Ontario Heritage Trust, the MHSTCI, and the City of Toronto were contacted to describe the scope of the project and submit heritage data requests. A summary of agency data requests and information received is recorded in Table 4-5.

**Table 4-5: Results of Agency Data Collection**

| Contact Name/ Position | Date(s) of Communications | Description of Information Received |
|---|---|---|
| Ms. Karla Barboza,<br>Team Lead(A), Heritage<br>Heritage Planning Unit<br>Programs and Services Branch<br>Ministry of Heritage, Sport, Tourism and Culture Industries | April 3 and 6, 2020 | The MHSTCI responded to say that to date, there are no properties within or adjacent to the Study Area that have been designated by the Minister, and there are no provincial heritage properties within or adjacent to the Study Area. |
| Kevin De Mille<br>Heritage Planner, Ontario Heritage Trust<br>Kevin.demille@heritagetrust.on.ca | April 3 and April 7, 2020 | The Ontario Heritage Trust confirmed that they do not have any conservation easements or Trust-owned properties within or adjacent to the Study Area. |
| **Heritage Preservation Services**<br>c/o Yasmina Shamji<br>Toronto City Hall<br>100 Queen Street West<br>17th floor, East Tower<br>Toronto ON M5H 2N2 | January 22 and March 30, 2020 | No response received at the time of report writing. |

### 4.4.3 Cultural Heritage Assessment

#### 4.4.3.1 *Summary of Previously Identified Cultural Heritage Resources*

Based on the review of available municipal, provincial, and federal data, and the results of project consultation, there is one previously identified potential BHR within and/or adjacent to the Study Area. The Christie Water Tower was previously identified in a Heritage Impact Assessment Report of the lands associated with the former Mr. Christie Factory Site (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 Archaeolgical Services Inc., 2016).

Based on the results of the background research and field review, one potential BHR was identified within the Project Study Area (see Table 4-6). 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.

**Table 4-6: Identified Cultural Heritage Resources within the Study Area**

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

## 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 metre 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 $km^2$. The overall Mimico population density was slightly above the City of Toronto average (4,334 per $km^2$) at 4,915 per $km^2$, while Stonegate-Queensway was well below at 3,199 per $km^2$. 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 4-7.

**Table 4-7: 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 housing[5] (City of Toronto, 2018c). This data is presented in Table 4-8.

**Table 4-8: 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 4-9.

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 4-9: 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 4-10, 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 4-10: 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 4-11.

**Table 4-11: 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 story's. 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 4-12 summarizes the socio-economic and land use points of interest within 800 m of the Project footprint. Specific points of interest are also shown in Figure 4-3.

**Table 4-12: 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) |

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


**LEGEND**

- Study Area - 400 Meters
- Proposed Project Footprint (approximate)
- Railway
- Permanent Watercourse
- School
- Place of Worship
- Library
- Recreational Uses and Parks

**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

| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Socio-Economic and Land Use Points of Interest** | | |
| **Prepared By:** HATCH | | **Date:** August 19, 2021 | |
| **Version:** PL.TI.90-1 | **Review:** | **Figure:** 4-3 | **Page:** 1 of 1 |

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#### *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). In addition, the OP notes that City owned land in the Green Space System and in Parks and Open Space Areas 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 (2.3.2.4 (Green Space System) and 4.3.8 (Parks and Open Space Areas)).

#### *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 4-13 (Toronto Transit Commission, 2020b), TTC service in the study area is shown in Figure 4-4.

**Table 4-13: 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<br>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<br>2155 Lakeshore Blvd West |
| 66B Local Bus | North-south, regular service | Park Lawn Road at Gardiner Expressway<br>88 Park Lawn Road<br>Park Lawn Road at Lakeshore Blvd West<br>2155 Lakeshore Blvd West |
| 176 Local Bus | East-west, no service in off-peak hours, limited operation during the day | 88 Park Lawn Road<br>Park Lawn Road at Lakeshore Blvd West<br>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<br>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 |

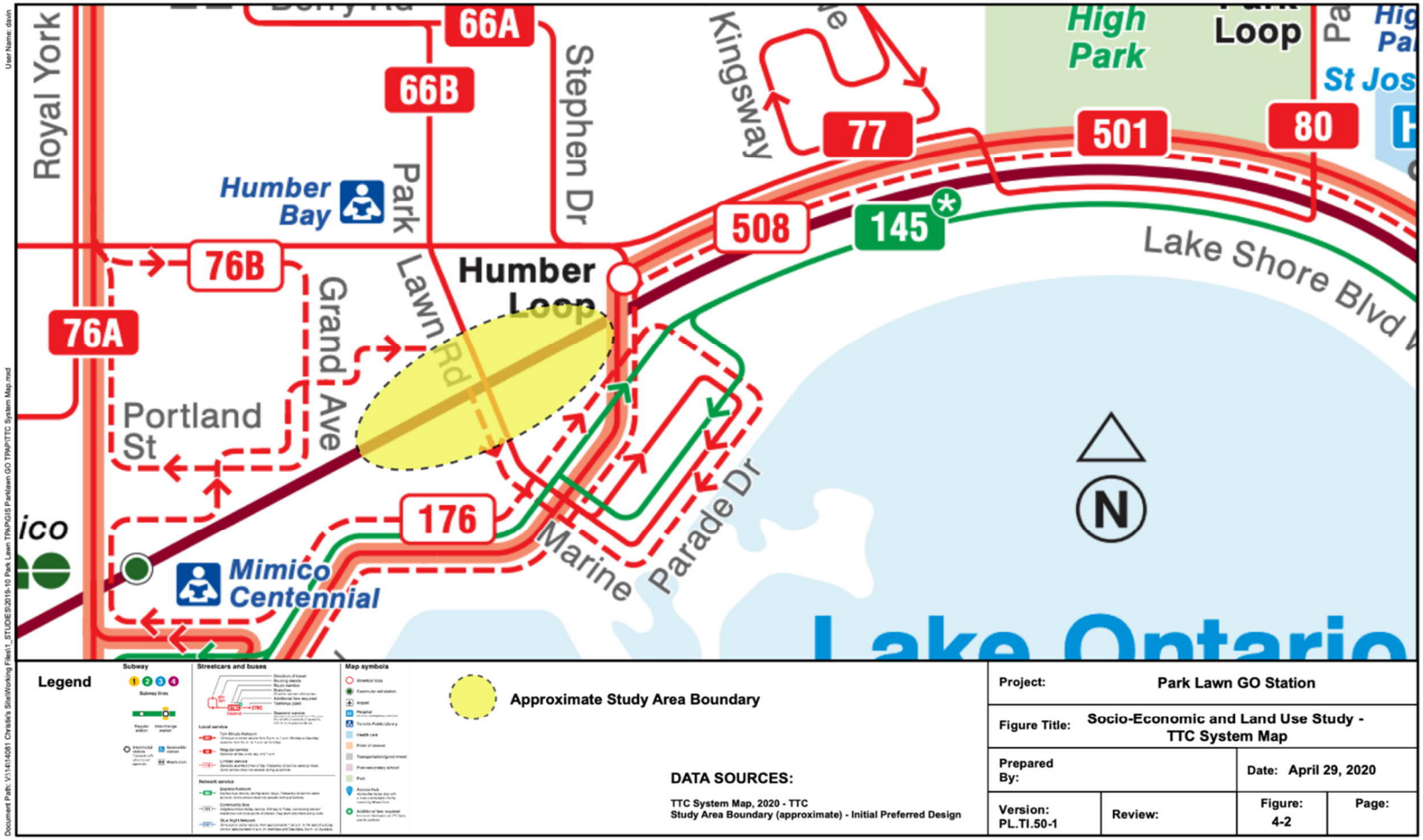


**Figure 4-4: TTC System Map**

#### *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.

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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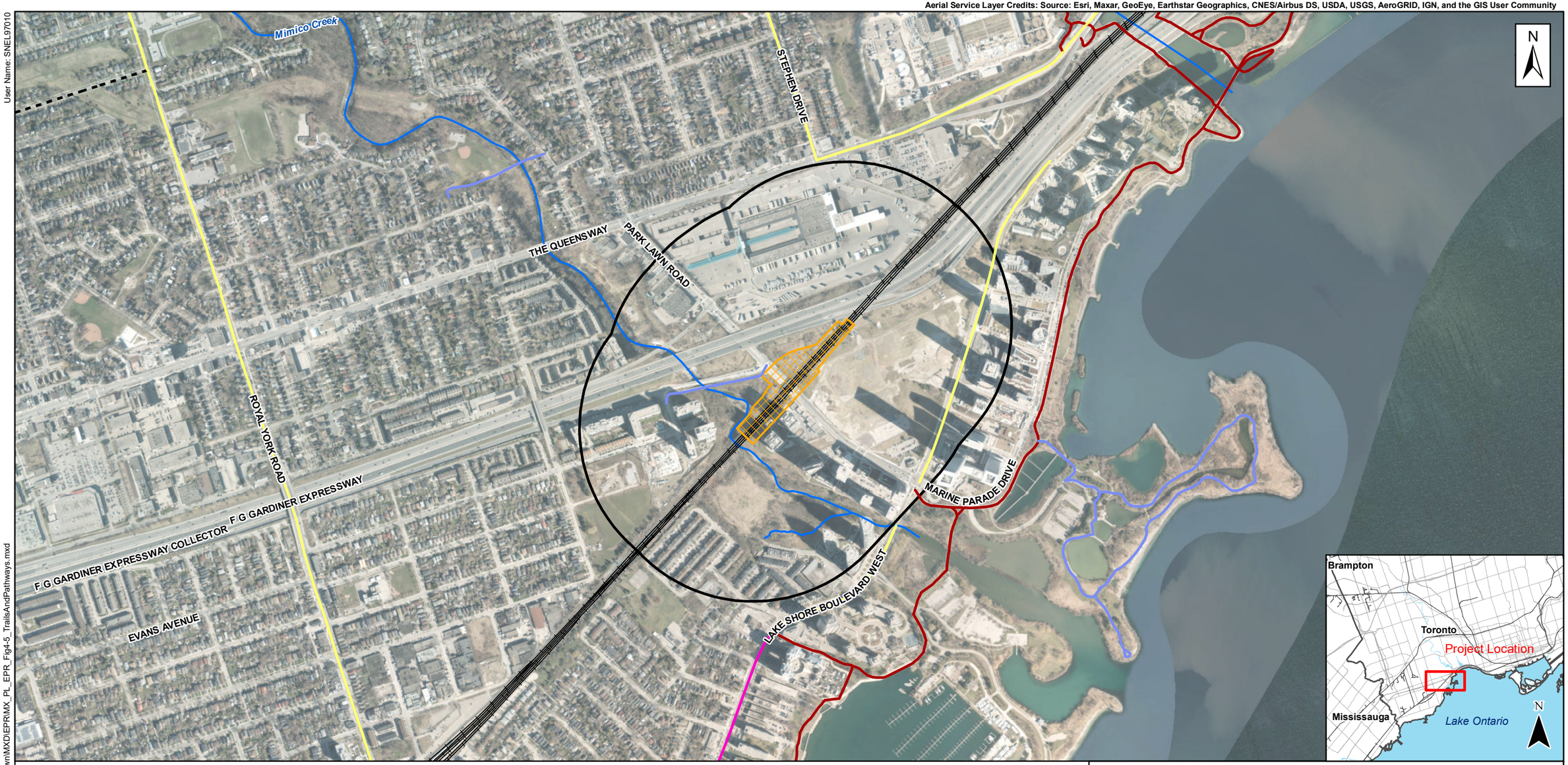


**LEGEND**

- Proposed Project Footprint (approximate)
- Study Area - 400 Metres
- Railway
- Permanent Watercourse
- Bike Lanes
- Cycle Tracks
- Major Multi-use Pathway
- 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

0 175 350 700 Meters

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| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Trails and Pathways** | | |
| **Prepared By:** HATCH | | **Date:** | **August 19, 2021** |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 4-5 | **Page:** 1 of 1 |

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#### *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.

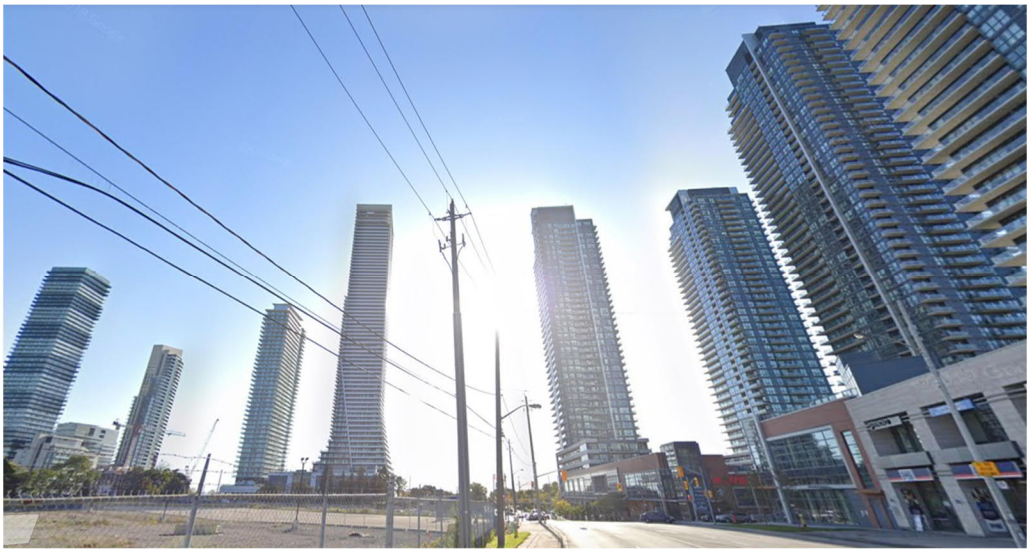
The employment land to the north of the Project footprint is largely occupied by the Ontario Food Terminal, a one-to-two storey warehousing facility that is the main produce distribution centre in Toronto. Park Lawn Road is the only arterial road that runs north-south through the Study Area, cutting 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 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 Official Plan Amendment 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 4-14.

**Table 4-14**: **Development Activity Summary**

| Address<br>Map ID | Application Type | Description | Application Status |
|---|---|---|---|
| 251 Manitoba Street<br>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<br>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<br>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<br>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<br>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<br>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<br>Map ID 7 | OPA/ZBA | 13-storey hotel building with a restaurant on the ground floor. | Under Review |
| 2150 Lake Shore Blvd W<br>Map ID 8 | OPA/ZBA<br>(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 residential, employment, retail, and institutional. | Under Review |

## 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 4-15.

**Table 4-15: Contaminants of Concern**

| Contaminants of Concern |
|---|
| Particulate Matter less than 2.5 µm ($PM_{2.5}$) |
| 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:

- Particulate matter less than 10 micrometre (µm) (PM10); and
- 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 4-16 (Carbon Monoxide), Table 4-17 (Nitrogen Dioxide), Table 4-18 ($PM_{2.5}$), Table 4-19 (Benzene), Table 4-20 (1,3-Butadiene), Table 4-21 (Formaldehyde), Table 4-22 (Acetaldehyde), Table 4-23 (Acrolein) and Table 4-24 (B(a)P).

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

User Name: SNEL97010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**LEGEND**

- Proposed Project Footprint (approximate)
- Study Area - 300 Metres
- Railway
- Permanent Watercourse

**Receptors**

- Critical
- Sensitive

**NOTES**

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.

0 250 500 1,000 Meters

1:15,000

| | | | |
|---|---|---|---|
| **Project:** | **Park Lawn GO Station** | | |
| **Figure Title:** | **Environmental Project Report - Critical and Sensitive Receptors** | | |
| **Prepared By:** HATCH | | **Date:** August 19, 2021 | |
| **Version:** PL.EP.90-1 | **Review:** | **Figure:** 4-6 | **Page:** 1 of 1 |

**Table 4-16: Summary of Model Predicted Results for Most Impacted Sensitive Receptor - Carbon Monoxide**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/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 4-17: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Nitrogen Dioxide**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/m$^3$) | 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/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/m$^3$) | 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 4-18: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - $PM_{2.5}$**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/m$^3$) | 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 4-19: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Benzene**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/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 4-20: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - 1,3-Butadiene**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/m$^3$) | 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 4-21: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Formaldehyde**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/m$^3$) | 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 4-22: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Acetaldehyde**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/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 4-23: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - Acrolein**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/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 4-24: Summary of Model Predicted Results for the Most Impacted Sensitive Receptor - B(a)P**

| Receptor ID | Address | Averaging Period | Scenario | Background Concentration (µg/m$^3$) | Criterion (µg/m$^3$) | Maximum Cumulative Concentration (µg/m$^3$) | Median Cumulative Concentration (µg/m$^3$) | 90$^{th}$ Percentile Cumulative Concentration (µg/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 will be 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 4-25 contains a brief description of points of reception and summarizes receptor location setbacks, elevations, and receptor heights used in the analysis.

**Table 4-25: 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).<br>Plane of the apartment bedroom/living room (High density residential). | Plane of a bedroom window. |
| Height | 1.5 m (Low density residential)<br>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 4-26. These include both existing and proposed dwellings. also includes noise and vibration monitoring locations, as listed in Table 4-27.

**Table 4-26: 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 | Residential |
| R-04 | 2150 & 2194 Lake Shore Boulevard West, 23 Park Lawn Road | 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 | 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 4-27 below and are shown in Figure 4-7.

**Table 4-27: 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 | 157 Harbourview Crescent, Etobicoke, ON M8V 3V6 |
| VM-02 | 251 Manitoba Street, Etobicoke, ON M8Y 1E3 |
| VM-03 | 2194 Lake Shore Boulevard West, Etobicoke, ON M8V 1A2 |

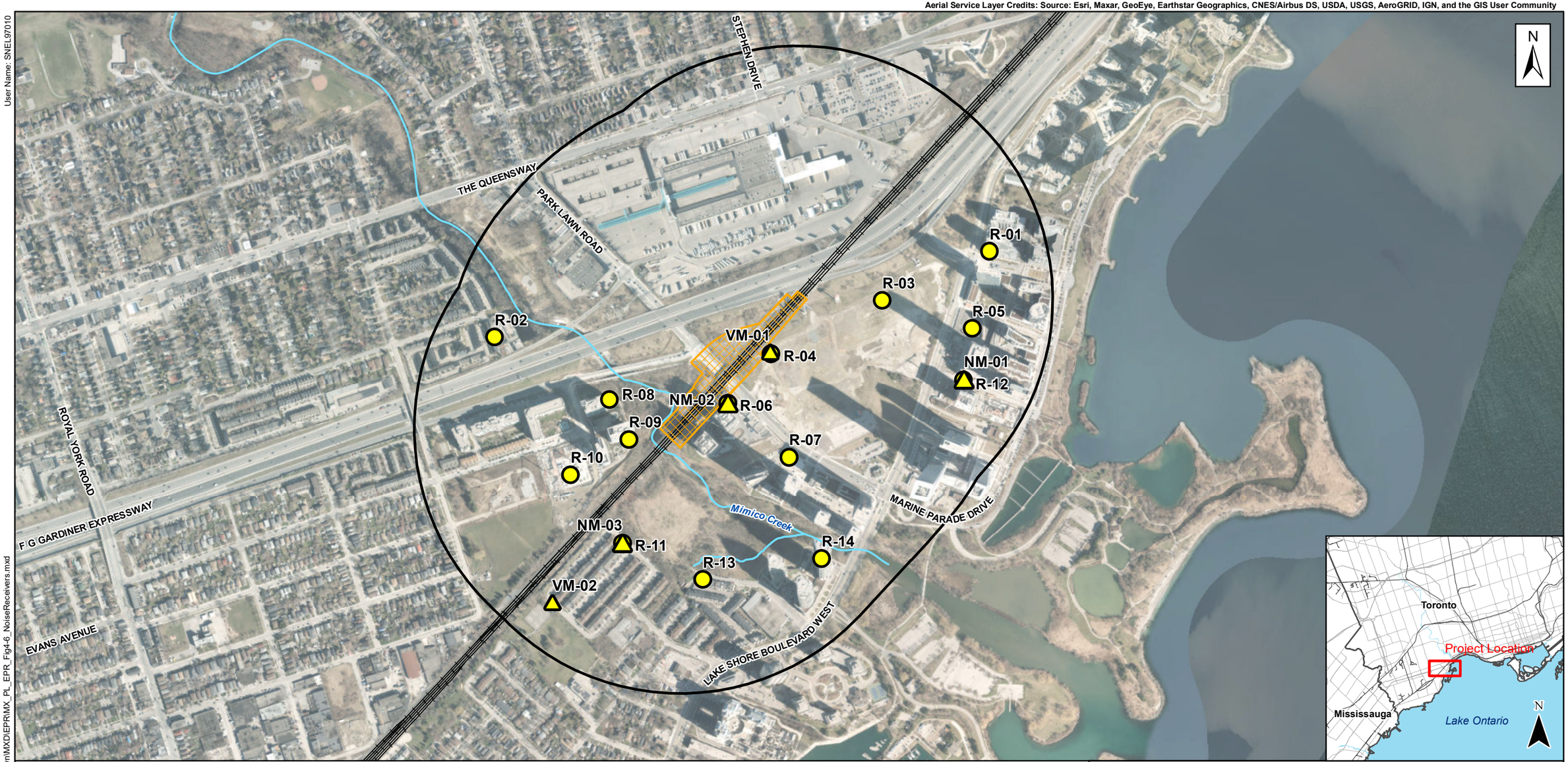
Convergence Instruments “Noise Sentry RT” integrating sound level meters were utilized for the noise monitoring. Calibration was completed before and after each measurement. Instrumentation specification can be found in Appendix B of Appendix G in this EPR.

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 4-28 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 4-28 presents the measured and modelled noise levels.




## LEGEND

- Proposed Project Footprint (approximate)
- Study Area - 500 Metres
- Railway
- Permanent Watercourse
- Receptor
- Monitor

## NOTES

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

0 100 200 400 Meters

1:8,000

| | |
|---|---|
| **Project:** | **Park Lawn GO Station** |
| **Figure Title:** | **Environmental Project Report - Noise and Vibration Receptor and Monitoring Locations** |
| **Prepared By:** | HATCH |
| **Date:** | **August 19, 2021** |
| **Version:** PL.EP.90-1 | **Review:** |
| **Figure:** | **4-7** |
| **Page:** | **1 of 1** |

**Table 4-28: 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 4-29 summarizes this comparison. Vibration monitoring data is presented in Appendix C of Appendix G of this EPR.

**Table 4-29: 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*

The Existing Conditions assessment provides a detailed review of the existing transportation conditions in the area, adopting 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 PUDO 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’ (“Relief Road”), 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 protected lands. The groundwater observations within these wells are presented in Table 4-30.

**Table 4-30: 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 by Water's Edge (Water's Edge, 2021)

Evidence of existing slope instabilities, such as exposed roots, leaning vegetation, and slope repair works, were noted during the field investigation site visits (Water's Edge, 2021).

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 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 appears 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 |
| **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.

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) 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 Toronto Green Standard (City of Toronto, 2021) 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; and
- Riparian vegetation removal shall be kept to the minimum required for construction.

#### *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;
- 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 sensitives; 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 will 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) 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 Canadian Food Inspection Agency (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
- 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;
- The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits;
- 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 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 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); and
- Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions.

#### *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;
- 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;

- 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 FCR. 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 |
| 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.

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.

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.

#### 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 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 |
| 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, FCR will obtain all applicable documents and approvals. FCR 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, 3:11:3, 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

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).

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 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 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. Tees 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. 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; and
- Restoration/compensation and/or monitoring will be confirmed through regulatory agency consultation during detailed design.

### *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 183 trees will be required for removal, three trees will be expected to be injured, and 21 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 |
| 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, FCR 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 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 of Cemeteries at the Ministry of Consumer Services.

## 5.4 Cultural Heritage Resources

### *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.

[12] 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."

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.
3. The CHR should be submitted by the proponent 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 four landowners (FCR, City of Toronto, TRCA, 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, FCR 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, FCR will continue to consult with affected parties prior to Project construction to further enhance and develop applicable mitigation measures, as required.

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; and
- Consultation and ongoing discussion with TRCA to identify mitigation measures and strategies for land transfer to address the potential hazard lands including finding 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**

- 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.

**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.

**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;
- Restoration of Open Space lands to TRCA/RNFP/City standards if required;
- 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
- Following the City of Toronto's Best Practices for Effective Lighting (2017), the Toronto Green Standard, and Clause 13.3.3 of the Christie Secondary Plan, light spillage will be taken into consideration during detailed design and may 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 ($PM_{10}$) 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 PM2.5) 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 land owners, 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 BMP will be utilized to minimize any adverse effects from construction noise at nearby sensitive receptors:

- 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 land owners, 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 land owners, 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’ (Relief Road) 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 (Relief Road) 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' (Relief Road) 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' (Relief Road), 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' (Relief Road) 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 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 rigid 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 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 assessment 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 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.

The slope stability assessment 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 rigid retaining wall considered for the slope stability assessment 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.

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.

## 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.

## 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) |
|---|---|
| The ministry expects proponents to take into account:<br>• The project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation)<br>• Resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation)<br>• The proponent should also include a discrete statement in their study report detailing how climate change was considered in the EA.<br>• Proponents of natural resource related projects should consult Appendix B for treatment of carbon stocks as sinks versus sources.<br>Proponents should include evaluation criteria, such as greenhouse gas emissions and impacts on carbon sinks, in the assessment of alternatives and alternative methods. | • Section 5.11.2.2 (greenhouse gas emissions)<br>• Section 5.11.2.3 (impacts on carbon sinks)<br>• Section 5.11.3 (climate change adaptation)<br>• Section 5.11<br>• The Project is not natural resource related, so this is not applicable.<br>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. |

| Recommendation | Section(s) |
|---|---|
| All climate parameters with potential to interact with a project should be defined and considered at a screening level to fully understand which interactions pose higher risk. | • Section 5.11.3 |
| 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 *Planning for Resiliency* 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 project studies prepared in support of the EA report. | The TPAP does not include a terms of reference, so this is not applicable. |
| 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<br>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 footprint[13] 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.
- 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

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.

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.

#### *5.11.1.3 City of Toronto*

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 Tier's 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*, a collaborative effort between the City of Toronto's Planning Division and The Atmospheric Fund with assistance from Integral Group, Morrison Hershfield, and Provident Energy Management. 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.

**Applicability to the Project**

In line with the Christie Secondary Plan's sustainability strategy, the Project will strive to meet the highest tiers of the TGS in support of the City of Toronto's near-zero emissions targets. This strategy will include incorporating development features such as green roofs, rain gardens, bio-swales, and open planters.

The TGS will continue to be referenced 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 management[14]. 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 Basin[1]**

| Theme | General projections | Trend | Data Confidence |
|---|---|---|---|
| **Air temperature** | • 1.5ºC-7ºC increase by 2080s depending on climate scenario and model used<br>• Greater increases in the winter<br>• Increased frost-free period and growing season | ↑ | High evidence<br>High agreement |
| **Precipitation** | • 20 percent increase in annual precipitation across the Great Lakes Basin by 2080 under the highest emission scenario<br>• Increases in rainfall, decreases in snowfall<br>• Increased spring precipitation, decreased summer precipitation<br>• More frequent extreme rain events | ↑ | High evidence<br>Medium agreement |
| **Drought** | • Projected increases in frequency and extent of drought | ↑ | Low evidence<br>High agreement |
| **Wind** | • Increased wind gust events | ↑ | Low evidence<br>Low agreement |
| **Ice storms** | • Greater frequency of freezing rain events | ↑ | Low evidence<br>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-year[15] 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 separators[16] 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 Environnent - Pre-Construction / Construction** | | | |
| Soils | • Erosion;<br>• Soil Compaction;<br>• Soil Mixing;<br>• Drainage Alterations;<br>• Bank Degradation;<br>• Habitat Impacts; and<br>• 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);<br>• 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) for managing soil materials on-site (includes excavation, location of stockpiles, reuse, and off-site disposal);<br>• 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;<br>• Disturbed areas within the construction site will be stabilized and re-vegetated as soon as conditions allow;<br>• The ESC measures will be left in place until disturbed areas within the construction site have been stabilized and will then be removed;<br>• Wet weather restrictions shall be applied during site preparation and excavation;<br>• 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);<br>• 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;<br>• 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.<br>A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained, and enforced.<br>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.<br>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;<br>• 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;<br>• 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<br>• 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.<br>Changes in channel morphology. | • 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. |
| Groundwater | Effects to Groundwater Quality from Contamination.<br>Loss of Groundwater Quantity from the Highly Vulnerable Aquifer. | • 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;<br>• 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;<br>• Stormwater management for the Station will be designed to meet the standards set forth in the Toronto Green Standard (City of Toronto, 2021) 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;<br>• 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:<br>▪ Approval of water takings in accordance with the MECP Permit to Take Water process or within the EASR framework;<br>▪ 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.<br>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.<br>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.<br>Workers will report any instances of spills to their supervisors. |

| 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 HVA. | |
| Watercourses, Hydrological Features and Aquatic Environment | Water quality degradation.<br>Loss of Riparian Habitat.<br>Loss of Aquatic Habitat.<br>Flow alterations. | • 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;<br>• 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;<br>• 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;<br>• 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;<br>• 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;<br>• Fish will be released unharmed into suitable habitat downstream of the work area;<br>• If an invasive species is encountered during the fish relocation it will be euthanized and removed from the watercourse in accordance with MNRF conditions;<br>• The work area shall be delineated and workers shall be made aware of the limits to construction activities;<br>• Heavy machinery or equipment requiring fuel shall be stored at a minimum of 30 m from the watercourse;<br>• Where feasible, site preparation shall be phased for the winter months to avoid impacts to aquatic wildlife in the summer months; and<br>• 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.<br>A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained, and enforced.<br>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.<br>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. |
| 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;<br>• 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;<br>• Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto and TRCA permitting processes;<br>• Any tree clearing or limb trimming will be limited to that required to meet necessary safety clearances; and<br>• 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;<br>• Disturbed areas within the construction site will be revegetated as soon as conditions allow;<br>• 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;<br>• If an invasive species is removed, the species will be disposed of appropriately in an off-site location;<br>• 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) for managing soil materials on site (includes excavation, location of stockpiles, reuse, and off site disposal);<br>• 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;<br>• Where revegetation is required, a native seed mix, which does not contain invasive species, will be used;<br>• 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<br>• 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. | 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 |
|---|---|---|---|
| | 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 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;<br>• A Wildlife Management Plan shall be developed during detailed design and followed accordingly;<br>• The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits;<br>• 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<br>• Workers shall be provided with training on 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<br>• The design of the building shall include the provision of bird-safe window treatment in compliance with Metrolinx DS-05. | Workers will report any wildlife collisions to their supervisors. |
| | Destruction of nests and habitat during tree clearing activities. | • A Wildlife Management Plan shall be developed during detailed design and followed accordingly;<br>• 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;<br>• If vegetation must be removed during the breeding bird timing window:<br>▪ 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);<br>▪ 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 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 |
|---|---|---|---|
| | | ▪ 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.<br>• 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<br>• Suitable human-made structures within the Study Area shall be inspected 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).<br>Loss of Special Concern Species Habitat. | • A Wildlife Management Plan shall be developed during detailed design and followed accordingly;<br>• Additional studies to support detailed design will be completed in fall 2021 to identify if hibernaculum are located within the Project footprint;<br>• The site shall be swept prior to each day to ensure no reptiles are found within the construction limits;<br>• 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<br>• Workers shall be provided with training on 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. |
| Species at Risk | Loss of Habitat.<br>Injury / Loss of Life. | • 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;<br>• 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);<br>• 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;<br>• 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:<br>▪ 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 | 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 |
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| | | discuss applicable mitigation options. The Contractor will proceed based on the mitigation measures established through discussions with the MECP and/or ECCC.<br>• 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<br>• 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.<br>Alteration of Ravine Habitat.<br>Decrease in Biodiversity. | • 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:<br>▪ Removal of trees and shrubs shall be completed mechanically.<br>• 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;<br>• Any tree clearing or limb trimming will be limited to meet necessary safety clearances;<br>• Trees will be trimmed by a Qualified Professional arborist to limit tree damage;<br>• 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;<br>• All disturbed areas within the construction site will be re vegetated as soon as conditions allow;<br>• 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;<br>• If an invasive species is removed, the species will be disposed of appropriately in an off-site location;<br>• A SMP will be prepared by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on site (includes excavation, location of stockpiles, reuse, and offsite disposal);<br>• 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; | 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.<br>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.<br>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. 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 |
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| | | • Where revegetation is required, a native seed mix, which does not contain invasive species, will be used;<br>• 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<br>• 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. | |
| 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:<br>▪ All construction vehicles shall have a Drive Clean Emissions Report in compliance with O. Reg. 361/98: Motor Vehicles under the Environmental Protection Act, R.S.O.1990, C/ E19 as well as licensing from the MTO;<br>▪ Vehicles and machinery shall not be left to idle; and<br>▪ All vehicles shall be well maintained and fitted with a emission control system (e.g. exhaust baffles, mufflers, engine covers, etc.).<br>• 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. |
| | 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;<br>• Removal of trees and shrubs shall be completed mechanically;<br>• 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;<br>• 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;<br>• Any tree clearing or limb trimming will be limited to meet necessary safety clearances; and<br>• 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 | • First Capital 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 | A qualified Environmental Inspector is required throughout the construction period to ensure that tree protection measures |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| | 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. | policies. Regulated trees that are dead and identified to be removed are exempt from permit requirements;<br>• 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;<br>• 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;<br>• 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;<br>• Where permits are required on City of Toronto or private property lands within the Study Area, First Capital will work with stakeholders to obtain the necessary documents and approvals. Tree protection measures will follow the municipal By-laws, regulations, and policies;<br>• 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;<br>• 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;<br>• 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;<br>• 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;<br>• Proof of installed hoarding must be submitted to City Urban Forestry prior to permit issuance;<br>• 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;<br>• 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); | are implemented, maintained, and enforced. This inspector is responsible for determining the need and timing of additional expertise, such as an ISA Certified Arborist.<br>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.<br>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.<br>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.<br>Additional restoration/compensation measures and/or monitoring maybe required based on the results of additional surveys and consultations with regulatory agencies.<br>Restoration/compensation and/or monitoring will be confirmed through regulatory agency consultation during detailed design. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| | | • If it is determined that any City trees require pruning, a pruning plan must be submitted to the City for approval; and<br>• 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. | |
| **Natural Environment - Operations and Maintenance** | | | |
| Soils | Soil Contamination (through spills or other deleterious substances transported during erosion).<br><br>Soil Contamination (through imported fill materials). | • All disturbed areas within the construction site will be stabilized and revegetated as soon as conditions allow;<br>• 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);<br>• 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<br>• An Emergency Response and Communications Plan will be developed and followed throughout the operation and maintenance phase (includes spill response and contingency plans). | 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.<br>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;<br>• 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;<br>• Any tree clearing or limb trimming will be limited to meet necessary safety clearances; and<br>• Trees will be trimmed by a Qualified Professional to limit tree damage. | 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. |
| 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;<br>• During removal operations efforts should be made to prevent the spread of invasive plant species during construction both 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. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| **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;<br>• 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<br>• 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 of Cemeteries at the Ministry of Consumer Services. | 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. |
| **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 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. | • Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified BHRs;<br>• 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<br>• The Cultural Heritage Report should be submitted by the proponent 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.<br>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;<br>• Engage and negotiate with affected property owners regarding land acquisition and easements/TLIs required for the proposed works;<br>• Provide fair market value compensation to affected property owners in accordance with applicable laws;<br>• Consultation with TRCA to identify mitigation measures to address the potential hazard lands;<br>• 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<br>• Ongoing discussion between FCR 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. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| 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.<br><br>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.<br><br>City of Toronto Official Plan - the proposed station will support the City of Toronto's direction to accommodate future growth while also providing infrastructure to promote active transportation.<br><br>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). | • As there are no predicted effects. No mitigation is required. | No monitoring activities are required. |
| 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 FCR. | • No mitigation is required. | No monitoring activities are required. |
| **Socio-Economic and Land Use - Construction** | | | |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| Roads and Traffic Volumes | Temporary road or lane closures to facilitate construction may impact access to adjacent residences and businesses.<br><br>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);<br>• Maintain access to residential and commercial buildings;<br>• Prepare and implement a Construction Traffic Management Plan; and<br>• 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;<br>• Prepare and implement a Construction Traffic Management Plan; and<br>• 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.<br><br>Potential for temporary service interruption during relocation or accidental damage to utilities. | • Consultation with utility owners and implementation of utility relocation agreements;<br>• Completion of Subsurface Utility Engineering (SUE) investigations to confirm utility locations; and<br>• 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 close proximity to the proposed Park Lawn GO Station.<br><br>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.<br><br>Air quality effects to lands surrounding the new GO Station are documented in the AQIA (Park Lawn GO Station EPR, Appendix F).<br><br>Expected noise and vibration effects are documented in the Noise and Vibration Impact Assessment (Park Lawn GO Station EPR Appendix G). | • 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);<br>• Noise, Vibration and Air Quality monitoring will reflect Metrolinx' Environmental Guide for Noise and Vibration Impact Assessment - Rev. 7 (final) (Metrolinx, 2019);<br>• 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);<br>• Preparation and implementation of a Dust Management Plan;<br>• Timing restrictions will be in place to limit the time of day for construction activities, as required by municipal by-laws;<br>• Construction schedule delays will be avoided to the extent possible in order to minimize the time over which construction will occur; and<br>• 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. | 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.<br><br>Type 1 noise and vibration monitoring at 88-90 Park Lawn Road and 96 Park Lawn Road.<br><br>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 | • 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;<br>• 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 | 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. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| | residential, commercial, and institutional uses described above. | • If required, restoration of Open Space lands to TRCA/RNFP/City standards. | |
| Aesthetic and Visual Effects | Short-term effect on aesthetics due to construction trailers, laydown areas, stockpiling of materials, construction activities and construction fencing.<br><br>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;<br>• Locate stockpile and laydown areas away from Park Lawn Road and Lake Shore Blvd; and<br>• 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.<br><br>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. |
| Public Transit and Active Transportation | The proposed station will improve access to local and regional public transit to residents in the Study Area.<br><br>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.<br><br>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.<br><br>Modeled noise levels associated with stationary sources associated with the station | • 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<br>• During detailed design, effects of construction and permanent use will be assessed. | No monitoring required. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| | building show that noise levels will not exceed applicable daytime and nighttime noise limits.<br><br>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. | | |
| 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. | • New infrastructure to support the Park Lawn GO Station adjacent to Open Space, if required, will reflect TRCA/RNFP/City standards. | No monitoring required. |
| Aesthetic and Visual Effects | The proposed station will be locally prominent as the rail corridor is elevated on both sides of Park Lawn Road.<br><br>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;<br>• Light location, height and settings designed to minimize light spillage and prevent blind spots;<br>• Use of shielded fixtures;<br>• Building design and minimization of light pollution to be bird friendly; and<br>• Following of City of Toronto's Best Practices for Effective Lighting (2017) and the Toronto Green Standard. | 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 | • No mitigation required. | No monitoring required. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
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| | and landscaping will provide a transition from the 2150 Lakeshore development.<br><br>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.<br><br>Other public realm improvements will include improvements to Mimico Creek and restoration of open space areas. | | |
| 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 and drop off (Transportation Brief - Appendix H). | • No mitigation measures required. | No monitoring required. |
| **Air Quality - Pre-Construction /Construction** | | | |
| | Fugitive dust emissions (Total Suspended Particles, inhalable particulate matter (PM10) and PM2.5) from construction activities.<br><br>Emissions resulting from the use of combustion engines associated within mobile and stationary construction equipment and machinery on-site.<br><br>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”;<br>• 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;<br>• 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;<br>• Modifying work schedules when weather conditions could lead to adverse impacts (i.e., very dry soil and high winds);<br>• Removing all loose or unsecured debris or materials from empty trucks prior to leaving the Project site;<br>• Covering all truckloads of dust-producing material, including use of dump trucks with retractable covers for the transport of soils and other friable materials;<br>• Minimizing the number of loading and unloading of friable materials; | 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.<br><br>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 |
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| | | • Minimizing drop heights, using enclosed chutes, and covering debris bins used for deconstruction of affected structures;<br>• Reducing unnecessary traffic and implementation of speed limits on any unpaved surfaces;<br>• Vacuum sweeping or watering of all paved surfaces and roadways on which equipment and truck traffic enter and leave the construction areas;<br>• 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;<br>• 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<br>• 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). | |
| **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:<br>▪ 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<br>▪ During construction, best management practices will be put into place including road sweeping, and covering of stockpiles and dump trucks.<br>• 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 land owners, municipalities, or the public. |
| **Noise and Vibration - Pre-construction /Construction** | | | |
| Lands Adjacent to the Park Lawn GO Station<br>(Noise) | Construction sound levels are expected to be within the daytime criteria at nearby sensitive receptors.<br>Construction sound levels are expected to exceed sound level criteria during the nighttime and weekend. This exceedance is limited to the | • The following construction BMPs will be utilized to minimize any adverse effects from construction noise at nearby sensitive receptors.<br>▪ 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; | • '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. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| | upper level north-facing units in the two condominium buildings located at 88-90 Park Lawn Road. This is due to:<br>• Soil excavation, grading, compaction;<br>• Vehicle movement, heavy lifting; and<br>• Existing track modifications and demolition. | ▪ Keep equipment well-maintained and fitted with efficient muffling devices;<br>▪ Restrict idling of equipment to the minimum necessary to perform the specified work;<br>▪ Avoid unnecessary revving of engines and switch off equipment when not required;<br>▪ Coordinate “noisy” operations such that they will not occur simultaneously, where possible;<br>▪ Use rubber linings in chutes and dumpers to reduce impact noise, where possible;<br>▪ For reversing equipment, use automatic audible reversal broadband alarms instead of tonal alarms;<br>▪ Adjust site layout to minimize reversing. Apply drive forward in and out conditions where possible;<br>▪ Provide silencers on supply air ventilation fans for underground work;<br>▪ Minimize drop heights of materials; and<br>▪ Route haulage/dump trucks on main roads where possible, rather than on quieter residential roads.<br>• Prior to construction, a Noise and Vibration Control 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. | A Construction Noise and Vibration Monitoring Plan shall be prepared prior to the start of construction activities. This document should:<br>• Propose verification procedures related to the effectiveness of the above-noted mitigation measures and the execution of construction best practices;<br>• Identify the proposed instrumentation and duration for noise monitoring at 88-90 Park Lawn Road;<br>• Propose procedures to follow when exceedances are identified; and<br>• Propose a complaint protocol, based on empirical data for the assessment of complaints.<br>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 |
| Lands Adjacent to the GO Station (Vibration) | Nuisance to adjacent building occupants resulting from construction activities causing vibrations, typically involving:<br>• Soil excavation, grading, compaction;<br>• Vehicle movements, heavy lifting; and<br>• Existing track modifications and demolition.<br>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:<br>▪ Substitute equipment generating high levels of vibration whenever possible. For example, smaller compactors could be used instead of a vibratory roller;<br>▪ Schedule construction activities that have the potential to generate high vibration levels to daytime hours;<br>▪ Whenever possible, plan haul routes to avoid residential areas;<br>▪ When deep foundation excavation, employ augured secant pile or similar techniques. Avoid shoring panel installation using vibratory or post impact methods; and<br>▪ Maintain access routes to avoid the formation of potholes.<br>• 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.<br>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.<br>A Construction Noise and Vibration Monitoring Plan shall be prepared prior to the start of construction activities. This document should:<br>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.<br>Propose pre-construction measurements of background vibration levels within the ZOI.<br>Propose a pre-condition survey by means of a photographic record of affected structure façades and all surfaces that fall |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| | | | 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.<br><br>Propose construction vibration monitoring procedures to confirm that the Prohibited Construction Vibrations limits are not exceeded;<br><br>Identify the proposed instrumentation and time-periods for vibration monitoring;<br><br>Propose procedures to follow when exceedances are identified; and<br><br>Propose a complaint protocol, based on empirical data for the assessment of complaints.<br><br>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:<br>▪ Increased vehicle movements in and out of the station,<br>▪ PA system;<br>▪ 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;<br>• All stationary sound levels related to the station will remain within MECP’s NPC-300 sound level limits; and<br>• Therefore, noise control measures are not required. | • Metrolinx and GO Transit have ongoing inspection schedules to monitor the effectiveness of their operations.<br><br>A complaints procedure is in place to address any concerns raised by neighbouring land owners, the City of Toronto, or the public. |
| Lands Adjacent to the GO Station (Vibration) | • Causes of potential vibration effects can include:<br>▪ Train pass-bys<br>• 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.<br><br>A complaints procedure is in place to address any concerns raised by neighbouring land owners, the City of Toronto, or the public. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| **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.<br>• 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** | | | |
| | 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:<br>▪ Independence of the wall from lateral support from the soil retained by the existing retaining wall (passive resistance);<br>▪ 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<br>▪ Embedment of the wall into the rock mass to a depth that will provide an adequate level of overturning resistance.<br>• 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.<br>• Vegetation cover and tree roots on the existing slopes should be maintained in order to minimize soil erosion at the slope surface.<br>• 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. | Monitoring of the retaining wall includes review for:<br>Drainage away from the slope and evidence of erosion.<br>Vegetation cover on slopes.<br>Any standing water, ponding and saturated soil conditions. |

## 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 related to 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.<br>▪ 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.<br><br>Potential impacts to SAR can be |

| 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.<br>◆ Special concern species identified on the SARO List that were formally referred to as "vulnerable" in the SWH Technical Guide (SWHTG) (MNRF, 2000).<br>◆ Species identified as nationally Endangered or Threatened by the COSEWIC, which are not protected in regulation under Ontario's ESA. | minimized through implementation of 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. Construction-related mitigation has been identified. |

| Matters of Provincial Importance[1] | Definition [2] | Applicability to the Project |
|---|---|---|
| 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. | No properties protected under Part IV or Part V of the OHA were identified within the GO Station Study Area.<br><br>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. | There also no properties listed under municipal heritage registries and identified as Protected Heritage Properties. No properties are identified as a Protected Heritage Property of Provincial Significance. |
| 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 neighbourhoods, cemeteries, trail | |

| Matters of Provincial Importance[1] | Definition [2] | Applicability to the Project |
|---|---|---|
| | 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.<br><br>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 *Niagara Escarpment Planning and Development Act.* | An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the *Niagara Escarpment Planning and Development Act.* | 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 *Greenbelt Act*, 2017. | Property within an area described as a KNHF or a KHF in the Protected Countryside by the Greenbelt Plan under the *Greenbelt Act*, 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. |

*Note:*
*[1] Examples as listed in the Guide to Ontario's TPAP (MOE, 2014).*
*[2] Definitions are based on applicable regulations, agency consultations or the Guide to Ontario's TPAP (MOE, 2014).*

# 6. Stakeholder Consultation Process

## 6.1 Overview of the Stakeholder Consultation Process

*Note - Appendix K - Stakeholder Consultation Report will be made available at Notice of Completion.

### *6.1.1 Consultation Program Requirements*

As part of the TPAP, public and stakeholder consultation allows the proponent to consult all potentially interested persons in 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 Aboriginal communities any constitutionally protected Aboriginal or treaty right that is identified as potentially being negatively impacted by the transit project; and
- Discussing with Aboriginal communities any measures identified by the Aboriginal community 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.

### *6.1.2 Project Organization and Consultation Process*

The evaluation of environmental impacts of the proposed Park Lawn GO Station has been carried out in accordance with the 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) (MECP, 2015).

This EPR was prepared to assess the effects of the proposed station on the technical areas noted below:

- Natural Environment - Consideration of natural features in the Study Area, including environmentally sensitive areas and the presence of Species at Risk;
- Socio-Economic Environment - Consideration of socio-economic and key land use features in the Study Area, including air quality, noise and vibration, potential property impacts, and traffic; and
- Cultural Environment - Consideration of cultural heritage and archaeological features in the Study Area, such as built heritage resources, cultural heritage landscapes, and known or potential archaeological resources.

An important component of the TPAP is public and stakeholder consultation. 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 Plan is to inform the local and regional community, agencies, and other relevant stakeholders 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.

## 6.2 Pre-TPAP Consultation Process

The TPAP consultation process was initiated in the summer of 2020, continued through the fall of 2020 and 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;
- Convening Public Meeting #2 (August 27 to September 10, 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;
- Convening EA briefs and preliminary design meetings with elected officials, regulatory review agencies, conservation authorities and potentially affected municipalities leading to creation of Technical Advisory Committees (TACs);
- Convening TAC meetings (June X, 2021, and August X, 2021) to provide an overview of public consultation efforts, present preliminary drawings, and technical work, identify EPR developments and obtain input on the EPR; and
- Circulating draft Technical Reports to review agencies, Indigenous communities, and other stakeholders.

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 formal request to the MECP for a list of Indigenous Nations that may be interested in the Project. A response from MECP was received on May 21, 2020, which provided a list of Indigenous Nations to be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that could be adversely affected by the Project. The list was used in the development of a list of potentially interested communities which can be found in Appendix K.

### *6.2.2 Master Contact List*

A Master Contact List was developed in order to identify and record information for regulatory agencies, municipalities, Indigenous Nations, conservation authorities 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 was compiled following consultation with the Director regarding the identification of Indigenous Nations, agency consultation and review of previous contact lists for similar projects following the TPAP.

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 with revised contact information for interested parties and stakeholders. 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.

### *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 TPAP EA process and Park Lawn GO Station Project information and to keep the public informed of public meetings, provide summaries of public meetings as well as to provide the opportunity to make comments. The Website was updated with project information and notices throughout the TPAP process.

#### *6.2.3.2 Public Meeting #1*

The purpose of Public Meeting #1 was to introduce the proposed Project, provide a summary of the TPAP and outline the status of the technical studies that are being undertaken. 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, 2020, and in *L'Express* (local French newspaper) on June 19, 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 service to all postal codes within a 200 m radius of the Project Footprint.

#### *6.2.3.4 Project Website and Social Media*

From June 25 to July 20, 2020, an online public meeting was posted on the Project website as part of the pre-TPAP period. 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 25th and July 20th, we're incorporated into the Public Meeting 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 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.

#### 6.2.3.6 *Information Presented*

A PowerPoint presentation was used in order 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 | |
| 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*

Comments were received from the general public and other stakeholders through a dedicated project email (insert email) and the *Bang the Table* platform via the Feedback Form. Key themes from the Public Meeting comments and other inquiries from the public include:

- Privacy;
- Station Access;
- Local Transit Connectivity and Scheduling;
- Noise;
- Traffic;

- Parking;
- Natural Environment; and
- Electrification and Air Quality.

Written submissions and Project team responses are provided in the SCR found in Appendix K of this EPR.

### *6.2.4 General Public and Property Owner Correspondence*

### *6.2.5 Indigenous Community Consultation*

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 Communities 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 communities to confirm receipt of Notices and ensure the community 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 and phone call logs are provided in Appendix A of Appendix K of this EPR.

The Indigenous Nations were contacted on July 2, 2020 to advise of the first Public Meeting. A summary of comments from Indigenous communities and Project Team responses, applicable as of the date of the correspondence, is provided in Table 6-2. All correspondence with Indigenous Nations as part of the Pre-TPAP is included in Appendix A of Appendix K of this EPR.

**Table 6-2: Indigenous Community Comments and Project Team Response**

| Indigenous Community | Comment | Project Team Response |
|---|---|---|
| Huron Wendat Nation | Not much details is included in the Stage 1 Archaeological Assessment regarding the Huron-Wendat nation, compared to the Ojibwa or the Haudenosaunee - we request that equal space be given to the Nation's history and way of life.<br><br>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 AA updated to reflect comments related to Huron-Wendat, prior to submission to the MHSTCI. |

### *6.2.6 Regulatory and Municipal Consultation*

As part of the consultation process, elected officials, regulatory agencies, the TRCA and the City of Toronto were consulted.

#### *6.2.6.1 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 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, MNRF, TRCA and City of Toronto.

- In Table 6-3 is a summary of the Meetings held with Agencies. Meeting minutes and Action Trackers are contained in Appendix K of this EPR.

**Table 6-3: Dates of Meetings with Agencies**

| 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 |
| City of Toronto (Virtual) - check-in | May 6, 2021 |
| City of Toronto (Virtual) - check-in | May 13, 2021 |

#### *6.2.6.2 Agency and Municipal Correspondence*

During the Pre-TPAP process, written correspondence was received from the Ministry of Natural Resources and Forestry (MNRF), TRCA, MECP, City of Toronto, and elected officials. Copies of all correspondence are provided in Appendix D in Appendix K of this EPR.

Agency comments/questions from written correspondence were summarized by key themes, including the Project Team responses. Full correspondence is provided in Appendix D in Appendix K of this EPR.

### *6.2.7 Elected Officials*

The following elected Officials were notified of the Project and informed of the opportunity to provide input to 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

### *6.3.1 Notice of Commencement / Public Meeting #2*

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 was coordinated with the Notice of Public Meeting.

### *6.3.2 Consultation*

*Public Meeting #2*

The Notice of Commencement/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/Public Meeting #2.

A Copy of the Notice of Commencement/Public Meeting #2 is included in Appendix G of Appendix K of this EPR.

### *6.3.3 Indigenous Nations and Organization Consultation*

Metrolinx contacted and/or engaged Indigenous Nations and organizations identified as having potential interest in the Project (see list in Table 6-4). Written correspondence to Indigenous Nations and organizations was delivered by email at the following Project milestones:

- Request for Input, Offer for Community Meeting, and Invitation to Public Meeting #1 - July 2020.

**Table 6-4: List of Indigenous Nations Contacted During the Park Lawn EPR Consultation 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 | ✓ | ✓ | ✓ | |
| Kawartha Nishnawbe First Nation | ✓ | ✓ | ✓ | |
| Mississaugas of the Credit First Nation | ✓ | ✓ | ✓ | |
| Six Nations of the Grand River | ✓ | ✓ | ✓ | |
| Alderville First Nation | ✓ | ✓ | ✓ | |
| Beausoleil First Nation | ✓ | ✓ | ✓ | |
| Chippewas of Georgina Island First Nation | ✓ | ✓ | ✓ | |
| Chippewas of Rama First Nation | ✓ | ✓ | ✓ | |
| Curve Lake First Nation | ✓ | ✓ | ✓ | |
| Hiawatha First Nation | ✓ | ✓ | ✓ | |
| Mississaugas of Scugog Island First Nation | ✓ | ✓ | ✓ | |

### *6.3.4 Incorporation of Stakeholder Comments and Commitments to Future Consultation*

FCR 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 | |
| CHR | MHSTCI |
| Stage 1 AA | |

### *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, FCR 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 FCR 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. FCR 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*

As part of the TPAP, a Stage 1 AA and CHR 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 AA 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.

FCR shall only proceed with Project-related activities when the AA 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 CHR 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.

FCR shall only proceed with Project-related activities when all the CHR 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 work place.

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:<br>• Detailed Design Drawings<br>• Slope Stability Analysis<br>• Geotechnical Report<br>• Fluvial Geomorphology and Meander Beltwidth Assessment<br>• SWM Plan<br>• ESC Plan<br>• Tree Removal, Restoration and Compensation Plan<br>• 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:

- FCR 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 | |
| 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. 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, FCR 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) 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, 2021) 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 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 *Clean Water Act.* |
| 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. |
| | 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. |
| | 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 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). |
| | 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. |
| 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. |
| | 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. |

| Feature | Future Design Commitment |
|---|---|
| | 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 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 that includes exploring options for wildlife protection and enhancement 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. |
| 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. |
| 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. |
| | 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.<br>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 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. |
| | 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. |
| | 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. |
| | 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 |

| Feature | Future Design Commitment |
|---|---|
| | Where permits are required on City of Toronto or private property lands within the Study Area, First Capital 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. |
| **Cultural Environment** | |
| Archaeological Resources | If final limits of the GO Station are altered and fall outside the current Study Area, an additional Stage 1 AA is required to assess these areas. |
| Cultural Heritage Resources | 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. |
| **Social and Built Environment** | |
| Socio-Economic and Land Use Characteristics | FCR will confirm specific property requirements prior to Project construction to determine predicted property impacts. |
| | FCR 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. |
| | FCR 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 FCR to finalize the installation of water and sewer service. Subsequent to the connection being installed, FCR 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. |
| | FCR 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). |

| Feature | Future Design Commitment |
|---|---|
| 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 | FCR 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. |
| **Climate Change** | |
| Climate Change | Contractors will adhere to the GO Design Requirements Manual (DRM) 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. |
| | Stormwater management plan to be prepared in accordance with guidelines and the Christie Secondary Plan. |
| 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 (ESC) 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. |
| | 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. |
| | Dust from the work areas will be controlled through suppressants (e.g., water). |
| Wildlife | The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits. |
| | 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 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. |
| | Suitable human-made structures within the Study Area shall be inspected 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. |
| | 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. |

| Feature | Future Construction Commitment |
|---|---|
| | Workers shall be provided with training on 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:<br>• 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.<br>• 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. |
| | 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 Breading 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. |
| | 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 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. |
| **Cultural Environment** | |
| Archaeological Resources | No construction activities shall take place within the GO Station Study Area prior to the MHSTCI confirming in writing that all archaeological requirements have been met. |

| Feature | Future Construction Commitment |
|---|---|
| | 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. |
| | In the event that archaeological remains are discovered during construction activities, the consultant archaeologists, approval authority and the MHSTCI should be notified immediately. |
| | 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 of Cemeteries at the Ministry of 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. |
| | 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 these 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. |

| Feature | Future Construction Commitment |
|---|---|
| **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. |
| | As part of Metrolinx's rail operations, maintenance and obligations under Transport Canada, the Mimico Creek Bridge and adjacent banks are to be inspected annually and a report is generated. The tracks are also to be inspected at least twice a week. |
| 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 | N/A |
| **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:<br>• Metering indoor and outdoor water use to better track and manage the impacts of extended droughts on operations and landscape plantings;<br>• Using water conserving systems to reduce consumption; and<br>• Planting drought resistant vegetation. |

### *8.1.1 Future Consultation Commitments*

The Notice of Commencement of the TPAP is planned for August 27, 2021. At the Notice of Completion of the EPR, the EPR will be available for a 30-day public, agency and Indigenous Nations Review and a subsequent 35-day Ministers Review. Comments and feedback will continue to be responded to an ongoing basis throughout the course of the Project. Comments and input from the public as part of the evaluation of potential environmental effects will be taken into consideration, through the detailed design stages of the Project. Reports will be distributed to Indigenous Nations listed in Section 6.3 of this EPR, for comments and input to be taken into account through the detailed design stages of the Project.

# 9. References

Ministry of Municipal Affairs and Housing. (1990). *Ontario Planning Act.*

AECOM. (2018). *Stage 1 Archaeological Assessment Park Lawn / Lake Shore Boulevard West Transportation Master Plan City of Toronto, Ontario.* Toronto: Report on file with Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

ANSI. (2017). *Pruning Standards.* Retrieved from ISA.

Aquafor Beech Ltd. and Earthfx Inc. (2016). *Runoff Volume Control targets for Ontario.*

ASI (Archaeological Services Inc.), Cuesta Systems Inc., Commonwealth Resources Management Limited, Golder Associates, and Historica Research Limited. (2007). *A Master Plan of Archaeological Resources for the City of Toronto (Interim Report).* Retrieved from https://www.toronto.ca/explore-enjoy/history-art-culture/

ASI. (2013b). *Stage 1 and 2 Archaeological Assessment of 2150 Lake Shore Boulevard West Lot D, Lake Front Concession Part of Lots 12, 13, 14, 15, Registered Plan 1176, Geographic Township of Etobicoke, County of York Former City of Etobicoke, Now in the City of Toronto.* Toronto: Report on file with the Ontario Ministry of Heritage, Sport, Tourism, and Culture Industries.

ASI. (2017). *Stage 1 Archaeological Assessment GO Rail Network Electrification TPAP City of Toronto, Regional Municipalities of Peel, Halton, York and Durham, County of Simcoe, Ontario.* Toronto: Report on file with the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

ASI. (2020a). *OnCorr Due Diligence Project – Lakeshore West Corridor Non-Priority Properties Cultural Heritage Assessment Report – Existing Conditions City of Toronto, City of Mississauga, Halton Region, City of Hamilton and City of Niagara Falls.*

ASI. (2020b). *Cultural Heritage Evaluation Report: Seven Bridges: Parkside Drive Bridge (Mile 3.89), Colborne Lodge Drive Bridge (Mile 4.17), Ellis Avenue Bridge (Mile 4.54), Windermere Avenue Bridge (Mile 4.70), Gardiner On-Ramp From Riverside Drive (Mile 4.90), Forme.*

ASI Archaeolgical Services Inc. (2016). *Cultural Heritage Evaluation Recommendation Report: Gardiner Expressway Overhead, Mile 5.57 to 5.58, Lakeshore West Rail Corridor.* On file with author.

Beacon Environmental Limited. (n.d.). *Mimico Creek Conceptual Design GO Transit Oakville Mile 5.94.* 2017.

Beacon Environmental Ltd. (2017). *Mimico Creek Conceptual Design GO Transit Oakville Mile 5.94, City of Toronto.*

Boulton, D. (1805). *Sketch of His Majesty's Province of Upper Canada.* Rickaby, London: Baxter Publishing Company, 1961. C.

Cadman, M. D., Sutherland, D. A., Beck, G. G., Lepage, D., & Couturier, A. R. (2007). *Atlas of the Breeding Birds of Ontario, 2001-2005.* Toronto: Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, Ontario Nature.

Cadman, M., Sutherland, D., Beck, G., Lepage, D., & Couturier, A. (2007). *Atlas of the Breeding Birds of Ontario, 2001-2005.* Toronto, Ontario: Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources and Ontario Nature.

Canadian Counsil of Ministers of the Environment. (2012). *Guidance Docuemnt on a Achievement Determination Canadian Ambient Air Quality Standards for Fine Particulate Matter and Ozone*. Retrieved from ccme.ca: http://www.ccme.ca/files/Resources/air/aqms/pn_1483_gdad_eng.pdf

Canadian Food Inspection Agency. (2015). *Canadian Food Inspection Agency*. Retrieved from Government of Canada: https://www.inspection.gc.ca/

CFIA. (2014). *D-03-08: Phytosanitary Requirements to Prevent the Introduction Into and Spread Within Canada of the Emerald Ash Borer, Agrilus Planipennis (Fairmaire)*. Retrieved January 9, 2018, from http://www.inspection.gc.ca/plants/plant-pests-invasive-species/directives/forestry/d-03-08/eng/1323821135864/1323821347324

Chapman, L., & Putman, D. (1984). *The Physiography of Southern Ontario.* Ontario Ministry of Natural Resources.

Cheminfo Services Inc. (2005, March). *Best Practices for the Reduction of Air Emissions From Construction and Demolition Activities.* Environment Canada Transboundary Issues Branch. Retrieved from Environment Canada Transboundary Issues Branch.

Cheminfo Services Inc. (2005, March). *Best Practices for the Reduction of Air Emissions From Construction and Demolition Activities.* Environment Canada Transboundary Issues Branch. Retrieved from Environment Canada Transboundary Issues Branch.

City of Toronto. (1998-2020a). *Open Data Catalog*. Retrieved April 23, 2020, from https://open.toronto.ca/catalogue/?dataset_category=Map&vocab_formats=SHP&sort=last_refreshed%20desc

City of Toronto. (1998-2020b). *Cycling Network Plan*. Retrieved April 23, 2020, from https://www.toronto.ca/services-payments/streets-parking-transportation/cycling-in-toronto/cycle-track-projects/cycling-network-10-year-plan/

City of Toronto. (1998-2020d). *Official Plan Maps*. Retrieved April 23, 2020, from https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/official-plan/official-plan-maps-copy/

City of Toronto. (1998-2020e). *Development Project*. Retrieved April 23, 2020, from http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init

City of Toronto. (2003). *2001, Mimico Social Profile #1 - Age and Gender Neighbourhoods*. Retrieved April 21, 2020, from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2001/pdf1/cpa17.pdf

City of Toronto. (2003). *2001, Stonegate-Queensway Profile #1 - Age and Gender Neighbourhoods*. Retrieved April 21, 2020, from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2001/pdf1/cpa16.pdf

City of Toronto. (2008). *By-Law 514-2008, Building Construction and Demolition .*

City of Toronto. (2008). *Chapter 658, Ravine and Natural Feature Protection.* Retrieved from Toronto Municipal Code: https://www.toronto.ca/legdocs/municode/1184_658.pdf

City of Toronto. (2011). *Guidelines for Completion of an Arborist Report*. Retrieved from https://www.toronto.ca/data/parks/pdf/trees/arborist-report-guidelines.pdf

City of Toronto. (2016). *Tree Protection Policy and Specification for Construction Near Trees*. Retrieved from https://www.toronto.ca/data/parks/pdf/trees/tree-protection-specs.pdf

City of Toronto. (2018a). *2016 Neighbourhood Profile - Mimico (includes Humber Bay Shores)*. Retrieved April 21, 2020, from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2016/pdf1/cpa17.pdf

City of Toronto. (2018b). *2016 Neighbourhood Profile - Stonegate-Queensway*. Retrieved April 21, 2020, from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2016/pdf1/cpa16.pdf

City of Toronto. (2018c). *2016 Neighbourhood Profile - City of Toronto*. Retrieved April 21, 2020, from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2016/pdf1/alltoronto.pdf

City of Toronto. (2018d). *Road Classification System*. Retrieved April 21, 2020, from https://www.toronto.ca/wp-content/uploads/2019/09/8f90-TS_RCS_2019-CIty-Wide-District.pdf

City of Toronto. (2019a). *2019-2021 Implementation Program - Etobicoke York*. Retrieved April 21, 2020, from https://www.toronto.ca/wp-content/uploads/2019/07/9146-Etobicoke_2019-2021.pdf

City of Toronto. (2021). *Official Plan Amendment 506 - Draft Christie's Secondary Plan.*

City of Toronto. (2021). *Toronto Green Standard*. Retrieved from https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/

City of Toronto. (Nov. 27, 2019). *Toronto Municipal Code Chapter 363, Building Construction and Demolition, Article 5.* Toronto.

CTC Source Protection Region. (2015). *Approved Source Water Protection Plan for the Credit Valley, Toronto Region and Central Lake Ontario Source Water Protection Area*. Retrieved from CTC Source Protection Region: https://www.ctcswp.ca/the-science/toronto-and-region-spa-assessment-report/

Environment and Climate Change Canada. (1994). *Migratory Birds Convention Act.* Retrieved from http://laws-lois.justice.gc.ca/eng/acts/M-7.01/page-1.html
Environment and Climate Change Canada. (2002). *Species at Risk Act.* Retrieved from http://laws-lois.justice.gc.ca/PDF/S-15.3.pdf
ERA Architects Inc. (2019). *2150 Lake Shore Heritage Impact Assessment, 2150 - 2194 - Lake Shore Boulevard West 23 Park Lawn Road, Toronto.* Toronto, Ontario.
Federal Transit Administration. (2006). *Transit Noise and Vibration Impact Assessment.*
Federal Transit Administration. (2006). *Transit Noise and Vibration Impact Assessment.*
Golder Associates Ltd. (2019). *Phase Two Conceptual Site Model Technical Memorandum 2150 LAKE SHORE BOULEVARD WEST, TORONTO, ONTARIO*.
Government of Canada. (1994). *Migratory Birds Convention Act.* Retrieved from Justic Laws Website: https://laws-lois.justice.gc.ca/eng/acts/m-7.01/
Government of Canada. (2017b). *Migratory Birds: Technical Information on Risk Factors*. Retrieved November 13, 2017, from https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/technical-information-risk-factors.html#_03[canada.ca]
Government of Canada. (2020). *Guidelines to reduce risk to migratory birds*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html
Government of Ontario. (2015). *Ontario's Climate Change Strategy.*
Government of Ontario. (2016). *Climate Change Action Plan.*
Government of Ontario. (2018). *O. Reg 213/91 - Construction Projects.*
iNaturalist. (2020). *Herps of Ontario*. Retrieved from iNaturalist: https://www.inaturalist.org/projects/herps-of-ontario.
IPPC. (2014). *Glossary to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.*
ISA. (2016). *Managing Trees During Construction.*
ISA. (2017). *BMP Root Management.*
ISA. (2019). *BMP Tree Pruning.*
Lee. (2008). *ELC Ecosystem Catalogue: 2008 Version.* Retrieved from http://www.conservation-ontario.on.ca/events_workshops/ELC_portal/index.html
Lee, H., Bakowsky, J., Riley, J., Bowles, M., Puddister, M., Uhlig, P., & McMurray, S. (1998). *Ecological Land Classification for Southern Ontario: First Approximation and its Application.* Ontario Ministry of Natural Resources, Southcentral Region, Science Development and Transfer Branch. Technical Manual ELC-005.
LSRCA. (2016). *LSRCA Technical Guidelines for Stormwater Management Submissions*. Retrieved January 9, 2018, from http://www.lsrca.on.ca/Shared%20Documents/permits/swm_guidelines.pdf
McDermid, J., Dickin, S., Winsborough, C., Switzman, H., Barr, S., Gleeson, J., . . . Gray, P. (2015). *State of Climate Change Science in the Great Lakes Basin: A Focus on Climatological, Hydrological and Ecological Effects.*
MECP. (2014). *Guide: Ontario's Transit Project Assessment Process*. Retrieved from https://www.ontario.ca/page/guide-environmental-assessment-requirements-transit-projects
MECP. (2015). *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* .
MECP. (2017, 2). *Guideline A-11: Air Dispersion Modelling Guideline for Ontario.* Retrieved from ontario.ca: https://www.ontario.ca/document/guideline-11-air-dispersion-modelling-guideline-ontario-0
MECP. (2018, November 29). Retrieved from https://www.ontario.ca/page/made-in-ontario-environment-plan
MECP. (2018). *Made-in-Ontario Plan*. Retrieved from https://www.ontario.ca/page/made-in-ontario-environment-plan
Metrolinx. (2016). Park Lawn GO Station - Initial Business Case.

Metrolinx. (2016). *Metrolinx Sustainability Strategy 2015 - 2020* . Retrieved from http://www.metrolinx.com/en/aboutus/sustainability/Sustainability_Strategy_2015-2020_EN.pdf
Metrolinx. (2016b). *Metrolinx Sustainability Strategy 2015 - 2020.*
Metrolinx. (2017). *Barrie Rail Corridor Expansion Transit Project Assessment Process Environmental Project Report.*
Metrolinx. (2017). *Planning for Resiliency: Towards a Corporate Climate Adaptation Plan.*
Metrolinx. (2017c). *GO Design Requirements Manual.*
Metrolinx. (2017d). *Planning for Resiliency: Towards a Corporate Climate Adaptation Plan.*
Metrolinx. (2018b). *2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area [draft].* Retrieved from http://www.metrolinx.com/en/regionalplanning/rtp/Metrolinx%202041%20Regional%20Transportation%20Plan.pdf
Metrolinx. (2018d). Updated Initial Business Case - Park Lawn GO Station.
Metrolinx. (2019). *Environmental Guide for Noise and Vibration Impact Assessment.*
Metrolinx. (2020, January). Vegetation Removal and Compensation Guideline. City of Toronto, Ontario.
Metrolinx. (2020). Vegetation Removal and Compensation Guideline. Ontario.
Metrolinx. (2020a). *Updated Initital Business Case.*
Metrolinx. (2021). *DS-05 Sustainable Design Standard_v1.0*. Retrieved from http://www.gosite.ca/engineering_public/DesignStandards/DS-05%20Sustainable%20Design%20Standard_v1.0.pdf
MHSTCI . (1990). *Ontario Heritage Act, R.S.O 1990, c, O.18 [As amended in 2019].*
MHSTCI. (2016). *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, A Checklist for the Non-Specialist*. Retrieved from http://www.mtc.gov.on.ca/en/heritage/tools.shtml
MHSTCI. (2020b). *Ontario's Past Portal*. Retrieved from PastPortal: https://www.pastport.mtc.gov.on.ca
Ministry of Environment and Energy. (1994). *MOEE / GO Transit Noise and Vibration Protocol.*
Ministry of Municipal Affairs and Housing. (2020). *Provincial Policy Statement*. Retrieved from https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf
Ministry of Natural Resources. (2000). *Significant Wildlife Habitat Technical Guide.* Peterborough: Fish and WIldlife Branch, Wildlife Section. Science Development and Transfer Branch, Southcentral Science Section.
Ministry of Natural Resources. (2007). *Endangered Species Act.* Retrieved from Ontario: https://www.ontario.ca/laws/statute/07e06
Ministry of Natural Resources. (2010b). *Natural Heritage Reference Manual.* Retrieved from https://docs.ontario.ca/documents/3270/natural-heritage-reference-manual-for-natural.pdf
Ministry of Natural Resources. (2015). *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E.* Retrieved from https://dr6j45jk9xcmk.cloudfront.net/documents/4776/schedule-7e-jan-2015-access-vers-final-s.pdf
Ministry of the Environment. (2004, 1). *Guide: Ontario's Transit Project Assessment Process.* Retrieved from https://dr6j45jk9xcmk.cloudfront.net/documents/1799/3-8a-6-ea-transit-projects-en-pdf.pdf
Ministry of Tourism and Culture. (2011). *Standards and Guidelines for Consultant Archaeologists.*
MMA. (2014). *Provincal Policy Statement.*
MMAH. (2019). *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019*. Retrieved from https://files.ontario.ca/mmah-greater-golden-horseshoe-place-to-grow-english-15may2019.pdf
MNRF. (2000). Significant Wildlife Habitat Technical guide. Fish and Wildlife Brang, Wildlife Section. Science Development and Transfer Branch, Southcentral Section.
MNRF. (2015a). *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E*. Retrieved October 18, 2017, from https://dr6j45jk9xcmk.cloudfront.net/documents/4776/schedule-7e-jan-2015-access-vers-final-s.pdf

MNRF. (2015b). *Significant Wildlife Habitat Ecoregional Criteria Schedules: Ecoregion 6E*. Retrieved October 30, 2017, from https://www.ontario.ca/document/significant-wildlife-habitat-ecoregional-criteria-schedules-ecoregion-6e

MOE. (2014). *Guide: Ontario's Transit Project Assessment Process.* Retrieved August 24, 2016, from https://www.ontario.ca/page/guide-environmental-assessment-requirements-transit-projects

MOE. (2016). *Ontario's Ambient Ar Quality Criteria - Sorted by Chemical Abstracts Service Registry Number*. Retrieved October 18, 2017, from https://www.ontario.ca/page/ontarios-ambient-air-quality-criteria-sorted-chemical-abstracts-service-registry-number

MOECC. (2016). Retrieved November 14, 2017, from Migratory Birds Regulations Last Amended June 2016: http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._1035.pdf[laws-lois.justice.gc.ca

MOECC. (2016, 12). *Ontario's Ambient Air Quality Criteria - Sorted by Contaminant Name*. Retrieved from ontario.ca: https://www.ontario.ca/page/ontarios-ambient-air-quality-criteria-sorted-contaminant-name

MOECC. (2017). *Considering Climate Change in the Environmental Assessment Process.* Retrieved from https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process

MTO. (2012, 6). *Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects.* Retrieved from raqsb.mto.gov.on.ca: http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/24fe4bb174a2af7085257aa9006558f4/$FILE/MTO%20Environmental%20Guide%20for%20Air%20Quality%20June%202012%20Final%20ACC.pdf

Office of the Auditor General of Canada. (2016). *Spring Reports of the Commissioner of the Environment and Sustainable Development, Report 2: Mitigating the Impacts of Severe Weather.* Retrieved from http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201605_02_e_41381.html

OIPC. (2016). *Clean Equipment Protocol for Industry.* Retrieved from Ontario Invasive Species Council: https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean-Equipment-Protocol_June2016_D3_WEB-1.pdf

Ontario Ministry of the Environment. (2013). *NPC-300 - Environmental Noise Guideline.*

Robinson, C. (1885). *History of Toronto and County of York, Ontario.* Toronto: C.B. Robinson.

Sharpe, D. R. (1980). *Quaternary Geology of Toronto and Surrounding Area.* Sudbury: Ontario Geological Survey.

Smith, W. H. (1846). *Smith's Canadian Gazetteer.*

Smith, W. H. (1851). *Canada: Past, Present and Future, Being a Historical, Geographical, Geological and Statistical Account of Canada West. Vol. 1.* Toronto: Thomas Maclear.

Statistics Canada. (2013). *National Household Survey (NHS), 2011*. Retrieved April 21, 2020, from https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5178

Statistics Canada. (2017). *Toronto, C [Censis subdivision], Ontario and Ontario [Province] (table). Census Profile*. (2. Ottawa. Released November 29, Editor, & 2016 Census. Statistics Canada Catalogue no. 98-316-W2016001) Retrieved April 21, 2020, from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3520005&Geo2=PR&Code2=35&SearchText=ontario&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0

Toronto and Region Conservation Authority (TRCA). (2017). *Stage 1-2 Archaeological Assessment Oakville Bank Stabilization Lots 18 & 19, Southern Division Fronting the Humber Geographic Township of Etobicoke, Historic York County in the City of Toronto.* Toronto: Report on file with the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

Toronto and Region Conservation Authority. (2010). *Etobicoke and Mimico Creeks Watersheds Technical Update Report (Instream Structures).* Retrieved from http://www.trca.on.ca/dotAsset/148577.pdf

Toronto and Region Conservation Authority. (2013). *Mimico Creek Barrier Mitigation Project.* Retrieved from https://s3-ca-central-1.amazonaws.com/trcaca/app/uploads/2016/03/17182405/FishBarriersMimCrkFinal.pdf

Toronto and Region Conservation Authority. (2018). *Mimico Creek Watershed Report Card 2018.* Retrieved from https://reportcard.trca.ca/app/uploads/2018/03/TRCA_WRC-2018_Mimico_FINAL.pdf

Toronto Community Housing Corporation. (2020). *Etobicoke South High Park*. Retrieved April 27, 2020, from https://www.torontohousing.ca/about/our-housing/Pages/Etobicoke-South-High-Park.aspx

Toronto Transit Commission. (2020a). *TTC System Map*. Retrieved April 23, 2020, from https://www.ttc.ca/PDF/Maps/TTC_SystemMap.pdf

Toronto Transit Commission. (2020b). *Schedules and Maps*. Retrieved April 23, 2020, from http://www.ttc.ca/Routes/index.jsp

Toronto, C. o. (2016b, July Tree Protection Policy and Specifications for Construction Near Trees). Retrieved from https://www.toronto.ca/data/parks/pdf/trees/tree-protection-specs.pdf

Toronto, C. o. (2018c). Retrieved from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2016/pdf1/alltoronto.pdf

TRCA. (2014). *The Living City Policies.* Retrieved from https://drive.google.com/file/d/0BxjqkzmOuaaRYWxqSGdUaHp5UE0/view

TRCA. (2018). *Guidelines for Determining Ecosystem Compensation.* Retrieved from https://trca.ca/app/uploads/2019/11/TRCA-Guideline-for-Determining-Ecosystem-Compensation-June-2018_v2.pdf

TTC. (2017). *Toronto Transit Commission*. Retrieved October 12, 2017, from http://www.ttc.ca/Routes/General_Information/General_Information.jsp

Water's Edge. (2021). *Park Lawn GO - Fluvial Geomorphic and Meander Beltwidth Assessment.*

York Region. (2014). *York Region Archaeological Management Plan*. Retrieved July 17, 2018, from http://www.york.ca/wps/wcm/connect/yorkpublic/b8461c7d-fed7-4f21-b1c2-8693efb596a0/17054_ArchaeologicalManagementPlan2014.pdf?MOD=AJPERES