

The background image shows a busy urban transit station. In the foreground, several pedestrians are walking on a paved path. A light rail train is visible in the middle ground, stopped at the station platform. The station has a modern design with a large, curved roof structure. The overall scene is captured in a slightly desaturated, blue-toned style.




APPENDIX A

Natural Environment Report

**Lakeshore Development Inc.
Park Lawn GO Station
Natural Environment Report**

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2021-12-17	0	Rachel Eagles	Sean Stuart	Melissa Alexander	Final Report
Signatures					
Date	Rev.	Prepared By	Checked By	Approved By	Status
HATCH					

Executive Summary

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

As a component of the EA, this Natural Environment Report (NER) has been prepared to document the existing conditions, and assess the potential effects of the new GO Station on the Natural Environment. This Report includes a summary of the existing conditions, primarily relying on existing records, Hatch’s familiarity with the area and site visits to inform the existing condition sections and appendices such as the Species at Risk (SAR) screening and significant wildlife habitat evaluations. The Study Area for the NER encompasses the proposed GO Station, supporting infrastructure layouts, anticipated construction staging areas, and supporting active transportation infrastructure footprints, as well as a 120 metre zone of influence.

A desktop review was undertaken to document publicly available background information within the Study Area from various public databases in order to inform the existing conditions. Additionally, six site investigations were conducted in order to document existing conditions within the area.

Natural areas identified within the Study Area include the Mimico Creek ravine lands to the west of Park Lawn Road and cultural woodland and cultural meadow communities surrounding the highway and roads. South of the Lakeshore West Rail Corridor, the 2150 Lake Shore Boulevard property represents a highly disturbed sand and gravel barren area consisting of imported fill from the demolition of the former factory. In addition, an assumed brownfield site that has transitioned into a meadow community is located in the southwest corner of the Study Area.

Ecological Land Classification (ELC) was completed in order to document the vegetation communities within the Study Area. In total, the site consists of 23 identifiable ELC polygons (hereafter referred to as “Units”) comprised of 12 different ecosite types. In total, four ELC communities are expected to be

partially lost from construction activities. Tree clearing on the west side of Park Lawn Road will also result in a loss of cultural vegetation communities in the Mimico Creek valley. No SAR plants or rare vegetation communities have been identified in the Study Area. Although the vegetation communities are not considered sensitive, a mitigation hierarchy approach will be used in order to first avoid and minimize vegetation disturbance through the delineation of vegetation removal zones prior to construction, as well as implementing timing restrictions for clearing activities. In areas that cannot be avoided appropriate mitigation measures have been developed including measures to mitigate the proliferation of invasive species tree clearing and pruning best practices and revegetation protocols. Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto Ravine and Natural Feature Protection bylaw (RNFP), and Toronto and Region Conservation Authority (TRCA) permitting process.

Mimico Creek falls within the Study Area to the west of Park Lawn Road and provides habitat for a number of fish species, including American Eel (listed as Endangered under the *Endangered Species Act*) (MNR, 2007). A number of potential impacts are associated with the proposed works adjacent to the watercourse such as further erosion, sedimentation, loss of habitat and flow alterations. Recommended mitigation measures are expected to minimize any impacts to Mimico Creek during construction activities. These include measures such as 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.

A total of 111 bird species have been documented within a 10 x 10 km square overlapping the Study Area and a total of 42 bird species were confirmed during the site investigations. Hatch biologists incidentally observed Bank Swallows and Barn Swallows flying over Mimico Creek (listed as 'Threatened' under the *Endangered Species Act*, 2007 (MNR, 2007)). All bridges within the Study Area were searched for Barn Swallow nests, however no nesting habitat was confirmed within the Study Area. The Lake Shore Boulevard bridge over Mimico Creek (approximately 300 m south of the Study Area), appears to be the preferred nesting habitat within the area as over 10 individuals were observed flying in and out of the overpass. Candidate Bank Swallow nesting habitat was also observed within the highly eroded banks immediately south of the Study Area along Mimico Creek. No impacts to SAR birds nesting habitat is expected from the proposed works. 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. To avoid impacts to nesting birds protected under the *Migratory Birds Convention Act*, vegetation will be removed between September 1 and March 31 which is outside of the breeding bird window to avoid sensitive periods.

A total of 11 herpetofauna species have been documented within a 10 x 10 km square overlapping the Study Area, however no species were incidentally observed during the site investigations to date. An evaluation of Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (MNR, 2015) indicated that the area may provide Reptile Hibernaculum habitat. Reptiles have not been observed 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 reptiles within the area, however no hibernaculum were observed during site investigations. 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 and Lake Ontario. In addition to reptile hibernaculum, the project area also has the potential to provide habitat for Special Concern and Rare Wildlife Species. Construction activities have the potential to cause a loss of habitat for any species of conservation concern, as well as result in an increased risk of wildlife strikes from heavy machinery and trains. Mitigation measures include the preparation of a Wildlife Management Plan, eliminating access to the construction site using exclusionary fencing, site sweeps and ensure that workers are properly trained to handle and identify species of conservation concern.

Ravine systems 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, biodiversity in the area may be reduced. Due to the limited 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 Toronto ravine system as a whole, however it is recognized that a permanent loss of form and function of vegetation communities will result in compensation. Compensation will be initiated through the TRCA and/or City of Toronto approval process, adhering to the Metrolinx Vegetation Guide (Metrolinx, 2020) and the City of Toronto RNFP By-law.

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Ecological Land Classification

Glossary of Terms and Acronyms

ANSI:	Areas of Natural and Scientific Interest
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.
CAA:	<i>Conservation Authorities Act</i>
COSEWIC:	Committee on the Status of Endangered Wildlife in Canada
COSSARO:	Committee on the Status of Species at Risk in Ontario
CWS:	Canadian Wildlife Service
DBH:	Diameter at Breast Height
Developer:	Lakeshore Development Inc.
DFO	Fisheries and Oceans Canada
EA:	Environmental Assessment
ECCC:	Environment and Climate Change Canada
ELC:	Ecological Land Classification
ESA:	<i>Endangered Species Act</i>
IBC:	Initial Business Case
LIO:	Land Information Ontario
MBCA:	<i>Migratory Birds Convention Act</i>
MNR/MNRF/MNDMNRF:	Ministry of Natural Resources/Ministry of Natural Resources and Forestry. The Department of Lands and Forests became the Ministry of Natural Resources in 1972. The Ministry of Natural resources changed its name to the Ministry of Natural Resources and Forestry on June 24, 2014. The Ministry of Northern Development merged with the Ministry of Natural Resources and Forestry, and Indigenous Affairs on June 25 2021. Thus, MNR, MNRF and MNDMNRF are considered to be synonymous for the purposes of this Report.
MOE/MOEE/MOECC/ MECP:	Ministry of the Environment/Ministry of the Environment and Energy/Ministry of the Environment and Climate Change. The Ministry of the Environment was created in 1972 and merged with the Ministry of Energy to form the

Ministry of Environment and Energy (MOEE) from 1993 to 1997 and again in 2002. The Ministry of the Environment changed its name to the Ministry of the Environment and Climate Change (MOECC) on June 24, 2014. The Ministry changed its name to Ministry of the Environment, Conservation and Parks (MECP) on June 29, 2018. Thus, the MOE/MOEE/MOECC and MECP are considered to be synonymous for the purposes of this Report.

NER:	Natural Environment Report
NHIC:	Natural Heritage Information Centre
NHRM	Natural Heritage Resource Manual
NHS:	Natural Heritage System
OBA:	Ontario Butterfly Atlas
OBBA:	Ontario Breeding Bird Atlas
OGS:	Ontario Geological Survey
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.
PPS:	Provincial Policy Statement 2020 - the statement of the government's policies on land use planning.
PSW:	Provincially Significant Wetlands
RNFP:	Ravine and Natural Feature Protection
SAR:	Species at Risk
SARA:	<i>Species at Risk Act</i>
SCC:	Species of Conservation Concern
SMP	Soil Management Plan
SWH:	Significant Wildlife Habitat
SWHTG:	Significant Wildlife Habitat Technical Guide
TGS:	Toronto Green Standards
TPAP:	Transit Project Assessment Process
TRCA:	Toronto and Region Conservation Authority

1. Introduction

1.1 Project Description

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

The 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. An updated IBC (2020) was published June 11, 2020.

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 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 Park Lawn GO Station will include a fully accessible station building with platform access points, tunnel infrastructure, multimodal access, bicycle parking and connections with local transit. The proposed Project will include:

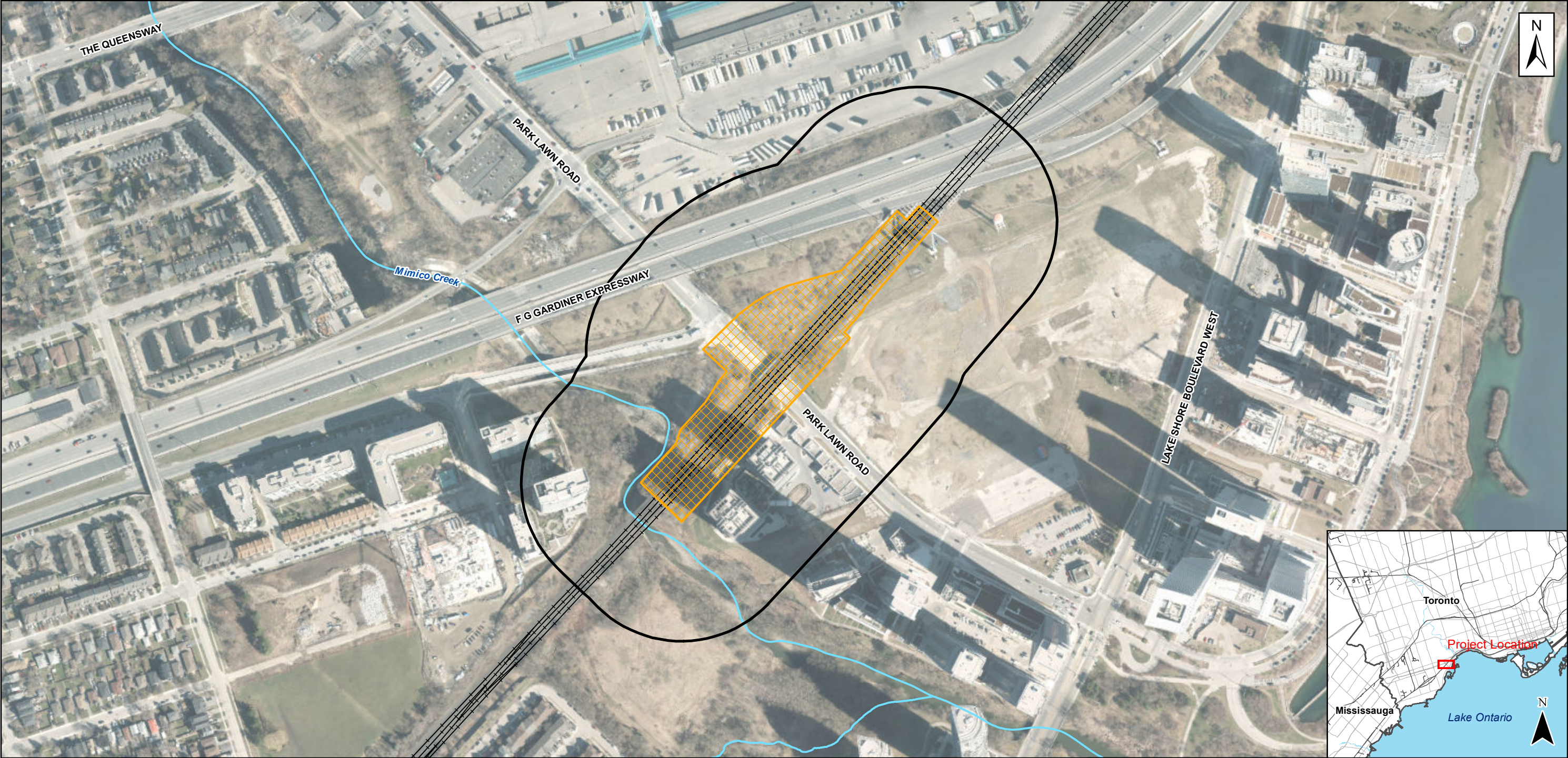
- Two side platforms (north and south);
- Pick-up and drop off (PUDO);
- Secure bike parking and covered bicycle parking;
- Two-storey main station building (south of tracks);

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





As a component of the EA, this Natural Environment Report (NER) has been prepared to document the existing conditions, and assess the potential of the new GO Station on the Natural Environment. This Report includes a summary of the existing conditions, primarily relying on existing records, Hatch's familiarity with the area and six site visits to inform the existing condition sections and appendices such as the species at risk (SAR) screening and significant wildlife habitat evaluations.

1.2 Study Area

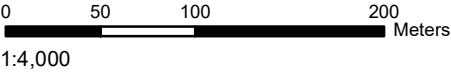
The Study Area for the NER encompasses the proposed GO Station, supporting infrastructure layouts, anticipated construction staging areas, and supporting active transportation infrastructure footprints, as well as a 120 metre zone of influence (see Figure 1-1).




LEGEND

-  Proposed Project Footprint (approximate)
-  Study Area - 120 Metres
-  Railway
-  Permanent Watercourse

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



Project:		Park Lawn GO Station	
Figure Title:		Natural Environment Report - Study Area	
Prepared By:			Date: December 17, 2021
Version: PL.NE.100-1	Review:		Figure: 1-1

2. Environmental Policy Context

This NER will address all matters of provincial interest relative to the natural environment, including, but not limited to:

- Parks, conservation reserves or protected areas;
- Extirpated, endangered, threatened or species of special concern and their habitat;
- A wetland, woodland, habitat for wildlife, or other natural heritage area (e.g., prairie);
- An area of natural or scientific interest (earth or life science);
- A stream, creek, river or lake containing fish and their habitats;
- An area or region of surface water or groundwater or other important hydrological features; and
- Areas that may be effected by a known or suspected on- or off-site source of contamination such as a spill, a gasoline outlet, an open or closed landfill site, etc.

The following sections describe the various Provincial, Federal and Municipal Policy that applies to the Project.

2.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2020), was issued under Section Three of the *Planning Act* (Ministry of Municipal Affairs and Housing, 1990) for matters of provincial interest related to land use planning and development. The PPS aims to provide direction on appropriate development while protecting public health and safety, and the quality of both the natural and built environment (Ministry of Municipal Affairs and Housing, 2020).

There are a number of natural heritage provisions in Section 2.1 of the PPS. These provisions restrict development and site alteration in significant (as defined by the Province) natural areas (e.g., woodlands, wetlands, and Significant Wildlife Habitat (SWH)) unless it can be demonstrated that there will be no negative effects on the features and ecological functions of those natural areas. Technical guidance for implementing the natural heritage policies of the PPS is found within the second edition of the Natural Heritage Resource Manual (NHRM) (Ministry of Natural Resources, 2010). This Manual recommends the approach and technical criteria for identifying and protecting natural heritage features and areas in Ontario.

Municipal Official Plans are the primary vehicle for implementation of the PPS as they identify many of the significant features that are identified by the province. Significant Natural Heritage Features are included below in Table 2-1 and include the respective authority that determines the significance.

Table 2-1: Significant Natural Heritage Features and Authority

Significant Feature	Authority
Significant Habitat of Endangered and Threatened Species	Ministry of Environment, Conservation and Parks (MECP)
Significant wetlands or coastal wetlands	Ministry of Natural Resources and Forestry (MNRF)
Significant Woodlands	Planning Authorities / Municipal Approaches
Significant Valleylands	Planning Authorities / Municipal Approaches
Significant Wildlife Habitat	Planning Authorities / Municipal Approaches
Significant Areas of Natural and Scientific Interest	MNRF
Fish Habitat	Fisheries and Oceans Canada (DFO)

Applicability to the Project

The PPS applies to projects approved under the *Planning Act* and thus does not apply directly to this Project. However, the PPS and its associated guidance documents (e.g., NHRM) provide detailed criteria to identify natural features of “provincial significance”. These are assumed to be equivalent to the “features of provincial importance” which must be assessed through the TPAP. As the Developer endeavours to meet the spirit and intent of the PPS to the extent possible, the criteria listed in the PPS, and its supporting documents, will be referenced throughout this Report as a means to identify natural features of provincial importance within the Study Area.

2.2 Species at Risk

2.2.1 *Species at Risk Act, 2002*

The Federal *Species at Risk Act* (SARA,) provides a framework to ensure the survival of wildlife species and the protection of natural heritage in Canada (Environment and Climate Change Canada, 2002). Under SARA, the Federal government has responsibility for wildlife as follows:

- Wildlife on Federal lands;
- Aquatic species; and
- Migratory birds protected by the *Migratory Birds Convention Act* (MBCA) (Environment and Climate Change Canada, 1994).

Species listed under SARA are defined as SAR of disappearing from Canada. Specifically, SARA contains prohibitions against the killing, harming, harassing, capturing, taking, possessing, collecting, buying, selling or trading of individuals of Endangered, Threatened and Extirpated Species listed in Schedule One of the Act. The Act also contains a prohibition against the damage or destruction of their residence (e.g., nest or den).

The prohibitions in SARA apply throughout Canada to all aquatic species and migratory birds (as listed in the MBCA) regardless of whether the species are resident on federal, provincial, public or private land. This means that if a species is listed in SARA and is either an aquatic

species or a migratory bird, there is a prohibition against harming it or its residence. For all other listed species, the Act's prohibitions only apply on Federal lands.

It is noted that SARA also contains a provision to protect species designated as Endangered or Threatened by a provincial or territorial government when found on Federal lands. In addition, in certain circumstances, SARA prohibitions may be applied to protect any other species listed in Schedule One of SARA when found on private lands, provincial lands or lands within a territory, if provincial/territorial laws do not effectively protect the species or its residence.

Applicability to the Project

The appropriate authority for consideration of a permit application under SARA depends on the species affected by the proposed activity and its location.

Provincial SAR identified in the desktop screening were combined with all known information sources (See Appendix E) prior to cross referencing with SARA Schedule One to determine the potential for SARA species within the Study Area. Any species with potential to be directly or indirectly harmed or have potential residences present were then further evaluated against project activities. If required, targeted surveys are recommended to determine if SARA species are present and to evaluate the effects.

If these species are encountered during subsequent field investigations, the Project may be subject to a permit from the pertinent minister responsible for the identified SARA species or habitat. The pertinent minister in the case of migratory birds protected by the MBCA is the Environment and Climate Change Canada (ECCC), while any fish or aquatic mammal SARA are under the authority of DFO.

2.2.2 *Endangered Species Act, 2007*

The provincial *Endangered Species Act* (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, however these responsibilities were transferred to MECP on April 1, 2019.

The ESA aims to identify at-risk species based on the best available scientific information, to protect species that are at risk and their habitats, and to promote the recovery of species that are at risk (Ministry of Natural Resources, 2007). The Committee on the Status of Species at Risk in Ontario (COSSARO) is an independent committee of experts that considers which plants and animals should be listed as at risk. The Committee reports to the MECP, and communicates its species listing decisions through a report to the MECP. These reports include the outcomes of assessment meetings, including the classification of each species assessed and a summary of listing decision rationales.

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)).

To balance social and economic considerations with protection and recovery goals, the ESA also enables the MECP to issue permits or enter into agreements with proponents, to authorize activities that would otherwise be prohibited by Subsections 9 (1) or 10 (1) of the ESA, provided the legal requirements of the ESA are met (Ministry of Natural Resources, 2007).

Applicability to the Project

It is now the direction of MECP that all proponents conduct a preliminary desktop review of their Study Area which will then be provided to a Management Biologist at the Ministry. Information received from the MECP regarding SAR and SAR Habitat will be incorporated into the NER as it becomes available. If Threatened and/or Endangered species are encountered during field investigations, and Project impacts to SAR cannot be avoided, the appropriate permitting under the ESA will be required.

2.3 Fisheries Act

The *Fisheries Act* (Environment and Climate Change Canada, 1985), administered by DFO, provides a framework for the proper management and control of fisheries and the conservation and protection of fish and fish habitat, including preventing pollution. This *Fisheries Act* prohibits the Harmful Alteration, Disruption or Destruction (HADD) of fish habitat and the death of fish. The *Fisheries Act* was revised in 2019 strengthening the role of Indigenous Nations in project reviews, monitoring and policy development as part of early steps to advance reconciliation.

Applicability to the Project

All watercourses that contain fish or provide fish habitat will be subject to protections and approvals in the *Fisheries Act*. Should the Project encroach on Mimico Creek or present a land based risk to fish or fish habitat, a Request for Review will be prepared and submitted to DFO.

2.4 Conservation Authorities Act

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 Toronto and Region Conservation Authority (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. Policies under this regulation support commitments laid out in the PPS (Section 2.1) for managing development. The main purpose of O. Reg. 166/06 is to ensure public health and safety, and protection of life and property in relation to natural hazards. This regulation establishes guidelines for development, interference with wetlands and alterations to shorelines and watercourses.

Applicability to the Project

Approximately 36 percent of the Study Area falls within TRCA Regulated Lands as presented in Figure 3-1. Additionally, a large percentage of the project Footprint is located within the Regulated Lands. The Regulated Lands are primarily located in the areas adjacent to Mimico Creek, however a small section east of Park Lawn Road is also regulated. As the preliminary design indicates work would occur within the Regulated Lands, therefore the appropriate municipal permitting and TRCA approval requirements will be adhered to.

2.5 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).

Bird species that are protected are listed under Article I of the MBCA, are native or naturally occurring in Canada, and are species that are known to occur regularly in Canada. The legislation protects certain species, controls the harvest of others, and prohibits the commercial sale of all species (Environment and Climate Change Canada, 1994). As described in Section Six of the associated MBR:

“Subject to Subsection 5(9), no person shall:

- *Disturb, destroy or take a nest, egg, nest shelter, Eider Duck shelter or duck box of a migratory bird, or*
- *Have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird except under authority of a permit therefore.”*

The “incidental take” of migratory birds and the disturbance, destruction or taking of the nest of a migratory bird is prohibited. “Incidental take” is the killing or harming of migratory birds due to actions, such as economic development, which are not primarily focused on taking migratory birds. No permit can be issued for the incidental take of migratory birds or their nest or eggs as a result of economic activities. These prohibitions apply throughout the year.

Environment and Climate Change Canada (ECCC) 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).

Applicability to the Project

The MBCA applies to all of Canada and is therefore applicable to the Study Area. 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.

2.6 City of Toronto

The City of Toronto Official Plan (OP) (June 2015 Office Consolidation) provides goals, objectives and policies to direct land use change and activity in the City. This includes Official Plan Amendment (OPA) 262 which amends environmental policies within the OP (including those in Chapter 3) and was adopted by Council in November 2015. 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.

The OP policies (Policies 3.4.10) generally prohibit 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, and 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.

Applicability to the Project

The City of Toronto OP protects ravines and forests larger than 0.5 hectares (ha) among other features through its Ravine and Natural Feature Protection (RNFP) By-law. In relation to the Study Area, the RNFP area corresponds with TRCA regulated areas as shown in Figure 3-1.

The Project will be subject to municipal permitting and approval requirements and will adhere to the requirements of the City of Toronto.

Related to Policy 3.4.15d, alternatives are documented in the Project Description of the Draft EPR, within Section 3.1, as well as the impact assessment of the Preferred Design, included in Section 5 of the EPR. In addition the proposed project has made efforts to reduce the impact, and will incorporate measures to minimize impacts on the significant natural heritage features.

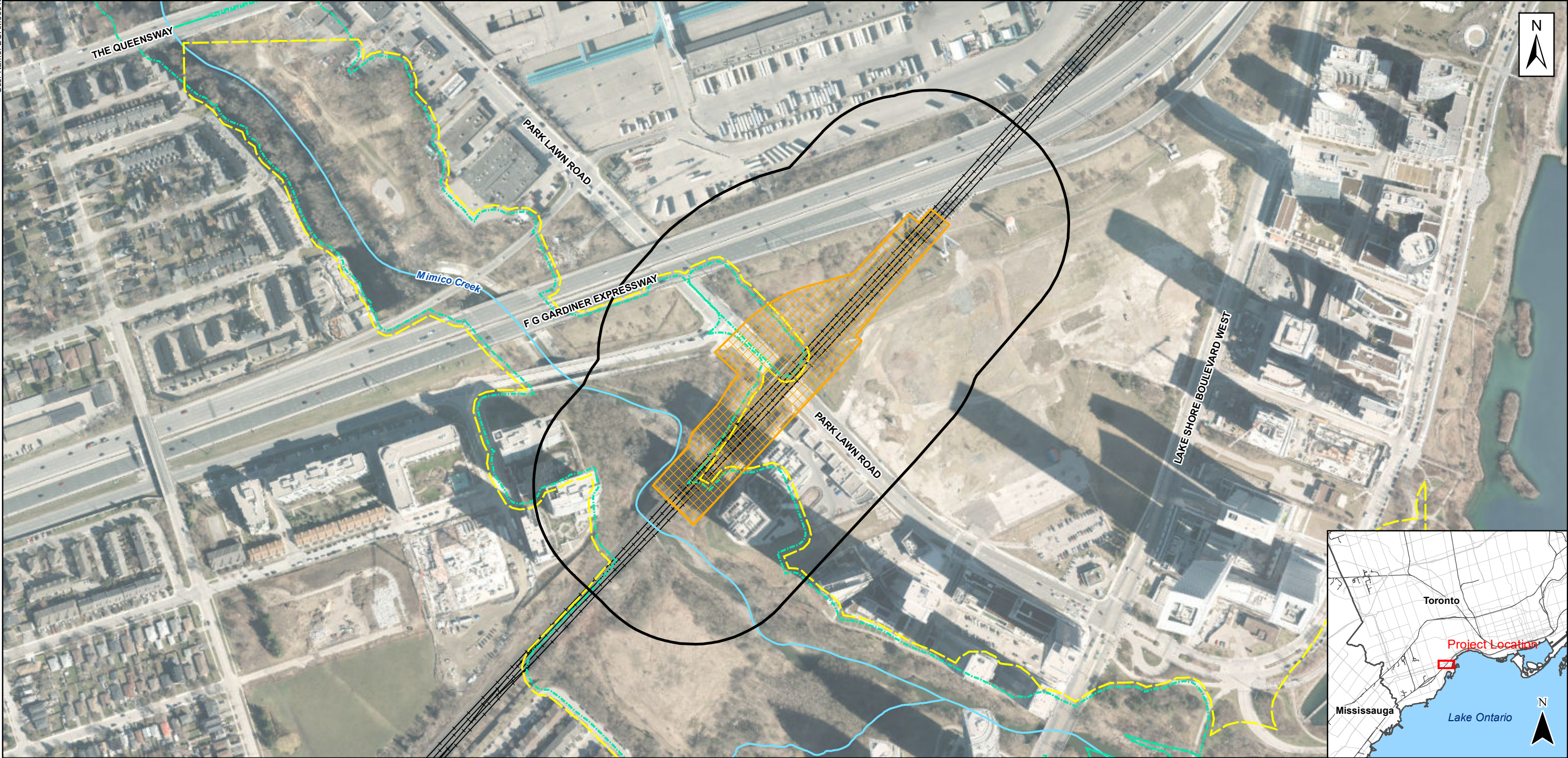
3. Methodology**3.1 Desktop and Background Data Review**

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 including the following:

- City of Toronto Interactive Map (2019);
- City of Toronto Official Plan (Office Consolidation, 2015) ;
- DFO SAR Online Mapping Tool (2019);
- Applicable MNRF databases and mapping including:
 - ◆ Land Information Ontario (LIO) database (Ministry of Natural Resources, 2020a);
 - ◆ Natural Heritage Information Centre (NHIC) database (2020);
 - ◆ Wetland data record(s); and
- Ontario Butterfly Atlas Online (OBA) (Macnaughton, Layberry, Cavašin, Edwards, & Jones, 2020);
- Ontario Breeding Bird Atlas (OBBA) Website (Bird Studies Canada (BSC), Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, & Ontario Nature, 2006);
- MNRF SWH Criteria Schedules for Ecoregion 7E (2015);
- 'Herps of Ontario' database in iNaturalist (iNaturalist, 2020). *Previously known as the Ontario Reptile and Amphibian Atlas;*
- Sources for hydrological features (including source water protection areas), soils and physiography, land forms and physical features (e.g., Chapman and Putnam, Ontario Geological Survey (OGS)); and

- TRCA Open Data Portal (2020);
- The Toronto Region and Central Lake Ontario (CTC) Source Water Protection Area;
- Atlas of the Mammals of Ontario (Dobbyn, 1994); and
- Aerial photography.

Natural features and areas indicated through desktop and background review are shown in Figure 3-1. Photographs of natural features within the Study Area are provided in Appendix B of this Report.

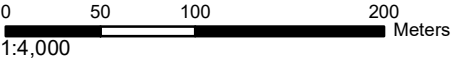


LEGEND

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

NOTES

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



Project: Park Lawn GO Station	
Figure Title: Natural Environment Report - Natural Environment Features	
Prepared By:	Date: December 17, 2021
Version: PL.NE.100-1	Review: Figure: 3-1

3.2 Agency Consultation

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

Data requests were also sent to TRCA on January 22, 2020 for any natural heritage features inclusive of fish, fish habitat and wetland. Information from TRCA was received on February 20, 2020 and included circa pre-2000 Ecological Land Classifications (ELC), habitat information, flora and fauna observations and regulation limits. A meeting with TRCA occurred on May 12 to provide a general project overview and the opportunity for TRCA to comment on the preliminary design. 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 (using a 3:1 ratio) plus a 10 m buffer and determination of the toe erosion allowance.

The MECP was contacted on January 22, 2020 to obtain information concerning significant species (inclusive of 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 provided on September 2, 2020 that stated that the Ministry was in agreement with the Species at Risk 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.

3.3 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:

1. April 29, 2020 – Leaf-off Bat Snag Surveys, Raptor Stick Nest Search and Butternut Search;

2. May 28, 2020 – Breeding and SAR Birds, vascular plants and SAR plants;
3. June 12, 2020 – Fish Habitat;
4. June 17, 2020 - Breeding and SAR birds, vascular plants and SAR Plants; and
5. July 9, 2020 – Breeding and SAR birds, Vascular plants, SAR plants.

Although not expected, additional site visits may be required depending on the findings of the field investigations and pending agency consultation (i.e., MECP SAR screening).

3.3.1 Aquatic Environment

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

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

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

3.3.2 Terrestrial Environment

3.3.2.1 Vegetation and Ecological Land Classification

Prior to entering the field, Hatch biologists compared TRCA ELC data to historical satellite imagery and determined some ELC communities provided by TRCA were removed prior to 2002. Accordingly, 2018 Google Earth imagery was used to approximate changes to the ELC community, 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). Toronto and Region Conservation Authority (TRCA) 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. Hatch continued to use TRCA ELC mapping techniques to provide continuity of the database within and surrounding the Study Area specifically the Ravine and Natural Heritage Features adjacent to Mimico Creek.

A checklist for significant, or rare flora, including SAR, was prepared based on background data 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

during the April 17 site investigation, and is included in Appendix C. The list will be 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. Plants identified during the summer field investigations were added to the vascular plant list provided in Appendix C. The SAR list and other rare vegetation communities were also revised based on the results of the additional field visits.

3.3.2.2 *Wildlife*

A desktop screening for potential SAR, SAR habitat, significant wildlife habitat or other potential wildlife habitat was completed using a combination of the databases listed in Section 3.1.

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 3.3. 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 any stick nest would be visible during the leaf-off snag survey occurring for SAR Bats (See Section 3.3.2.3.1). This field survey involves viewing all trees > 10 cm diameter from ground to canopy; and
- Three Breeding Bird Surveys – Standardized Surveys using OBBA Guide for Participants.

3.3.2.3 *Herpetofauna*

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

3.3.2.4 *Species at Risk*

As previously stated in Section 2.2, Species at Risk include species listed under the SARA and 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 Appendix E of this Report. 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 as noted in Section 3.3. 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.

3.3.2.5 *Significant Wildlife Habitat*

A SWH Assessment Table is provided in Appendix D of this Report and is based on the records reviews, background information, and site investigations completed to date. Determination of SWH is broadly categorized and described in the NHRM (Ministry of Natural Resources, 2010) and the Significant Wildlife Habitat Technical Guide (SWHTG) (Ministry of Natural Resources, 2010). The four 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)
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). Appendix D was updated following each field survey.

4. Existing Conditions

The following sections describe the existing natural environment conditions within the Study Area and their associated sensitivities.

4.1 Landforms and Physiology

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

4.2 Soils and Bedrock Geology

The Study Area exists in a bevelled till plains physiographic landform (Chapman & Putnam, Physiography of Southern Ontario, 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 & Putnam, Physiography of Southern Ontario, 1984).

Several geotechnical investigations have occurred on the east side of the Study Area at 2150 Lake Shore Boulevard (Geo-Canada Ltd., 2013) (Conestoga-Rovers and Associates, 2013) (Golder Associates Ltd., 2015) (Golder Associated 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 m below ground surface. Bedrock was encountered at depths ranging from 4.9 meters below ground surface to 6.1 m below ground surface consisting of primarily shale with siltstone and limestone, characteristic of the Georgian Bay Formation.

4.3 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 area (CTC Source Protection Region, 2015).

Geotechnical investigations at the 2150 Lake Shore Boulevard site (Geo-Canada Ltd., 2013) (Conestoga-Rovers and Associates, 2013) (Golder Associates Ltd., 2015) (Golder Associated Ltd., 2019) found that water levels in the monitoring wells varied between 0.7 m (elev. 84.3 m) to 2.90 (elev. 81.9 m) below ground surface 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) below ground surface. Seasonal groundwater conditions are expected to fluctuate during and following a period of sustained precipitation.

4.4 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 and Region Conservation Authority, 2020b). The form and function of the hydrology of Mimico Creek and its valley features have been negatively impacted by the urbanization of the surrounding areas. Due to the old infrastructure within the watershed, outdated stormwater management facilities often result in poor water quality, as well as increased erosion and flooding (Toronto and Region Conservation Authority, 2018). High chloride concentrations were reported within the watershed (Toronto and Region Conservation Authority, 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. Additional information related to the aquatic environment of Mimico Creek can be found in Section 4.5.

A Rapid Geomorphic Assessment (RGA) and Rapid Stream Assessment Technique (RSAT) were completed for Mimico Creek by Water's Edge north of the railway bridge (Water's Edge, 2021). 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 (Water's Edge, 2021). 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 (Water's Edge, 2021).

A single small Cattail Marsh is noted upstream of the Study Area. This area is better described as surface water drainage channel with associated wetland community along its peripheries and is not expected to provide hydrological stormwater retention to any measurable degree. For more information on the wetland see Section 4.6.2. Humber River is approximately 900 m northeast of the Study Area and is associated with the Lower Humber River Complex Provincially Significant Wetland (PSW). The watershed divide between Mimico and Humber Rivers lies approximately 300 m to the east of the Study Area. As a result, work at the Park Lawn GO Station is not anticipated to impact this wetland.

4.5 Aquatic Environment

4.5.1 Aquatic 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.

4.5.2 Fish Communities

A desktop review was completed in April 2020 in order to document the fish species identified within Mimico Creek that have the potential to be effected by the Project. Fish documented in the MNRF Fish-Online tool, NHIC and TRCA watershed assessments are listed below in Table 4-1.

Table 4-1: Fish species recorded within Mimico Creek

Common Name	Scientific Name	Preferred Habitat (Ontario, 2017; DFO 2018).
Black Crappie	<i>Pomoxis nigromaculatus</i>	Warm, clear vegetated lakes, ponds and rivers with little current. Prefers open areas adjacent to cover with access to deeper water in winter and summer
Blacknose Dace	<i>Rhinichthys atratulus</i>	Small, cool, clear, fast streams with rocky or gravelly substrate
Bluegill	<i>Lepomis macrochirus</i>	Warm lakes and ponds, slow moving vegetated streams. Prefers clear waters with some weed growth
Brook Stickleback	<i>Culaea inconstans</i>	Quiet, vegetated waters of small rivers, ponds or lakes over sand, muck or mud
Brown Bullhead	<i>Ameiurus nebulosus</i>	Found in a wide variety of habitats. Prefers slow moving, warmer water with abundant weed growth
Brown Trout	<i>Salmo trutta</i>	Found in a wide variety of habitats such as quiet, calm waters, pools or ponds fed by streams and turbulent, fast flowing streams
Common Carp	<i>Cyprinus carpio</i>	Warm, shallow, weedy lakes and rivers with water from clear to murky. Often found in urban areas and habitats unsuitable for other fish
Common Shiner	<i>Luxilus cornutus</i>	Small- to medium-sized weedless streams with gravel to rubble bottom, and nearshore of lakes
Creek Chub	<i>Semotilus atromaculatus</i>	Small, clear, streams; nearshore of small lakes
Emerald Shiner	<i>Notropis atherinoides</i>	Common in large rivers and lakes

Common Name	Scientific Name	Preferred Habitat (Ontario, 2017; DFO 2018).
Fathead Minnow	<i>Pimephales promelas</i>	Found in a wide range of habitats, but generally prefers still waters
Freshwater Drum	<i>Aplodinotus grunniens</i>	Large shallow water bodies with mud or sandy bottoms
Jonny Darter	<i>Etheostoma nigrum</i>	Found in a wide variety of habitats; most common in quieter waters over silt, sand or gravel; also found in weedy areas and grave riffles
Lake Chub	<i>Couesius plumbeus</i>	Gravel-bottomed pools and runs of streams, lakes
Largemouth Bass	<i>Micropterus salmoides</i>	Found in a wide variety of habitats such as warm, weedy water and clear rocky, lakes. Also known to inhabit slow-moving rivers and shallow muddy ponds.
Longnose Dace	<i>Rhinichthys cataractae</i>	Clean, swift streams with gravel beds, occasionally taken in inshore waters of lakes
Pumpkinseed	<i>Lepomis gibbosus</i>	Cool to warm waters of lakes and slow moving streams with aquatic vegetation
Rainbow Smelt	<i>Osmerus mordax</i>	Found within Lake Ontario. Spawning occurs in large schools in streams and along shorelines
Rainbow Trout	<i>Oncorhynchus mykiss</i>	Can live in a range of conditions in rivers, ponds and lakes. Known to inhabit cold streams and some warm streams and prefers swift, turbulent water.
Rock Bass	<i>Ambloplites rupestris</i>	Cool lakes and slow-moving streams with rock bottoms. Often found swimming with other sunfish and bass.
Round Goby	<i>Neogobius melanostomus</i>	Found in rocky or gravelly habitat; generally inhabit the nearshore area of lakes; also found in tributaries
Smallmouth Bass	<i>Micropterus dolomieu</i>	Clear, rocky lakes and rivers. Often found on shoreline rocks and points, offshore shoals, and in deep water.
Spotfin Shiner	<i>Cyprinella spiloptera</i>	Medium- to large-sized unvegetated streams over sand, gravel, or rubble, often in somewhat turbid waters
Spottail Shiner	<i>Notropis hudsonius</i>	Large streams and lakes, usually over sandy or rocky shallows with sparse vegetation
White Bass	<i>Morone chrysops</i>	Clear water near rock, reefs and sand bars
White Perch	<i>Morone americana</i>	Found within Lake Ontario
White Sucker	<i>Catostomus commersonii</i>	Warm, shallow lakes and tributary rivers across Ontario
Yellow Perch	<i>Perca flavescens</i>	Can tolerate a variety of temperatures and habitats. Prefers areas of open water and moderate vegetation.

4.5.3 Aquatic Habitat Summary

Fish species known to inhabit this reach of Mimico Creek include species known to inhabit both lakes and creeks. Many of the species that prefer lake habitats (i.e., Black Crappie, Freshwater Drum, White Bass) are likely moving between Lake Ontario and habitat in Mimico Creek near

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

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

4.6 Terrestrial Environment

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.

4.6.1 Flora

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 4-2.

Table 4-2: Locally and Regionally Significant Plant Species

Common Name	Accepted Name	TRCA Rank ¹	City of Toronto Rank ²
Black Willow	<i>Salix nigra</i>	L3	R
White Spruce	<i>Picea glauca</i>	L3	X+
Black Ash	<i>Fraxinus nigra</i>	L4	R ²
Black-Eyed Susan	<i>Rudbeckia hirta</i>	L4	X
Freeman's Maple	<i>Acer x freemanii</i>	L4	X
Pussy Willow	<i>Salix discolor</i>	L4	X
Red Maple	<i>Acer rubrum</i>	L4	X
Red Oak	<i>Quercus rubra</i>	L4	X
Softstem Bulrush	<i>Schoenoplectus tabernaemontani</i>	L4	X
White Birch	<i>Betula papyrifera</i>	L4	X
White Pine	<i>Pinus strobus</i>	L4	X

Common Name	Accepted Name	TRCA Rank ¹	City of Toronto Rank ²
Wild Columbine	<i>Aquilegia canadensis</i>	L4	X

¹TRCA 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).

²City 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.

4.6.2 Vegetation Communities

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 Study Area is located in Toronto Ontario, in the vicinity of Park Lawn Road and bordered to the north by the Gardiner Expressway and to the south by Lake Shore Boulevard West. The Metrolinx rail corridor bisects the property from east to west. Mimico Creek is found in the western portion of the Study Area in a generally north to south orientation. This area has gone through many anthropogenic changes with the initial deciduous forest being cleared more than 150 years ago for agriculture and then later developed into residential and commercial properties, roads and a rail corridor. The entire Study Area has been disturbed through clearing, revegetation, soil removal and infilling. Natural areas are predominantly cultural with many naturalized and non-native species. The most intact system is the forest within the floodplain and ravines of Mimico Creek, the creek itself, being highly disturbed, channelized and with little vegetation.

Several of the early successional ecosites in the Study Area originally mapped by TRCA such as cultural meadows, have succeeded into thickets or young forests. During field reconnaissance, Hatch identified and classified 23 distinct ecological and anthropogenic units within the Study Area that are described in the following sections. Note: a unit represents an ecological or anthropogenic polygon in its entirety or that part of the polygon which is located within the Study Area. For each unit its location within the Study Area, size, and general description with respect to vegetation and soils are provided in Appendix H. A species list for each unit is found in Appendix C.

The updated ELC classification identifies nine terrestrial ecosites, one wetland ecosite and one aquatic ecosite within 23 individual polygons within Study Area (Figure 4-1). Photos of the representative areas can be found in Appendix B.

1. **Turbid Open Aquatic (OAO1-T) – Unit 1:** Unit 1 is found within the western portion of the Study Area and represents the entirety of Mimico Creek. The creek flows north to south, eventually discharging into Lake Ontario several hundred metres south of the Study Area. Much of the creek has been channelized with the banks stabilized using concrete and rip rap. Other sections of the stream are more naturalized and provide wildlife habitat. Riparian areas are highly disturbed with weedy vegetation but also include some native flora. Within the Study Area there is limited aquatic macrophytes within the creek channel. Shoreline vegetation is listed in the descriptions of the adjacent units. Informal trails and debris are common along both sides of the creek.
2. **Exotic Forb Meadow (CUM1-c) – Unit 13:** Unit 13 is found at the southwest corner of the Study Area. The unit is a brownfield site enclosed by page-wire fencing. It has been planted with non-native grasses and non-native herbaceous species are abundant. Shrubs and small trees are beginning to appear along the edges and sporadically throughout the unit.
3. **Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FOD7-a) – Unit 2, 11, 23:** Unit 2 is situated immediately south of the Gardiner Expressway off-ramp and west of Park Lawn Road. This unit has transitioned from a cultural meadow into a young forested ecosite with Manitoba maple as a dominant tree with black locust and green ash as the subdominant species. The understory is dense and composed of the same species as the canopy. Most canopy trees are < 20 m in height with a Diameter at Breast Height (DBH) in the 10 to 24 cm category. Black Locust (*Robinia pseudoacacia*) is common throughout the canopy and also dominates the understory. The ground cover is continuous and dominated by non-native invasive species such as Garlic Mustard (*Alliaria petiolate*). The site is highly disturbed with informal trails, garbage and evidence of past inhabitation composed of crude shelters and furniture.

Unit 11 is situated immediately south of the rail corridor and north of the brownfield site. The unit is dominated by mature Willow (*Salix spp.*) and Manitoba Maple (*Acer negundo*) with scattered Green Ash (*Fraxinus pennsylvanica*) and Black Walnut (*Juglans nigra*). Trees are < 20 m with average DBH in the 10- 24 cm category. The understory is dense and composed of the same species as the canopy. The ground cover is continuous and dominated by non-native invasive species such as Garlic Mustard. The site is highly disturbed with informal trails, garbage and evidence of past inhabitation composed of crude shelters and furniture. Soils are a mixture of native alluvial soils and fill.

Unit 23 borders the east side of Mimico Creek south of the rail corridor. A fresh-moist Manitoba maple lowland deciduous forest community borders the east side of Mimico Creek. The community is divided into separate units within the Study Area as it is bisected by the rail corridor. The forest is located within the floodplain of Mimico Creek on fine alluvial soils, with the more elevated north and east perimeter of the unit composed of fill. Species composition of canopy trees changes towards a drier community with increased elevation, especially to the east, although the area is too small to be separated into a new ecosite. The forest is young, with most trees under 24 cm DBH. The unit is highly disturbed with invasive ground cover (Garlic Mustard), informal trails and garbage.

4. **Broad-leaved Cattail Mineral Shallow Marsh (MAS2-1A) – Unit 3:** is situated east of Mimico Creek and north of the rail corridor as an inclusion within the larger Fresh Moist Manitoba Maple Lowland Deciduous Forest. The ecosite has formed and is maintained by water that flows from an underground drainage culvert. The culvert mouth extends into the Manitoba Maple woodland and the drainage water has created a small (5 m²) pool. Surrounding the pool is a small marsh dominated by hybrid cattail (*Typha glauca*) with few other wetland species, such as Jewelweed (*Impatiens capensis*) and red-osier dogwood (*Cornus sericea*). *Phalaris*, which is often associated with wetlands but not wetland dependent, is present as well. Soils are mineral with a shallow (~10 cm) organic layer. Note: the most accurate ELC code is MAS2-1A, even though the dominant vegetation is *Typha glauca* due to the absence of an ecosite characterized by the dominance of hybrid cattails. The polygon is well below the normal mappable size, however has been included as previously done by TRCA. Due to its small size it is not expected to provide any significant wildlife habitat but may provide limited amphibian, bird, reptile or aquatic mammal habitat.
5. **Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3) - Unit 4, 8, 9:** Unit 4 is situated along the west side of Mimico Creek north of the rail corridor. This ecosite continues south of the rail corridor and is identified as Units 8 and 9. This willow-dominated riparian forest occurs in the western floodplain of Mimico Creek from the northern to southern extent of the Study Area. The forest has a closed canopy of Crack Willow (*Salix fragilis*), Manitoba Maple (*Acer negundo*) and Green Ash (*Fraxinus pennsylvanica*), typically under 20 m in height and DBH 10-24 cm. The understory is dense and composed of the same species as the canopy. Native lowland forest species are for the most part lacking although Basswood (*Tilia Americana*) is a notable exception. The ground cover, like most ecosites in the Study Area is dominated by non-native weedy species. The unit is highly disturbed with trails and garbage.

Unit 8 is situated south of the rail corridor along the west side of Mimico Creek. This willow-dominated riparian forest occurs in the western floodplain of Mimico Creek from the northern to southern extent of the Study Area. The forest has a closed canopy of Crack Willow (*Salix fragilis*), Manitoba Maple (*Acer negundo*) and Norway Maple (*Acer platanoides*), typically under 20 m in height and DBH 10-24 cm. The understory is dense and composed of the same species as the canopy. While the unit is dominated by non-native species, Basswood (*Tilia Americana*) is a notable exception. The ground cover, like most ecosites in the Study Area is dominated by non-native invasive species. The unit is highly disturbed with informal trails and garbage.

Unit 9 is situated along the east side of Mimico Creek at the southern end of the Study Area. It is bordered to the west by the creek and to the east by residential development. This is a dominant ecosite within the riparian zone of Mimico Creek. It differs from other riparian forested ecosites by the dominance of mature willow with a complement of other large native trees including Basswood (*Tilia Americana*) and Eastern Cottonwood (*Populus deltoides*). The mature willows appear to be mostly *Salix fragilis* although *Salix nigra* and

hybrids are present as well. Most trees are in the 10 – 24 cm DBH range although larger specimens are found throughout. The younger woody and herbaceous communities are dominated by non-native vegetation.

6. **Native Deciduous Successional Woodland (CUW1-A3) – Unit 5, 16:** Unit 5 runs adjacent to and north of the rail corridor west of Park Lawn Road. The ecosite is positioned at the top of the ravine adjacent to the rail corridor and is drier than the adjacent woodland. Soils are sandy and anthropogenic. The ecosite is dominated by scattered or patches of trees, particularly black locust (*Robinia pseudoacacia*), Eastern Cottonwood (*Populus deltoides*), Manitoba Maple (*Acer negundo*) and Norway maple (*Acer platanoides*). Trees are typically < 20 m and in the 10 -24 cm DBH range. Shrubs are scattered and the ground cover is predominantly grass with goldenrod (*Solidago spp.*) flourishing in the more open areas.

Unit 16 is situated north of the rail corridor at the western end of the Study Area. This cultural woodland is the western, upland component of the forested ecosites west of the creek and north of and adjacent to the rail corridor. The ecosite is dominated by scattered or patches of trees, particularly black locust (*Robinia pseudoacacia*), eastern cottonwood (*Populus deltoides*) and Norway maple (*Acer platanoides*). Trees are typically < 20 m and in the 10 -24 cm DBH range. Shrubs, such as staghorn sumac (*Rhus typhina*) and Tartarian honeysuckle (*Lonicera tatarica*), are common. The groundcover is predominantly smooth brome (*Bromus inermis*) with native goldenrods (*Solidago spp.*) and non-native invasive species such as dog strangling vine (*Vincetoxicum rossicum*).

7. **Transportation Corridor (CV1-1) – Unit 6, 7:** Unit 6 represents the Gardiner Expressway, Park Lawn Road and the rail corridor. The unit bisects the Study Area from north to south and east to west. Vegetation along the edges of this unit are captured in the descriptions of adjacent units.

Unit 7 is situated in the northeast corner of the Study Area. The unit represents a parking lot associated with the Ontario Food Terminal.

8. **Exotic Cultural Thicket (CUT1-c) – Unit 17, 18, 19:** Unit 18 is a perched triangular thicket found immediately east of Park Lawn Road, south of the Gardiner Expressway, and north of the rail corridor. The unit is perched with steep inclines above the road and rail corridor surrounding its three sides. The site is mesic-dry and dominated by native and non-native old-field successional species, such as tall goldenrod (*Solidago gigantea*) and cool-season grasses. The site is predominantly open with clusters of shrub thickets, particularly Russian olive (*Elaeagnus angustifolia*) and sweet brier (*Rosa rubiginosa*).

Unit 17 is located west of Park Lawn Road and between the Gardiner Expressway and the expressway access road. This anthropogenic site has transformed from a cultural meadow into a cultural thicket. The site is dry with a substrate of non-native soils of sand and cobble. The site is a mixture of open areas and thickets of shrubs and small trees. The dominant trees are small specimens of Russian Olive (*Elaeagnus angustifolia*) and Manitoba maple (*Acer negundo*). Shrubs include Staghorn Sumac (*Rhus typhina*), Eastern Red Cedar

(*Juniperus virginiana*) and smaller specimens of tree species. The ground cover is weedy, with mostly non-native grasses, such as smooth brome (*Bromus inermis*) and noxious weeds.

Unit 19 is located within the hydro corridor immediately north of the Gardiner Expressway. This unit represents the maintained hydro corridor north of the Gardiner Expressway. The site has transformed from a cultural meadow to a thicket of mostly non-native shrubs such as common Buckthorn (*Rhamnus spp.*), Tartarian Honeysuckle (*Lonicera tatarica*) and small Manitoba Maples (*Acer negundo*). Riverbank grape (*Vitis riparia*) covers much of the woody plants and fences. The ground cover is grasses, e.g. brome (*Bromus spp.*) with common roadside species.

9. **Fresh-Moist Oak-Lowland Maple Deciduous Forest (FOD9-2) – Unit 12:** Unit 12 is situated on the east side of Mimico Creek at the top of the ravine and west of the informal walking trail. This unit represents an older, naturalized forest community found on the side of the ravine. Below is the younger Fresh Moist Willow Lowland Deciduous Forest community and above is a park-like area west of the condominium buildings on Park Lawn Road. The canopy is dominated by mature Red Oak (*Quercus rubra*) (DBH 25 – 50 cm) with Black Walnut (*Juglans nigra*) and Crack Willow (*Salix fragilis*) subdominant. There is limited regeneration of canopy species with the understory dominated by Staghorn Sumac (*Rhus typhina*) and Choke Cherry (*Prunus virginiana*) with Green Ash (*Fraxinus pennsylvanica*) and *Salix* spp. also present. Herbaceous species, mostly non-native and invasive, cover the forest floor.

10. **Exotic Cool Season Grass Old Field Meadow (CUM1-b) – Unit 10, 20, 21:** Unit 10 is located west of Park Lawn Road along the southern perimeter of the Study Area. This unit is a vacant lot on Park Lawn Road that extends westward towards Mimico Creek. The lot was previously classified by TRCA as an anthropogenic sand barrens but has now revegetated enough to be considered a cultural meadow, with species such as chicory (*Cichorium intybus*), garlic mustard (*Alliaria petiolate*), brome (*Bromus spp.*), sweet-white clover (*Melilotus albus*), St. John's wort (*Hypericum perforatum*), wild carrot (*Daucus carota*), coltsfoot (*Tussilago farfara*) and birds-foot trefoil (*Lotus corniculatus*). A few saplings of eastern cottonwood (*Populus deltoides*) can also be found. The substrate is composed of fill, including asphalt, medium sands, coarse stone and cobble.

Unit 20 is located south of the rail corridor and east of Park Lawn Road and stretches to the eastern perimeter of the Study Area. This Unit represents the northern portion of the historic lawn around the perimeter of the Mr. Christie factory. The current “lawn” is composed of a commercial grass seed mix that is periodically maintained. Many non-native herbaceous species are also found within this unit. Native and exotic deciduous species occur along the periphery and within several small fenced areas that house electrical works, signage etc.

Unit 21 is situated in the southeast portion of the Study Area with the western portion abutting Park Lawn Road. The unit is found within the area of the old lawn in a low-lying

area with standing water in the spring. It has mostly been filled with rubble but grasses persist and the wetter and non-filled areas contain a few wetland species such as hybrid cattail (*Typha x glauca*) and soft stem bulrush (*Schoenoplectus tabernaemontani*).

11. **Anthropogenic Sand / Gravel Barren (SB02) – Unit 22:** Unit 22 is located along the southeast portion of the Study Area. This area is an active construction site with fill being deposited throughout the spring and summer. Fill is composed of sand, gravel, cobble and crushed concrete. Vegetation cover is <20 percent and composed of species such as chicory (*Cichorium intybus*) and phragmites (*Phragmites australis*).
12. **High Density Residential (CVR-2) – Unit 14, 15:** Unit 14 is situated west of Park Lawn Road and south of the rail corridor. Unit 15 is situated in the northwest corner of the Study Area. These units represent a mix of commercial and high-rise residential buildings.



4.7 Wildlife

The Study Area provides habitat for species tolerant of urbanized settings. Results of the background data review are discussed in Section 4.7.1, 4.7.2, 4.7.3 and 4.7.4 of this Report. Wildlife SAR are discussed in Section 4.9 of this Report.

4.7.1 Mammals

Based upon available habitat, the general area likely supports a range of mammals often found in similar habitats, including: Coyote (*Canis latrans*), Groundhog (*Marmota monax*), Beaver (*Castor canadensis*), Northern Raccoon (*Procyon lotor*), Eastern Chipmunk (*Tamias striatus*), Eastern Cottontail (*Sylvilagus floridanus*), Eastern Grey Squirrel (*Sciurus carolinensis*), Muskrat (*Ondatra zibethicus*), Red Squirrel (*Tamiasciurus hudsonicus*), Striped Skunk (*Mephitis mephitis*), Red Fox (*Vulpes vulpes*), and a number of small mammals that often go undetected (e.g., bats, minks, shrews, voles, mice) (Dobbyn, 1994). Species of Bats (SAR) are also potentially present and are discussed further in Section 4.9.

Most species listed above are habitat generalists that utilize a variety of urbanized and naturalized habitats. No federally and/or provincially significant mammals are known to inhabit the area.

The April 17, 2020 preliminary site investigation revealed the presence of a coyote den within ELC Unit 4 (Fresh-moist Willow Lowland Deciduous Forest). Additionally, during the May 28, 2020 site investigation, five coyote pups were observed within the fenced area of Unit 20 living within a drainage culvert. On the July 9, 2020 site investigation, only one of the five coyote pups appeared to be utilizing Unit 20.

4.7.2 Birds

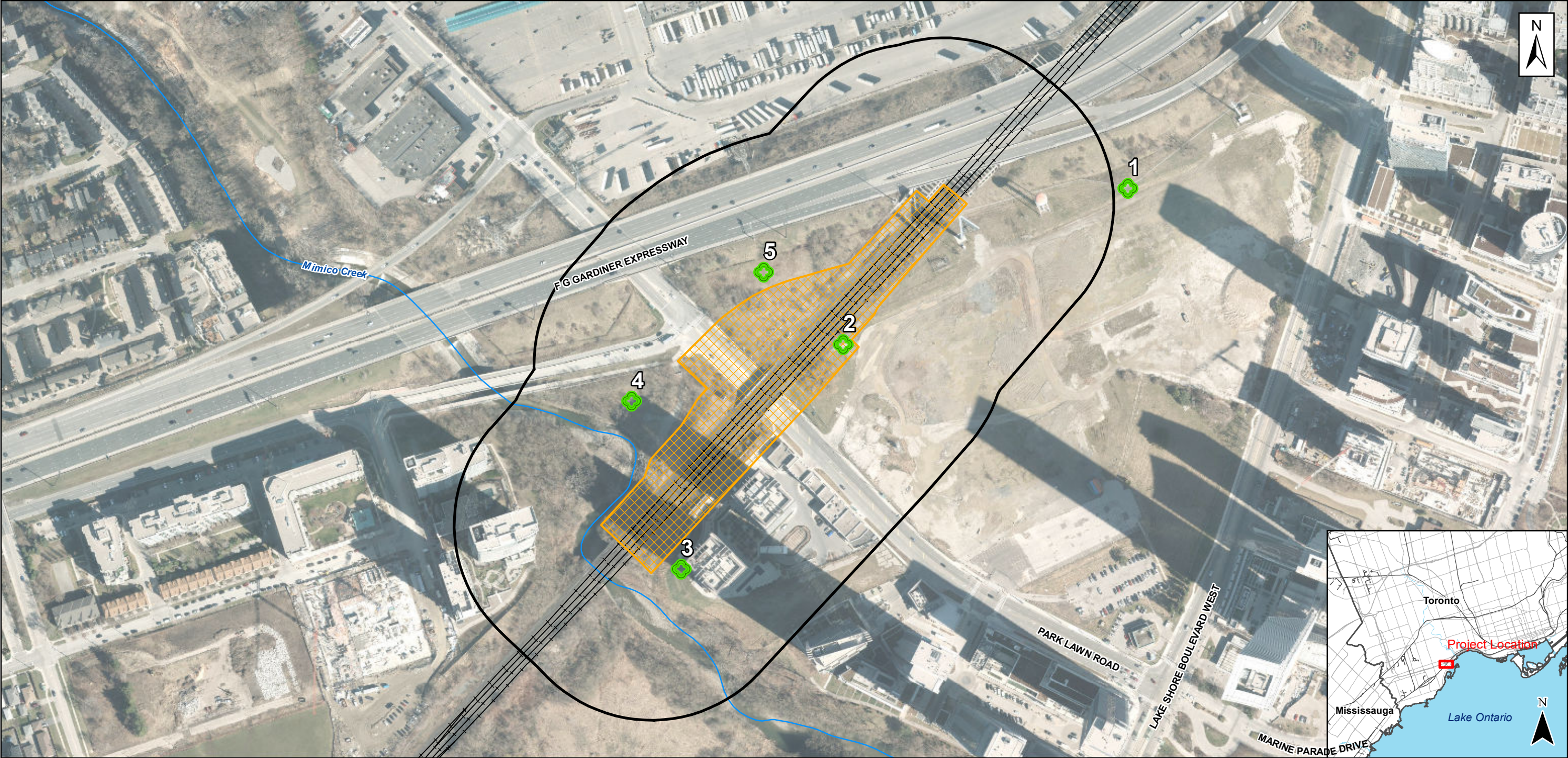
A total of 111 bird species were recorded within the 10km x 10km OBBA square 17PJ23. A full list of the recorded species is found in Appendix A. Of the 111 species, 10 records identified the presence of SAR within the area which are described further in Section 4.9.1.

Small woodlots are present on both sides of the rail corridor within the Study Area and have the potential to provide habitat for various woodland bird species. Harbourview Park, located within the southwest corner of the Study Area, is approximately one hectare in size and appears to contain manicured grass lined by trees and woodlots. This area has the potential to provide habitat for a number of woodland birds within the Study Area. A number of structures (i.e., condominiums, bridges) are present within the Study Area and also have the potential to host birds species tolerant of urbanized settings such as Barn Swallows, Cliff Swallows and Chimney Swifts.





Numerous nesting killdeer were observed during site investigations within the footprint of the former Mr. Christie Cookie Factory (Unit 22). Subsequent investigations noted the presence of killdeer fledglings throughout the area. A full list of confirmed species within the Study Area based on incidental observations during the April 17, 2020 field investigations, as well as point counts collected during the OBBA surveys in Summer 2020 is provided in Table 4-3. Survey station locations are shown in Figure 4-2. Detailed results of the OBBA surveys are provided in Appendix G.


Table 4-3: Confirmed Species within the Study Area

Common Name	Scientific Name
American Crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Spinus tristis</i>
American Robin	<i>Turdus migratorius</i>
Baltimore Oriole	<i>Icterus galbula</i>
Bank Swallow	<i>Riparia riparia</i>
Barn Swallow	<i>Hirundo rustica</i>
Belted Kingfisher	<i>Megaceryle alcyon</i>
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>
Blue Jay	<i>Cyanocitta cristata</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Brown Creeper	<i>Certhia americana</i>
Common Grackle	<i>Quiscalus quiscula</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Eastern Pheobe	<i>Sayornis phoebe</i>
European Starling	<i>Sturnus vulgaris</i>
Golden Crowned Kinglet	<i>Regulus satrapa</i>
Great Blue Heron	<i>Ardea herodias</i>
Grey Catbird	<i>Dumetella carolinensis</i>
Hairy Woodpecker	<i>Leuconotopicus villosus</i>
House Finch	<i>Haemorhous mexicanus</i>
House Sparrow	<i>Passer domesticus</i>
Killdeer	<i>Charadrius vociferus</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning Dove	<i>Zenaida macroura</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
Northern Flicker	<i>Colaptes auratus</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Rock Pigeon	<i>Columba livia</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Song Sparrow	<i>Melospiza melodia</i>
Spotted Sandpiper	<i>Actitis macularius</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Warbling Vireo	<i>Vireo gilvus</i>
White-throated Sparrow	<i>Zonotrichia albicollis</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Yellow Warbler	<i>Setophaga petechia</i>



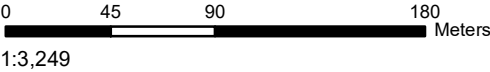
LEGEND

-  Proposed Project Footprint (approximate)
-  Study Area - 120 metres
-  Railway
-  Permanent Watercourse

 Breeding Bird Stations

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.



Project:		Park Lawn GO Station	
Figure Title:		Natural Environment Report - Breeding Bird Survey Stations	
Prepared By:			Date: December 17, 2021
Version: PL.NE.100-1	Review:		Figure: 4-2

4.7.3 Herpetofauna

A search of the 'Herps of Ontario' database on iNaturalist indicated historical records of 16 herpetofauna species within the 10 km x 10 km square 17PJ23. Herpetofauna SAR recorded within the Study Area are listed in Appendix E of this Report. A desktop review of the Study Area indicates that the general area contains foraging habitat for, and may support, amphibian and reptile species. In particular, the cattail mineral marsh observed during the April 17, 2020 field investigation has limited potential to contain herpetofauna habitat (further discussed in Section 4.8).

No herpetofauna species were recorded during field investigations in 2020. Given 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) as well as the poor quality habitat located in the creek and within the small wetland, limited species are expected to be utilizing the study area. No targeted surveys for herpetofauna are planned however any incidental observations will be recorded.

4.7.4 Butterflies

A total of 96 butterfly species were recorded within the OBA (Macnaughton, Layberry, Cavašin, Edwards, & Jones, 2020) within the 10km x 10km OBA square 17PJ23. A full list of the historically recorded species is found in Appendix A. Of the 96 species, three records identified the presence of SAR within the area which are described further in Section 4.9.4.

No targeted surveys for butterflies are planned however, various butterfly species were incidentally recorded throughout the Study Area, including Black Swallowtail, Eastern Swallowtail and Monarch. Species at Risk butterflies are discussed further in Section 4.9.4.

4.8 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 this Report. At this time no SWH has been identified within the Study Area, however, three Candidate SWHs require field surveys previously outlined in Section 3.3 to make a determination.

Of the identified ecosites within the Study Area, almost all corresponded with potential SWH designations to some degree as shown below in Table 4-4.

**Table 4-4: 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 during field investigations. One Special Concern species (Monarch) was recorded during field investigations.

4.9 Species at Risk

A review of the MNRF NHIC database provided nine (9) records of SAR wildlife within the one km square overlapping the Study Area. A search of the OBBA (Cadman, Sutherland, Beck, Lepage, & Couturier, 2007) and Ontario's Reptile and Amphibian Atlas (iNaturalist, 2020) indicated the potential for 11 birds, and six (6) 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 (4) are thought to have very low potential of occurring, while seven (7) have low or minimal potential and nine (9) 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-rank¹, ESA, Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and SARA status, are presented in Table 4-5. 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 in Table 4-5

¹ 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 4-5: Species at Risk with Low to High Potential to Use the Study Area

Common Name	Latin Name	S Rank	ESA	COSEWIC	SARA	Schedule	Preliminary Potential Presence Ranking	Rationale
Birds								
Bank Swallow	<i>Riparia riparia</i>	S4B	Threatened	Threatened	Threatened	1	Confirmed	Foraging was observed throughout the Study Area in suitable foraging habitat over fields and open aquatic features such as Mimico Creek; There is a low potential for potential for nesting habitat along creek and associated ravine within the study area, however candidate nesting habitat is present along the western bank of Mimico Creek immediately south of the study area.
Barn Swallow	<i>Hirundo rustica</i>	S4B	Threatened	Threatened	Threatened	1	Confirmed	Foraging was observed throughout the Study Area; potential for nesting habitat in nearby buildings and under train bridges, however no nests were observed. Nesting activity was not observed in suitable habitat found within creek.
Chimney Swift	<i>Chaetura pelagica</i>	S4B, S4N	Threatened	Threatened	Threatened	1	Low	Low potential for both foraging and nesting in the Study Area given the limited presence of suitable chimneys and the lack of individuals observed during field investigations.
Common Nighthawk	<i>Chordeiles minor</i>	S4B	Special Concern	Special Concern	Threatened	1	Moderate	Potential for foraging throughout Study Area. Suitable nesting habitat on flat roofed buildings in the vicinity of the project as well as the vacant land of the former Mr. Christie Cookie Factory.
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	Special Concern	Special Concern	Special Concern	1	Low	Potential for foraging and nesting within cultural woodland and forest communities, however no individuals were observed during field investigations.
Peregrine Falcon	<i>Falco peregrinus</i>	S3B	Special Concern	Special Concern	Special Concern	1	Low	Potential for foraging throughout Study Area. Some suitable nesting habitat on taller buildings in the vicinity of the project, however no individuals were observed during field investigations.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S4B	Special Concern	Endangered	Threatened	1	Low	Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	Special Concern	Threatened	Threatened	1	Low	Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.
Fish								
American Eel	<i>Anguilla rostrata</i>	S1	Endangered	Threatened	Threatened	No Schedule	High	Recovery Strategy indicates that it is likely to be present within tributaries of Lake Ontario.
Herpetofauna								
Blanding's Turtle	<i>Emydoidea blandingii</i>	S3	Threatened	Endangered	Threatened	1	Low	Slight possibility to occur within Mimico Creek/cattail marsh within the Study Area, however no individuals were observed during field investigations.
Milksnake	<i>Lampropeltis triangulum</i>	S4	Special Concern	Special Concern	Special Concern	1	Low	Suitable habitat may occur throughout the Study Area. Human-made structures, and railway structures may be suitable hibernacula, however no individuals were observed during field investigations.
Northern Map Turtle	<i>Graptemys geographica</i>	S3	Special Concern	Special Concern	Special Concern	1	Low	Slight possibility to occur within Mimico Creek within the Study Area, however no individuals were observed during field investigations.
Snapping Turtle	<i>Chelydra serpentina</i>	S3	Special Concern	Special Concern	Special Concern	1	Moderate	No individuals were observed during field investigations, however there is a moderate possibility to forage and travel within Mimico Creek.

Common Name	Latin Name	S Rank	ESA	COSEWIC	SARA	Schedule	Preliminary Potential Presence Ranking	Rationale
Insects								
Monarch	<i>Danus plexippus</i>	SN2, S4B	Special Concern	Endangered	Special Concern	1	Confirmed	Individuals observed foraging on sparse stems of Milkweed within open areas and meadow communities within the study area.
Mottled Duskywing	<i>Erynnis martialis</i>	S2	Endangered	Endangered	No Status	No Schedule	Low	Slight possibility to occur in dry areas within the Study Area such as empty lots or forest openings, however no plants species associated with Mottled Duskywing habitat or individuals of the species were observed.
Mammals								
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	Endangered	Not Assessed	No Status	No Schedule	Moderate	Potential to occur within forest communities and candidate snag trees.
Little Brown Myotis	<i>Myotis lucifugus</i>	S4	Endangered	Endangered	Endangered	1	Moderate	Potential to occur within forest communities and candidate snag trees.
Northern Myotis	<i>Myotis septentrionalis</i>	S3	Endangered	Endangered	Endangered	1	Moderate	Potential to occur within forest communities and candidate snag trees.
Tri-coloured Bat	<i>Perimyotis subflavus</i>	S3?	Endangered	Endangered	Endangered	1	Moderate	Potential to occur within forest communities and candidate snag trees.

4.9.1 Birds

Bank Swallows were observed during field investigations flying over Mimico Creek. A small section of the western creek bank immediately south of the Study Area was identified as candidate habitat due to the steep, highly eroded, sandy banks and presence of nesting holes (Figure 4-3). Further studies confirmed that the nesting holes were being utilized by Kingfishers in the area. Despite no observations of Bank Swallows utilizing the banks, the area is still considered candidate habitat due to the lack of suitable habitat elsewhere within the area. This species and its habitat are protected by the ESA, SARA and is also protected under the MBCA.

Suitable nesting habitat for Barn Swallow may be present on human-made structures throughout the Study Area (i.e., train bridges, highway bridges). Barn Swallows were observed flying over Mimico Creek during field investigations, however field investigations indicate that the train/highway bridges within the Study Area are not being utilized as nesting habitat. The Lake Shore Boulevard bridge over Mimico Creek (approximately 300 m south of the Study Area), appears to be the preferred nesting habitat within the area as over 10 individuals were observed flying in and out of the overpass. This species and its habitat are protected by the ESA, SARA and is also protected under the MBCA.

There is low potential for Chimney Swift to both forage and nest in the Study Area given the limited presence of suitable chimneys and other suitable structures. Chimney Swifts were not observed during the 2020 field investigations and OBBA Point Count Surveys. This species and its habitat are protected by the ESA, SARA and is also protected under the MBCA.

There is moderate potential for Common Nighthawk to forage and nest within the Study Area. No Common Nighthawk have been observed during field investigations. This species' habitat is not protected by the ESA, however Common Nighthawk is protected under the MBCA.

There is low potential for Eastern Wood-Pewee to be found in the treed areas such as Cultural Woodlands or Forest vegetation communities within the Study Area. No Eastern Wood-Pewee have been observed during field investigations. This species and its habitat are not protected by the ESA. However the species is protected under the MBCA.

Despite the potential for Peregrine Falcon to forage throughout the Study Area and nest given the presence of a number of tall buildings, no Peregrine Falcons have been observed during field investigations. While suitable foraging habitat exists within the Study Area for this species, its habitat is not protected under the ESA. The Peregrine Falcon is protected under the FWCA, 1997.

There is low potential for Red-headed Woodpecker to be in the Study Area, however Cultural Woodland and Forest ecosites may provide potential habitat for the species. No Red-headed Woodpeckers have been observed during field investigations. While habitat may exist in the Study Area for this species, its habitat is not protected by the ESA. The Red-headed Woodpecker is protected under the MBCA.

Wood Thrush have a low potential to utilize treed areas such as Cultural Woodlands or Forest vegetation communities in the Study Area, however no Wood Thrush have been observed

during field investigations. Further studies are required to determine the presence or absence. This species and its habitat is not protected by the ESA. The species is protected under the MBCA.

4.9.2 Aquatic Species

As a tributary of Lake Ontario, Mimico Creek is considered to be migratory habitat for American Eel in the American Eel Recovery Strategy. All freshwater that is accessible from the Atlantic Ocean has the potential to contain American Eel; all tributaries of Lake Ontario should be considered migratory habitat for the species (Ministry of Natural Resources, 2013). This species and its habitat are protected by the ESA and the *Fisheries Act*.

4.9.3 Herpetofauna

Blanding's Turtle have a low potential to be found within Mimico Creek within the Study Area and the cattail marsh within the Study Area. There is a higher potential for the species to be found within the mouth of Mimico Creek in the higher quality wetlands located approximately 300m south of the Study Area. No Blanding's Turtles have been observed during field investigations. This species and its habitat are protected by the ESA.

There is low potential for Eastern Milksnake to be present within the Study Area. Human-made structures, and railway structures may provide suitable hibernacula. No Milk Snakes have been observed during field investigations. This species and its habitat are not protected by the ESA.

There is moderate potential for Northern Map Turtle to forage or bask within the Study Area. The moderate designation is likely conservative and it is assigned as a result of its presence confirmed within the same NHIC square. It is noted the NHIC square extends to the Lake Ontario shoreline and this is the likely location of the occurrence as higher quality habitat exists in that area. No Northern Map Turtles have been observed during field investigations. This species and its habitat are not protected by the ESA.

Snapping Turtles are known to inhabit a wide variety of watercourses and as a result, there is a moderate potential for foraging and basking within the Study Area. No Snapping Turtles have been observed during field investigations. This species and its habitat are not protected by the ESA.

4.9.4 Insects

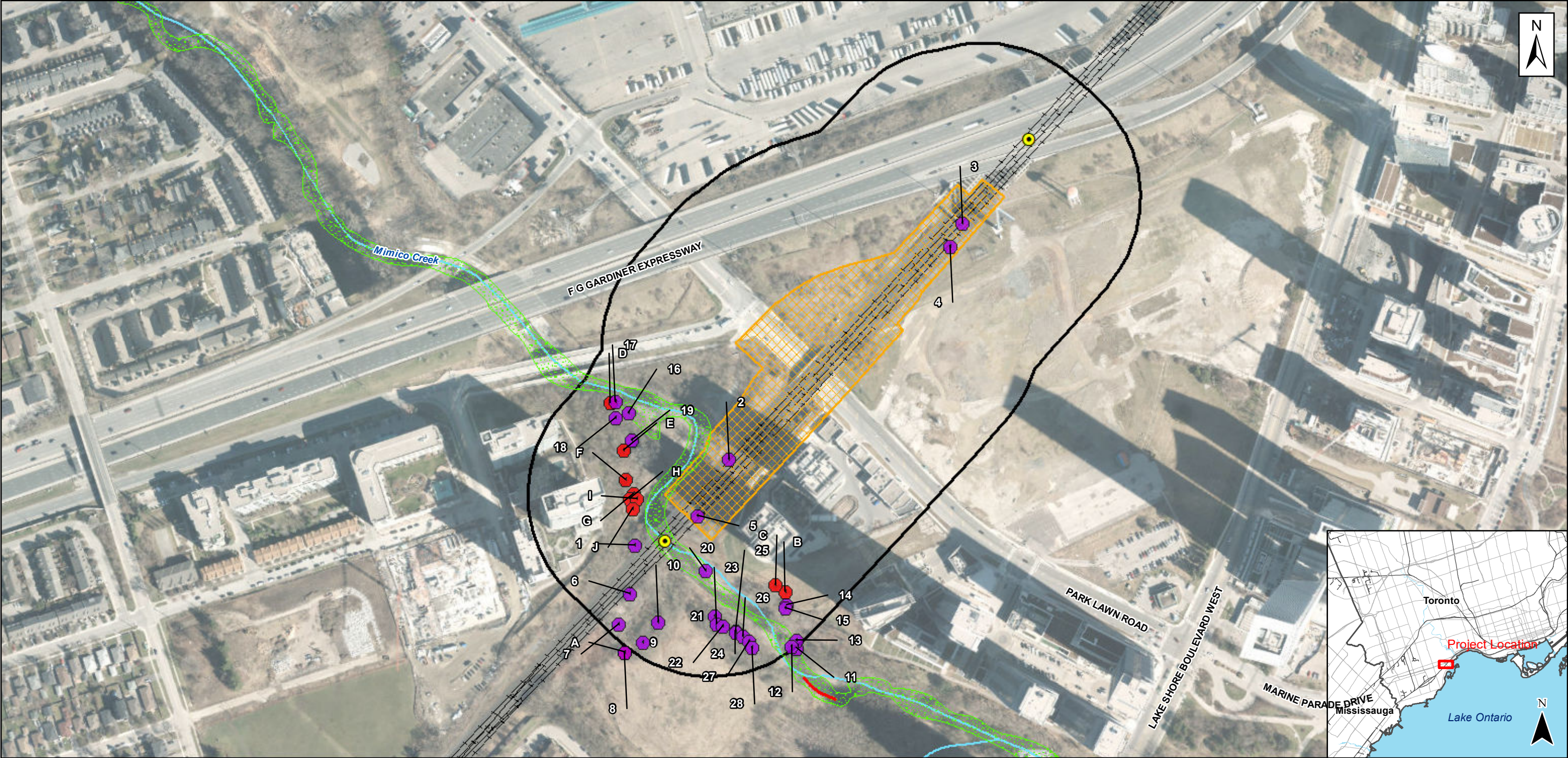
There is moderate potential for Monarch Butterfly forage and breed within Cultural Meadows of the Study Area. Field investigations conducted to date have recorded scattered individuals of Milkweed throughout the Study Area. Monarch butterflies rely solely on Milkweed for breeding and as a general food source for caterpillars. Several Monarch's have been observed foraging within the Study Area. This species and its habitat are not protected by the ESA.

There is a low potential for Mottled Duskywing to forage within the Study Area. The open areas with sparse vegetation (i.e., vacant lots, forest openings) may provide suitable breeding habitat. The species only deposits their eggs on two plants within the area: New Jersey Tea and Prairie Root. No New Jersey Tea or Prairie Root have been observed during field investigations conducted to date. This species and its habitat are protected by the ESA.

4.9.5 Mammals

There is a moderate potential for SAR bats to utilize the Study Area. A site investigation on April 29, 2020 recorded trees within the study area that meet the criteria to be considered potential bat snags. A total of 28 trees met the criteria for Northern Myotis and Little Brown Myotis snags, and a total of 10 trees met the criteria for Tri-Colored Bat snags (Figure 4-3). A majority of the identified trees fall outside of the Project footprint within the woodlands surrounding Mimico Creek. Four of the candidate snags are located inside the Project footprint and are located within the Lakeshore West Rail Corridor. Photos and detailed information regarding each potential snag can be found in Appendix F.

In addition to the field investigations described above, data from two acoustic monitoring stations surrounding Mimico Creek was obtained from a study of the Lakeshore West Rail Corridor in 2020 (Henkelman, 2020). Results from these stations indicate that the area is considered to have “Low Bat Activity” with only an average of 3-4 calls a day at each station. The manual identification tool within the Kaleidoscope™ software identified passes from Hoary Bat, Silver-haired Bat, Big Brown Bat and were confirmed by a biologist. One pass from Northern Myotis was auto-identified by the software program, however was considered poor quality with noise levels less than 35kHz. The low P-value of 0.02 associated with this call also indicates a high degree of uncertainty. The recording was manually reviewed by a qualified biologist and determined to not be a Northern Myotis call or any other SAR.



LEGEND <div> Proposed Project Footprint (approximate) </div> <div> Study Area - 120 metres </div> <div> Railway </div> <div> Permanent Watercourse </div> <div> Candidate Little Brown Northern Myotis Bat Snag </div> <div> Candidate Tricolored Bat Snag </div> <div> Candidate Barn Swallow Habitat </div> <div> Candidate Bank Swallow Habitat </div> <div> Candidate American Eel Habitat </div>		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.		Project: Park Lawn GO Station	
		Figure Title: Natural Environment Report- Candidate Species at Risk Habitat		Prepared By:	
		Version: PL.NE.100-1		Date: December 17, 2021	
		Review:		Figure: 4-3	

4.10 Significant Natural Heritage Features

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

- 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 masl, whereas the top of the ravine is approximately 89 masl, representing a 13 m change in elevation.

5. Effects Assessment of the Preferred Design

An effects assessment was conducted to identify any potential effects from the project (construction, operation and maintenance) on the natural environment. For any potential impacts that are identified in the following sections, mitigation measures to avoid or reduce negative effects have been developed. In addition, where appropriate, construction and post-construction monitoring techniques have been proposed in order to determine the effectiveness of the proposed mitigation measures.

5.1 Landforms, Soils and Geology

As described in Sections 4.1 and 4.2, the area consists of soils from glacial lake deposits and 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). Bedrock Geology is consistent with the Upper Ordovician period containing limestone, dolostone, shale, and sandstone. Several geotechnical investigations on the east side of Park Lawn Road (2150 Lake Shore Boulevard) indicated that soil contamination persists following remediation completed in 2018 (Golder Associated Ltd., 2019).

The following sections will evaluate potential impacts to soils, landforms and geology from the Project, as well as any mitigation measures and recommended monitoring.

5.1.1 Construction

The following sections discuss the potential environmental effects on soils, landforms and geology from construction activities.

5.1.1.1 Soils

Construction activities have the potential to have the following effects if unmitigated:

- Erosion
- Soil Compaction
- Soil Mixing
- Drainage Alterations
- Bank Degradation
- Habitat Impacts
- Soil Contamination (from spills or other deleterious substances transported during erosion)

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). As the soil is carried toward waterbodies, sedimentation can result in the filling of reservoirs, drainage alteration, degraded water quality, and impacts to aquatic habitat. Impacts to hydrologic features are further described in Section 5.3. In addition to erosion and sedimentation during construction, the removal of soil and placement of fill materials will also impact the soil composition in the area.

Construction activities also present the possibility of spills occurring within the Study Area. Spills refer to the release or discharge of a contaminant or pollutant that have the potential to cause adverse impacts to the environment. Spills have the potential to cause contamination of soils.

5.1.1.2 Landforms, Topography and Geology

In addition to the potential impacts to the ravine systems within the Study Area (further described in Section 5.8), construction activities have the potential to have the following effects if unmitigated:

- Mass movement
- Changes in channel morphology in Mimico Creek

Results from the fluvial geomorphology assessment report by Water's Edge (Water's Edge, 2021) recommend that continuing to maintain the existing concrete and armourstone retaining walls to prevent further erosion and meander movement.

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.

5.1.2 Operations

The following sections discuss the potential environmental effects from operation.

5.1.2.1 Soils

Operation has the potential to have the following effects if unmitigated:

- Soil Contamination (through spills or other deleterious substances transported during erosion)
- Soil Contamination (through imported fill materials)

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.

5.1.2.2 Landforms, Topography and Geology

In addition to the potential impacts to the ravine systems within the Study Area (further described in Section 5.8), construction activities have the potential to have the following effects if unmitigated:

- Mass movement
- Changes in channel morphology

These impacts are further described in the construction impacts section above (Section 5.1.1.2). Similar impacts to landforms, topography and geology would be expected from both construction and operation phases if bank stability concerns are unaddressed.

5.1.3 Mitigation Measures

The following measures are proposed in order to mitigate the negative effects of the Project on soils, landforms and geology.

5.1.3.1 Soils

- Retain existing vegetation within the Study Area to the extent practicable to reduce soil erosion. Vegetation removal will be kept to a minimum, limited to within the construction disturbance area. Areas for vegetation removal will be refined during detailed design, if required (e.g., change in construction disturbance area, final staging areas);
- A Soil Management Plan (SMP) as defined by Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19) will be prepared by a Qualified Professional as defined in *Ontario Regulation 153/04: Records of Site Condition* (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for

managing soil materials on-site (includes excavation, location of stockpiles, reuse, and off-site disposal);

- Erosion and Sediment Control drawings, including TRCA Standard Notes (<http://www.trca.on.ca/dotAsset/93458.pdf>), and a report (ESC Plan) which follow the Erosion and Sediment Control Guideline for Urban Construction, December 2019, will be developed as part of the O. Reg 166/06 application to detail the mitigation measures required during construction. The ESC measures will be implemented prior to Project construction and maintained during the construction phase in accordance with an Erosion and Sediment Control 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; and

- An Emergency Response and Communications Plan will be developed and followed throughout the operations and maintenance phase (includes spill response and contingency plans).

5.1.3.2 *Landforms, Topography and Geology*

- A detailed geotechnical investigation 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).

5.2 **Groundwater**

As discussed in Section 4.3, the Study Area does not contain wellhead protection areas, intake protection zones, or significant groundwater recharge areas, however it does overlay a highly vulnerable aquifer (CTC Source Protection Region, 2015). Additionally, groundwater monitoring conducted outside of the TRCA regulation limits on the east side of Park Lawn Road (2150 Lake Shore Boulevard) indicate that Polycyclic Aromatic Hydrocarbon (PAH) exceedances were still present on the site post-remediation.

The following sections will evaluate any potential impacts to groundwater from the Project, as well as any mitigation measures and recommended monitoring.

5.2.1 **Construction**

The following sections discuss the potential environmental effects on soils, landforms and geology from construction activities.

5.2.1.1 *Quality*

Construction activities have the potential to have the following effects if unmitigated:

- Groundwater Contamination

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. Contaminated groundwater can affect human populations that use groundwater for drinking water, basic household water and industrial processes. In addition, degraded water quality can be detrimental to fish and wildlife species dependent on groundwater discharges in aquatic and terrestrial environments.

5.2.1.2 *Quantity*

Construction activities have the potential to have the following effects if unmitigated:

- Loss of groundwater quantity from the highly vulnerable aquifer

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. Groundwater also has uses such as agriculture, industry and drinking water supplies, therefore

an influx of groundwater update from a singular project or industry can lead to shortages or disruptions in groundwater levels for others.

The overall increase of hardened surfaces within the Study Area from the proposed development can lead to a reduction of infiltration capacity in the area, however stormwater management plans have not been developed at this point.

5.2.2 Operations

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

5.2.3 Mitigation Measures

The following measures are proposed in order to mitigate the negative effects of the Project on groundwater quantity and quality:

- Mitigation measures for erosion and sediment control included in Section 5.1.3 will be sufficient to mitigate any potential contamination of groundwater. A detailed ESC Management Plan will be prepared during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed;
- A site specific Dewatering Management Plan shall be followed in order to determine groundwater levels and aquifer recharge rates to mitigate any impacts to groundwater quantity; and
- Stormwater management activities within the Study Area will be designed to meet the standards set forth in the Toronto Green Standards (TGS) (Toronto, 2019), (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.
- 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.

5.3 Watercourses, Hydrological Features and Aquatic Environment

As described in Section 4.4, Mimico Creek is located to the west of Park Lawn Road within the highly urbanized Mimico Creek Watershed. The creek has a long history of anthropogenic

influences often resulting in poor water quality, as well as increased erosion and flooding (Toronto and Region Conservation Authority, 2018). The banks along Mimico Creek are variable in composition, including some stone retaining walls, highly eroded banks and flat, sandy deposits. In addition to Mimico Creek, a surface water drainage channel with associated wetland community along its peripheries is located south of the Gardiner Expressway bridge; this community is not expected to provide hydrological stormwater retention to any measurable degree. The aquatic environment within the area is suitable for a number of fish species as noted in Section 4.5.

The following sections will evaluate any potential impacts to watercourses, hydrological features and the aquatic environment from the Project as well as any mitigation measures and recommended monitoring.

5.3.1 **Construction**

The following section discusses the potential environmental effects on watercourses, hydrological features and the aquatic environment from construction activities. Construction activities have the potential to have the following effects if unmitigated:

- Water quality degradation
- Loss of riparian habitat
- Loss of aquatic habitat
- Flow alterations

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.

Despite the area being heavily disturbed, many fish species reside within Mimico Creek, and therefore mitigation measures are presented below in Section 5.3.3

5.3.2 Operations

A detailed geotechnical investigation was completed in order to assess the bank stability of Mimico Creek north of the rail corridor (Hatch, 2021). If appropriate planning and mitigation measures are developed, no impacts to hydrological features, watercourses or aquatic environment are anticipated during operation.

5.3.3 Mitigation Measures

The following measures are proposed in order to mitigate the negative effects of the Project on watercourses.

- Mitigation measures for ESC, bank stability and spills included in Section 5.1.3 will reduce impacts to hydrological features and aquatic habitat on site. A detailed ESC Plan will be created during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed;
- In-water work must occur from July 1 to March 31 of any given year due to the warmwater classification of the watercourse in order to avoid sensitive life stages such as migration, spawning and rearing;
- If in-water work will occur during construction, the area will be isolated using cofferdams and dewatered in accordance with a Dewatering Plan prepared during detailed design;
- Fish removals will be conducted by qualified biologists in isolated areas prior to dewatering. All fish will be enumerated and reported in accordance with the MNRF. A Licence to Collect Fish for Scientific Purposes will be obtained from the MNRF if fish relocations are required;
- Fish will be released unharmed into suitable habitat downstream of the work area;
- If an invasive species is encountered during the fish relocation it will be euthanized and removed from the watercourse in accordance with MNRF conditions;
- The work area shall be delineated and workers shall be made aware of the limits to construction activities;
- Heavy machinery or equipment requiring fuel shall be stored at a minimum of 30 m from the watercourse;
- Site preparation shall be phased for the winter months to avoid impacts to aquatic wildlife in the summer months;
- Riparian vegetation removal shall be kept to the minimum required for construction; and
- Metrolinx is committed to having meaningful engagement with Curve Lake First Nation in the event that in-water works and restoration are required. If in-water works are required, then additional studies would be undertaken and will be circulated for input to Curve Lake First Nation.

5.4 Terrestrial Environment

As discussed in Section 4.6, the updated ELC classification identified ten terrestrial ecosites within 23 individual polygons within Study Area (Figure 4-1). The terrestrial environment within the Study Area consists predominantly of urbanized lands, dominated by relatively small cultural vegetation communities with cultural meadows, thickets and woodlands. Within these terrestrial environments, a large number of species are invasive and/or non-native. Field investigations within 2020 revealed 13 species that are locally or regionally significant as defined by the TRCA and/or the City of Toronto.

The following sections will evaluate any potential impacts to both vegetation communities and significant flora from the Project, as well as any mitigation and recommended monitoring.

5.4.1 Construction

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 of high density residential and transportation corridor and condominium building property; 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 ten terrestrial ecosites described in 4.6.2.

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

As documented in Section 4.6.1, 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.

5.4.2 Operations

As mentioned above, a total loss of 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. Impacts to terrestrial wildlife are further discussed in Sections 5.5.

5.4.3 Mitigation Measures and Monitoring

Utilizing a mitigation hierarchy approach as defined in the Guideline for Determining Ecosystem Compensation (Toronto and Region Conservatoin Authority, 2018), terrestrial vegetation disturbance will first be avoided where possible through the delineation of vegetation clearing zones determined by overlaying the station design with ELC mapping. Vegetation clearing will be minimized to the greatest extent possible within the Study Area and will only be required in areas of permanent disturbance (station components) and areas required to facilitate construction. The following measures are proposed in areas where vegetation cannot be avoided in order to mitigate the negative effects of the Project on the terrestrial environment. For any impacts to vegetation that cannot be eliminated, compensation will be determined through a Vegetation management Plan, further described in the following sections.

5.4.3.1 Proliferation of Invasive Species

- An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan will include site specific techniques and procedures outlining the removal and transportation of invasive species;
- Disturbed areas within the construction site will be revegetated as soon as conditions allow;
- Any vessels or machinery will be thoroughly cleaned prior to entering the site and when being transported between sites. Equipment cleaning must occur at least 30 m from the watercourse;

- If an invasive species is removed, the species will be disposed of appropriately in an off-site location;
- A SMP will be prepared 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;
- Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design. Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation;
- Metrolinx is committed to having meaningful conversations with Indigenous Nations to understand and recognize that species deemed to be invasive may hold cultural value. Invasive species management plans, if required, will be shared with Curve Lake First Nation for review and input during detailed design;
- 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 Emerald Ash Borer (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.

5.4.3.2 *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;
- Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto and TRCA permitting processes, utilizing the Guideline for Determining Ecosystem Compensation (Toronto and Region Conservation Authority, 2018). A basal area approach as noted within Section 6.3.2 of the Tree Inventory Plan (Appendix B of the EPR) should be used to determine compensation values;

- Removal of trees and shrubs shall be completed mechanically.
- Herbicides may be applied in combination with other methods or selectively, using advanced application technologies and appropriate timing in accordance with the Metrolinx Vegetation Guideline (2020) for areas where mechanical removal is not possible or to prevent regrowth of invasive species. Choosing which herbicide to apply in response to IVM needs is dependent on: time of year; stage of plant growth; site-specific considerations and sensitivities; soil moisture before, during, and after application; precipitation (rain or snow); and temperatures of soil and air before treatment. It may also consider the use of the product with the least adverse non-target impacts available that will achieve the necessary control. Only chemicals approved (at the time of application) by the appropriate federal and provincial government shall be used. Personnel involved in the handling and application of herbicides must do so in accordance with Metrolinx protocols and policies. Herbicides must be applied in accordance with the federal *Pest Control Products Act*, the *Ontario Pesticides Act*, and Ontario Regulation 63/09 and in accordance with all label directions. All personnel applying chemicals shall have valid applicator's licenses.
- Any tree clearing or limb trimming will be limited to meet necessary safety clearances; and
- 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.

5.5 Wildlife

As discussed in Section 4.7, many species of wildlife have been documented within the Study Area. Many small mammals and birds that are accustomed to urbanized settings have also been observed within the Study Area.

The following sections will evaluate any potential impacts to wildlife from the Project, as well as any mitigation and recommended monitoring.

5.5.1 Construction

The following sections discuss the potential environmental effects on wildlife from construction activities.

5.5.1.1 Birds

Construction activities have the potential to have the following effects if unmitigated:

- Destruction of nests and habitat during tree clearing activities
- Injury or loss of life due to vehicle strikes and other large machinery

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. As described in Section 5.4, 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.

During construction, due to the increased presence of heavy machinery, construction vehicles and the potential for increased traffic in the area, there is an increased risk for avian strikes throughout the Study Area.

5.5.1.2 *Herpetofauna and Mammals*

Construction activities have the potential to have the following effects if unmitigated:

- Injury or loss of life due to vehicle strikes and other large machinery
- Loss of Habitat

During construction, due to the increased presence of heavy machinery, construction vehicles and the potential for increased traffic in the area, there is an increased risk for wildlife strikes throughout the Study Area. Many mammals inhabit the Study Area, therefore there is a moderate potential for species to be struck on Park Lawn Road or Lake Shore Boulevard West due to increased traffic.

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.

5.5.1.3 *Butterflies*

No impacts to butterflies are anticipated from the proposed works due to the lack of habitat found within the site. Some scattered individuals of milkweed have been identified throughout the Study Area. Several Monarch were observed foraging within the Study Area.

5.5.2 *Operations*

The following section discusses the potential environmental effects on all wildlife from operation. Effects include:

- Risk of train / wildlife collisions;
- Risk of bird strike impact; and
- Light spillage.

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.

5.5.3 **Mitigation Measures and Monitoring**

Utilizing a mitigation hierarchy approach as defined in the Guideline for Determining Ecosystem Compensation (Toronto and Region Conservation Authority, 2018), habitat disturbance will first be avoided where possible through the delineation of construction zones determined by overlaying the station design with habitat mapping. Vegetation clearing and grubbing will be minimized to the greatest extent possible within the Study Area and will only be required in areas of permanent disturbance (station components) and areas required to facilitate construction. The following measures are proposed in areas where habitat cannot be avoided in order to mitigate the negative effects of the Project on the terrestrial environment. For any impacts to wildlife habitat that cannot be eliminated, compensation will be determined through a Wildlife Management Plan, further described in the following sections. The following measures are proposed in order to mitigate the negative effects of the Project on wildlife:

5.5.3.1 **Birds**

- A Wildlife Management Plan shall be developed during detailed design and followed accordingly. As vegetation clearing is anticipated within the Project Footprint, ecological compensation for breeding bird habitat should be developed within the Wildlife Management Plan.
- Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species' buffers and timing windows. During the detailed design phase of the project Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation.
- Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds.
- 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, 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);
 - Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions;
 - Light spillage will be taken into consideration during detailed design and shall include the use of Dark Sky compliant fixtures as outlined in TGS Version 3; and
 - Bird-friendly building design principles in accordance with the highest applicable TGS shall be taken into consideration (i.e., visual markers applied to the first exterior surface shall be considered).

5.5.3.2 *Herpetofauna and Mammals*

- Once the final design for the station is complete, additional studies will be completed in fall 2021 to identify if hibernaculum are located within the Project footprint.
- A Wildlife Management Plan shall be developed during detailed design and followed accordingly. If impacts to wildlife cannot be eliminated, ecological compensation for any reptile hibernaculum or bat habitat should be developed within the Wildlife Management Plan.
- Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species' buffers and timing windows. During the detailed design phase of the project, Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation.

- The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits. Sweeps will be conducted by a qualified Ecologist.
- Exclusionary fencing shall be installed to eliminate access to the project footprint in advance of construction to prevent reptiles, amphibians and some mammals entering the site.
- Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site.
- Install permanent exclusionary fencing around the railway corridor near areas where wildlife may attempt to cross the rail corridor.

5.6 Significant Wildlife Habitat

Section 4.8 documents and summarizes the SWH evaluation conducted for the Project using the Significant Wildlife Habitat Criteria Schedule for Ecoregion 7E (Ministry of Natural Resources, 2015). Candidate or confirmed SWH was evaluated using the criteria in the schedule and was based on field investigations and desktop research conducted in 2020.

The following sections will evaluate any potential impacts to SWH from the Project, as well as any mitigation measures and recommended monitoring.

5.6.1 Construction

The following sections discuss the potential environmental effects on soils, landforms and geology from construction activities.

5.6.1.1 Reptile Hibernaculum

Construction activities have the potential to have the following effects if unmitigated:

- 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.

5.6.1.2 Special Concern and Rare Wildlife Species

Construction activities have the potential to have the following effects if unmitigated:

- Loss of Special Concern species habitat
- Injury or loss of life due to vehicle strikes and other large machinery

Nine species listed as Special Concern were identified as having potential to inhabit the Study Area (Table 4-5). 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.

During construction, due to the increased presence of heavy machinery, construction vehicles and the potential for increased traffic in the area, there is an increased risk for wildlife strikes throughout the Study Area.

5.6.2 Operations

5.6.2.1 Reptile Hibernaculum

No impacts from operations on potential reptile hibernaculum are expected.

5.6.2.2 Special Concern and Rare Wildlife Species

The proposed Project has the potential to result in train/wildlife collisions throughout the Study Area. Despite the potential collisions, 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. Due to the high level of tolerance to trains and the lack of Special Concern species observed within the Study Area, impacts from potential collisions are considered insignificant on special concern species.

5.6.3 Mitigation Measures

The following measures are proposed in order to mitigate the negative effects of the Project on Significant Wildlife Habitat:

- Additional studies to support detailed design will be completed in the Fall 2021 to identify if hibernaculum are located within the Project footprint. The results of the work will be included with the O. Reg 166/06 application package for TRCA review;
- A Wildlife Management Plan shall be developed during detailed design and followed accordingly;
- Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species' buffers and timing windows. During the detailed design phase of the project Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation; and
- Mitigation measures listed in Section 5.5.3 shall be followed to mitigate any impacts during construction for wildlife within the Study Area.

- Should SWH be discovered within the Study Area in Fall 2021 and avoidance of these features is not feasible, mitigation measures will be further developed in the Wildlife Management Plan and include ecological compensation for areas where impacts cannot be eliminated. Compensation should be determined using the Guideline for Determining Ecosystem Compensation (Toronto and Region Conservation Authority, 2018).

5.7 Species at Risk

As discussed in Section 4.9, many SAR have been documented within the Study Area. In total, six species that have been historically documented within the area have a Threatened or Endangered status under the ESA, 2007 (Ministry of Natural Resources, 2007) (see Table 4-5).

The following sections will evaluate any potential impacts to Threatened and Endangered SAR from the Project, as well as any mitigation and recommended monitoring. Special Concern species are discussed in Section 5.6.

5.7.1 Construction

5.7.1.1 Bank Swallow

As described in Section 4.9.1, Bank Swallows were observed during field investigations flying over Mimico Creek. Additionally, a small section of the western Creek bank immediately outside the Study Area was identified as candidate habitat due to the steep, highly eroded, sandy banks. Although nesting holes in the bank were confirmed to be used by Kingfishers, the area remains as candidate habitat.

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 so as 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.

5.7.1.2 Barn Swallow

As described in Section 4.9.1, Barn Swallows were observed during field investigation flying over Mimico Creek, however no nesting has been observed on the bridges or structures within the Study Area.

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. Furthermore, construction is unlikely to reduce the Mimico Creek valley's function as foraging habitat.

If any displacement within the Study Area due to construction activities were to occur, the Lake Shore Boulevard West bridge provides alternative habitat. Mitigation measures are presented in Section 5.7.3 for situations where nesting habitat is found within the Study Area prior to construction.

5.7.1.3 *Chimney Swift*

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) are not expected to be disturbed during construction. Mitigation measures are presented in Section 5.7.3 for situations where nesting habitat or an individual is found within the Study Area prior to construction.

5.7.1.4 *American Eel*

Impacts to American Eel will be further evaluated following geomorphological investigations to determine if in-water work is required. 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.

5.7.1.5 *Blanding's Turtle*

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.

5.7.1.6 *Mottled Duskywing*

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.

5.7.1.7 *SAR Bats*

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 outlined in Section 4.9.5. 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 Metrolinx projects will determine compensation is required (Ministry of Natural Resources, 2007).

5.7.2 *Operations*

The proposed Project has the potential to result in train/wildlife collisions throughout the Study Area. Despite the potential collisions, 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. Due to the high

level of tolerance to trains, impacts from potential collisions are considered insignificant on SAR. .

5.7.3 **Mitigation Measures**

The following measures are proposed in order to mitigate the negative effects of the Project on SAR:

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

5.8 **Significant Natural Heritage Features**

The following sections will evaluate any potential impacts to significant natural heritage features from the Project, as well as any mitigation measures and recommended monitoring.

5.8.1 Construction

The following sections discuss the potential environmental effects on wildlife from construction activities.

5.8.1.1 City of Toronto Ravine and Natural Feature Plan

Construction activities have the potential to have the following effects if unmitigated:

- Loss of ravine habitat
- Alteration of Ravine Habitat
- 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 should be further assessed during detailed design. Opportunities to maintain the existing access route to the Creek both during and post-construction should also be examined, as well as potential restoration measures.

5.8.2 Operations

Operation has the potential to have the following effects if unmitigated:

- Loss of Ravine Habitat

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.

5.8.3 Mitigation Measures

Utilizing a mitigation hierarchy approach as defined in the Guideline for Determining Ecosystem Compensation (Toronto and Region Conservation Authority, 2018), disturbance to the Ravine will first be avoided where possible through the delineation of construction zones determined

by overlaying the station design with RNFP mapping. Alteration or destruction of the ravine components will be minimized to the greatest extent possible within the Study Area and will only be required in areas of permanent disturbance (station components) and areas required to facilitate construction. The following measures are proposed in areas where the ravine cannot be avoided in order to mitigate the negative effects of the Project on the significant natural feature. For any impacts to the ravine system that cannot be eliminated, compensation will be determined through a Vegetation Management Plan, further described in the following sections. The following measures are proposed in order to mitigate the negative effects of the Project on significant natural heritage features.

- Mitigation measures discussed in Section 4.6 regarding tree vegetation removal and invasive species management shall be followed to mitigate impacts to the ravine system
- Mitigation Measures developed to minimize impacts from erosion and sediment outlined in Section 5.1 shall be followed in order to mitigate impacts to the ravine system
- Within a confined valley such as the project area, the extent of the erosion hazard is determined by the combined effect of the toe erosion allowance, stable slope allowance, stable top of slope and erosion access allowance as defined by the TRCA Living City Policies (TRCA, 2014). Future geotechnical and fluvial geomorphology assessments will determine these parameters in order to develop a site specific erosion hazard to aid in development planning.

5.9 Climate Change

The following sections will evaluate any potential impacts to climate change from the Project, as well as any mitigation measures and recommended monitoring.

5.9.1 Construction

Construction activities has the potential to have the following effects if unmitigated:

- Adverse Effects to Air Quality due to vehicle and heavy machinery emissions
- Reduction in carbon sinks due to vegetation removal

Construction activities have the potential to result in negative impacts to air quality from construction vehicles and machinery. Due to the increased presence of vehicles/machinery that require fuel to operate, emissions such as carbon dioxide have the potential to result in the increased acceleration of climate change if left unmitigated. The Air Quality Impact Assessment Report (see Appendix F of the EPR) further outlines baseline and future air quality measurements and any recommended mitigation.

The loss of treed habitat within the city has the potential to contribute to the overarching problem of Climate Change due to the removal of carbon sinks that naturally sequester carbon and regulate our planets temperature. Impacts to climate change due to the removal of trees is not expected to be significant due to the small area of disturbance that is proposed, however the Metrolinx Vegetation Guide (Metrolinx, 2020) will be adhered to within the ROW.

5.9.2 **Operations**

Though construction activities for the Project have the potential to result in adverse effects that could contribute to climate change, the operational stage of the Project would present opportunities to improve the transit systems within the region, resulting in a reduction of Greenhouse Gas (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.

5.9.3 **Mitigation Measures**

The following measures are proposed in order to mitigate the negative effects of the Project on climate change:

- Adverse effects to air quality from construction activities can be mitigated through standard best practices, which include, but are not limited to:
 - All construction vehicles shall have a Drive Clean Emissions Report in compliance with O.Reg.361/98: Motor Vehicles under the *Environmental Protection Act*, R.S.O.1990, C/ E19 as well as licensing from the MTO.
 - Vehicles and machinery shall not be left to idle.
 - All vehicles shall be well maintained and fitted with a emission control system (e.g. exhaust baffles, mufflers, engine covers, etc.).

5.10 **Summary of Potential Effects, Mitigation Measures and Monitoring Activities**

The following table (Table 5-2) summarizes the potential effects, mitigation and monitoring activities that have been identified as they pertain to the construction, operation and maintenance of the proposed Park Lawn GO station.

Table 5-2: Summary of Potential Effects, Mitigation Measures and Monitoring Activities for the proposed Park Lawn GO Station

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Construction			
Soils	<ul style="list-style-type: none">ErosionSoil CompactionSoil MixingDrainage AlterationsBank DegradationHabitat ImpactsSoil Contamination (from spills or other deleterious substances transported during erosion)	<ul style="list-style-type: none">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 <i>Ontario Regulation 153/04: Records of Site Condition</i> (O. Reg. 153/04) (i.e., persons holding a Professional Engineer or Professional Geoscientist license) for managing soil materials on-site (includes excavation, location of stockpiles, reuse, and off-site disposal).Erosion and Sediment Control drawings, including TRCA Standard Notes (http://www.trca.on.ca/dotAsset/93458.pdf), and a report (ESC Plan) which follow the Erosion and Sediment Control Guideline for Urban Construction, December 2019, will be developed as part of the O. Reg 166/06 application to detail the mitigation measures required during construction. The ESC measures will be implemented prior to Project construction and maintained during the construction phase in accordance with an ESC Plan. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed.Disturbed areas within the construction site will be stabilized and re-vegetated as soon as conditions allow.The ESC measures will be left in place until disturbed areas within the construction site have been stabilized and will then be removed.Wet weather restrictions shall be applied during site preparation and excavation.Deleterious substances (including stockpiled material) will be used and stored in a manner that prevents any of the substances from entering a natural feature (at least 30 m away from Mimico Creek).A Hazardous Materials and Fuel Handling Plan will be developed prior to Project construction, to confirm that fuels and other hazardous materials are handled and stored in a safe manner during the construction process. Hazardous material and fuel storage, refueling and maintenance of construction equipment will occur within designated areas only.A Spill Prevention and Contingency Plan will be developed and will be in place prior to construction of the Project. Personnel will be trained in how to apply the plans and the plans will be reviewed on a regular basis to strengthen their effectiveness and facilitate continuous improvement. Spills or depositions into natural features will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will be on-site at all times during the work. Spills will be reported to the Ontario Spills Action Centre at 1-800-268-6060.	<p>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.</p> <p>A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained and enforced.</p> <p>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.</p> <p>Workers will report any instances of spills to their supervisors.</p>

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		<ul style="list-style-type: none">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).	
Landforms, Topography and Geology	Mass movement	<ul style="list-style-type: none">A detailed slope stability analysis was completed in order to assess the potential impacts of the proposed station platforms on the bank stability along Mimico Creek. Mitigations measures and recommendations are included in the geotechnical report (Hatch, 2021).	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Changes in channel morphology		
Groundwater	Effects to Groundwater Quality from Contamination	<ul style="list-style-type: none">Mitigation measures for erosion and sediment control included in Section 5.1.3 will be sufficient to mitigate any potential contamination of groundwater. A detailed ESC Management Plan will be prepared during detailed design in order to outline the specific mitigation required at various locations within the Study Area. If the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed.Stormwater management for the Station will be designed to meet the standards set forth in the Toronto Green Standard (City of Toronto, 2018) and the TRCA's stormwater management criteria (water quantity, water quality, erosion control and water balance for groundwater and natural features). The SWM report will be included as part of the submission for the O. Reg 166/06 application package to be prepared during detailed design.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.All requirements under the <i>Ontario Water Resources Act</i> (OWRA), R.S.O. 1990, c. O.40 with respect to water taking, management and discharge to the quality of water discharging into natural receivers will be met, including the following mitigation measures and best practices:<ul style="list-style-type: none">Approval of water takings in accordance with the MECP Permit to Take Water process or within the EASR framework.Any discharge from dewatering will be discharged to a City of Toronto sewer in accordance with the applicable City of Toronto Sewer Use By-law.	<p>A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained and enforced.</p> <p>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.</p> <p>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.</p> <p>Workers will report any instances of spills to their supervisors.</p>
	Loss of Groundwater Quantity from the Highly Vulnerable Aquifer		
	Water quality degradation	<ul style="list-style-type: none">Mitigation measures for ESC, bank stability and spills included in Section 5.1.3 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 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
	Loss of Riparian Habitat		

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Watercourses, Hydrological Features and Aquatic Environment		the ESC or dewatering measures are not functioning properly, no further work in the affected areas will occur until the problem is addressed.	Standards. The EMCP will be included as part of the O. Reg 166/06 application package to be prepared during detailed design.
	Loss of Aquatic Habitat	<ul style="list-style-type: none">Stormwater management for the Station will be designed to meet the standards set forth in the Toronto Green Standard (City of Toronto, 2019) and the TRCA's stormwater management criteria (water quantity, water quality, erosion control and water balance for groundwater and natural features). The SWM report will include a water balance for the site. The SWM report will be included as part of the submission for 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.
	Flow alterations	<ul style="list-style-type: none">Stormwater management plan will be shared with Curve Lake First Nation for review and input at the detailed design stage.In-water work must occur from July 1 to March 31 of any given year due to the warmwater classification of the watercourse to avoid sensitive life stages such as migration, spawning, and rearing.If in-water work will occur during construction, the area will be isolated using cofferdams and dewatered in accordance with a Dewatering Plan prepared during detailed design.Fish removals will be conducted by qualified biologists in isolated areas prior to dewatering. All fish will be enumerated and reported in accordance with the MNRF. A Licence to Collect Fish for Scientific Purposes will be obtained from the MNRF if fish relocations are required.Fish will be released unharmed into suitable habitat downstream of the work area.If an invasive species is encountered during the fish relocation it will be euthanized and removed from the watercourse in accordance with MNRF conditions.The work area shall be delineated and workers shall be made aware of the limits to construction activities.Heavy machinery or equipment requiring fuel shall be stored at a minimum of 30 m from the watercourse.Where feasible, site preparation shall be phased for the winter months to avoid impacts to aquatic wildlife in the summer months.Riparian vegetation removal shall be kept at the minimum required for construction.Metrolinx will work with Curve Lake First Nation to coordinate future environmental construction inspections, understanding that 48-hour notice is needed for safety requirements.	<p>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.</p> <p>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.</p>
Terrestrial Environment	Loss of vegetation communities from tree clearing, site preparation and grading	<ul style="list-style-type: none">A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures.Removal of trees and shrubs shall be completed mechanically.In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be required to clear vegetation.	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
		<p>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.</p> <ul style="list-style-type: none">• Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto and TRCA permitting processes.• Any tree clearing or limb trimming will be limited to that required to meet necessary safety clearances.• Trees will be trimmed by a Qualified Professional arborist to limit tree damage.	
	Proliferation of Invasive Species	<ul style="list-style-type: none">• 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 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: Records of Site Condition (O. Reg. 153/04) for managing soil materials on site (includes excavation, location of stockpiles, reuse and offsite disposal).• In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank.• Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design. Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation.• Metrolinx is committed to having meaningful conversations with Indigenous Nations to understand and recognize that species deemed to be invasive may hold cultural value. Invasive species management plans, if required, will be shared with Curve Lake First Nation for review and input during detailed design.• Where revegetation is required, a native seed mix, which does not contain invasive species, will be used.• Ash trees, leaves, logs, or wood chips will not be removed out of the Regulated Area, as identified on the CFIA website (Canadian Food Inspection Agency, 2015). This is necessary to prevent the spread	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
		<p>of the EAB to un-infested areas in Ontario. The Contractor must dispose of all wood at a registered Waste Facility.</p> <ul style="list-style-type: none">If extensive invasion of non-native species is identified as a result of the Project, contingency measures may include an applicable herbicide application. A herbicide application plan will be developed as required and submitted to the TRCA for review.	
	Dust created as a result of construction has the potential to settle on adjacent vegetation, disturbing wildlife and their habitat	<ul style="list-style-type: none">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.
Birds	Habitat loss	<ul style="list-style-type: none">Additional studies to support detailed design will be completed in the Fall 2021 to identify if hibernaculum are located within the Project footprint. The results of the work will be included with the O. Reg 166/06 application package for TRCA review.A Wildlife Management Plan shall be developed during detailed design and followed accordingly.Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species’ buffers and timing windows. During the detailed design phase of the project Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation.Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds.If vegetation must be removed during the breeding bird timing window:Nest and nesting activity searches will be conducted in areas defined as simple habitat (i.e., the CUM1-1 community) by a qualified Ecologist/Avian Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of confirmed breeding evidence, as defined by OBBA criteria (Cadman, 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.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.	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
		<ul style="list-style-type: none"> 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. 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). 	
	Injury or loss of life due to vehicle strikes and other large machinery, or collision with structures	<ul style="list-style-type: none"> Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions. 	
	Light spillage	<ul style="list-style-type: none"> Light spillage will be taken into consideration during detailed design and shall include the use of Dark Sky compliant fixtures as outlined in TGS Version 3; and Bird-friendly building design principles in accordance with the highest applicable TGS shall be taken into consideration (i.e., visual markers applied to the first exterior surface shall be considered). 	
Herpetofauna and Mammals	Habitat loss	<ul style="list-style-type: none"> A Wildlife Management Plan shall be developed during detailed design and followed accordingly. Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species’ buffers and timing windows. During the detailed design phase of the project Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation. The site shall be swept prior to each day to ensure no mammals or herpetofauna are found within the construction limits. Sweeps will be conducted by a qualified Ecologist. Exclusionary fencing shall be installed to eliminate access to the project area in advance of construction to prevent reptiles, amphibians and some mammals to the site. Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site. 	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	<ul style="list-style-type: none"> Speed limits within the construction areas will be implemented and posted to reduce the possibility of vehicle / wildlife collisions. Final design will include permanent exclusionary fencing where wildlife is anticipated to access the railway corridor. 	Workers will report any wildlife collisions to their supervisors.
Significant Wildlife Habitat	Loss of Reptile Habitat (Hibernaculum)	<ul style="list-style-type: none"> A Wildlife Management Plan shall be developed during detailed design and followed accordingly. Metrolinx welcomes and supports constructive dialogue and input with Curve Lake First Nation considering wildlife species’ buffers and timing windows. During the detailed design phase of the project Wildlife Management Plans will be circulated for review and input to Curve Lake First Nation. Additional studies to support detailed design will be completed in the Fall 2021 to identify if hibernaculum are located within the Project footprint. 	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Loss of Special Concern Species Habitat		

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		<ul style="list-style-type: none">Once final design is completed, a survey will be completed in Fall 2021 within the areas of permanent loss to confirm if reptile hibernaculum is present in those areas.The site shall be swept prior to each day to ensure no reptiles are found within the construction limits. Sweeps will be conducted by a qualified Ecologist.Exclusionary fencing shall be installed to eliminate access to the project area in advance of construction to prevent reptiles, amphibians and some mammals to the site.Workers shall be provided with training on how to identify species of conservation concern and safe handling procedures for relocating wildlife from the construction site.	
Species at Risk	Loss of Habitat	<ul style="list-style-type: none">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:<ul style="list-style-type: none">In the case of SAR Birds: all activities will stop and the Contractor (with assistance from a qualified Ecologist/Avian Biologist) will discuss mitigation measures with the Environmental Inspector. In addition, the MECP and ECCC (if the species is considered a migratory bird) will be contacted to discuss applicable mitigation options. The Contractor will proceed based on the mitigation measures established through discussions with the MECP and/or ECCC.Candidate Bank Swallow Habitat and Barn Swallow habitat shall be identified to all construction personnel prior to construction activities. Workers will also be trained in the identification of all potential SAR within the Study Area.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.Metrolinx is committed to discussing and identifying species of concern with Curve Lake First Nation including culturally important or keystone species.	Monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
	Injury / Loss of Life		

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		<ul style="list-style-type: none">General wildlife mitigation during construction and operations will be implemented to minimize effects to all species. This includes avoiding sensitive breeding windows for all species regardless of their status under the Species of Risk Act.	
Ravine and Natural Feature Plan	Loss of Ravine Habitat	<ul style="list-style-type: none">A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures.Removal of trees and shrubs shall be completed mechanically.In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be used to clear vegetation. Any herbicide applications to clear vegetation within the rail corridor ROW will be applied in accordance with industry BMPs and regulations including MECP requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas.Any tree clearing or limb trimming will be limited to meet necessary safety clearances.Trees will be trimmed by a Qualified Professional arborist to limit tree damage.An Invasive Species Management Plan shall be developed in order to mitigate against the proliferation of invasive species within the Study Area. The plan shall include site specific techniques and procedures outlining the removal and transportation of invasive species.All disturbed areas within the construction site will be re vegetated as soon as conditions allow.Any equipment will be thoroughly cleaned prior to entering the site and when being transported between sites. All cleaning must occur at least 30m from the watercourse.If an invasive species is removed, the species will be disposed of appropriately in an off-site location.A SMP will be prepared by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on site (includes excavation, location of stockpiles, reuse and offsite disposal).In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank.Where revegetation is required, a native seed mix, which does not contain invasive species, will be used.Ash trees, leaves, logs, or wood chips will not be removed out of the Regulated Area, as identified on the CFIA website (CFIA, 2015). This is necessary to prevent the spread of the EAB to un-infested areas in Ontario. The Contractor must dispose of all wood at a registered Waste Facility.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.	<p>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.</p> <p>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.</p> <p>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.</p>
	Alteration of Ravine Habitat		
	Decrease in Biodiversity		

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Climate Change	Adverse Effects to Air Quality due to vehicle and heavy machinery emissions	<ul style="list-style-type: none">Adverse effects to air quality from construction activities can be mitigated through standard best management practices, which include, but are not limited to:<ul style="list-style-type: none">All construction vehicles shall have a Drive Clean Emissions Report in compliance with O. Reg. 361/98: Motor Vehicles under the <i>Environmental Protection Act</i>, R.S.O.1990, C/ E19 as well as licensing from the MTO.Vehicles and machinery shall not be left to idle.All vehicles shall be well maintained and fitted with a emission control system (e.g. exhaust baffles, mufflers, engine covers, etc.).The Project would present opportunities to improve the transit systems within the region, resulting in a reduction of GHG emissions from vehicle use. In addition, the station is envisioned to be a multi-modal hub and promote various forms of active transportation such as walking, cycling and rollerblading as opposed those with higher carbon footprints (i.e., single-occupant vehicles).	The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone.
	Reduction in carbon sinks due to vegetation removal	<ul style="list-style-type: none">A Vegetation Management Plan shall be developed to identify site specific vegetation management including the delineation of vegetation removal zones, timing restrictions, revegetation protocols and other mitigation measures.Removal of trees and shrubs shall be completed mechanically.In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be used to clear vegetation. Any herbicide applications to clear vegetation within the corridor ROW will be applied in accordance with industry BMPs and regulations including MECP and TRCA requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas.Any tree clearing or limb trimming will be limited to meet necessary safety clearances.Trees will be trimmed by a Qualified Professional arborist to limit tree damage.	
Operations and Maintenance			
Soils	Soil Contamination (through spills or other deleterious substances transported during erosion)	<ul style="list-style-type: none">All disturbed areas within the construction site will be stabilized and revegetated as soon as conditions allow.Deleterious substances (including stockpiled material) will be used and stored in a manner that prevents any of the substances from entering a natural feature (at least 30 m away from watercourse).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 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.
	Soil Contamination (through imported fill materials)		GO Station staff and maintenance contractors are responsible for reporting spills and other issues and ensuring their timely resolution.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Terrestrial Environment	Loss of Trees from Pruning	<ul style="list-style-type: none">Removal of trees and shrubs shall be completed mechanically.In areas where non-chemical methods of vegetation control are not feasible or practical due to accessibility issues and/or lack of alternative solutions, herbicides may be used to clear vegetation. Any herbicide applications to clear vegetation within the rail corridor ROW will be applied in accordance with industry BMPs and regulations including MECP requirements. If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas.Any tree clearing or limb trimming will be limited to meet necessary safety clearances.Trees will be trimmed by a Qualified Professional arborist to limit tree damage.	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.

6. Recommendations for Future Work

6.1 Permitting Requirements

6.1.1 *Federal*

6.1.1.1 *Species at Risk Act, 2002*

The Federal *SARA, 2002* provides a framework to ensure the survival of wildlife species and the protection of natural heritage in Canada (Environment and Climate Change Canada, 2002). Under SARA, the Federal government has responsibility for wildlife as follows:

- Wildlife on Federal lands;
- Aquatic species; and
- Migratory birds protected by the *Migratory Birds Convention Act* (Government of Canada, 1994).

Barn Swallow and Bank Swallow have been confirmed utilizing the Study Area. Additionally, there is a potential for Chimney Swift to occur within the Study Area, which will be confirmed during future surveys. If impacts to federally listed SAR cannot be avoided, the Project may be subject to a permit from the competent minister responsible for the identified SARA species or the habitat of the species. The competent minister in the case of migratory birds protected by the MBCA is the ECCC.

6.1.1.2 *Fisheries Act, 1985*

The *Fisheries Act* (1985), governed by DFO, provides a framework for the proper management and control of fisheries and the conservation and protection of fish and fish habitat, including preventing pollution. All watercourses that contain fish or fish habitat will be subject to protections and approvals in the *Fisheries Act*. If in-water works within Mimico Creek are expected to be required during construction activities, a Request for Review will be developed and submitted to DFO. If death of fish or the Harmful Alteration, Disruption Or Destruction (HADD) of fish habitat will likely result from a project and cannot be mitigated, a *Fisheries Act* Authorization may be required.

6.1.2 *Provincial*

6.1.2.1 *Conservation Authorities Act, 1990*

The Study Area falls within the TRCA jurisdiction and is partially found within the TRCA Regulated Area. Construction activities are expected to occur within the Regulated Lands, therefore a permit under Ontario Regulation 166/06 will be required.

6.1.2.2 *Endangered Species Act, 2007,*

The provincial ESA provides protection for SAR and their habitat in Ontario. The Act provides policies for the protection of Extirpated, Endangered and Threatened Species, as well as management for species of Special Concern. Bank Swallows and Barn Swallows have been confirmed to be foraging within the Study Area. Mimico Creek has also been designated as

American Eel habitat. Additionally, the following Threatened/Endangered SAR were identified as having potential to occur within the site:

- Eastern Small-footed Myotis;
- Little Brown Myotis;
- Northern Myotis;
- Tri-coloured Bat;
- Chimney Swift
- Blanding's Turtle
- Mottled Duskywing

Should Threatened and/or Endangered species be encountered during further field investigations, and Project effects to SAR cannot be avoided, a permit under the ESA will be required, or regulatory exemptions under the ESA may apply. Should detailed design determine that work within the channel is required, a permit under the ESA will be required for impacts to American Eel habitat.

6.1.2.3 *Ontario Water Resources Act, 1990 and Environmental Protection Act, 1990*

If in-water work is required during construction activities, dewatering may be required to create an isolated dry work area. If dewatering is over 50,000 L/day but under 400,000 L/day a registration on the EASR system would be required. If dewatering exceeds 400,000 L/day, a Permit to Take Water would be required.

Any pumped water during dewatering activities will need be discharged to the appropriate area and would require an approval of one or a combination of the following:

- MECP Environmental Compliance Approval (OWRA, Section 53);
- Municipal Discharge Permits; and/or
- Conservation Authority Approval (through the permit process).

The need for these permits will be determined during detailed design.

6.1.3 ***Municipal***

A number of municipal permits may be required for activities related to project construction. This could include a Municipal Discharge Permits for the discharge of pumped water associated with construction dewatering activities. Additionally, municipal tree permits will be required for the removal and/or injury of vegetation within portions of the Study Area; details of municipal tree permitting can be found in the Tree Inventory Plan (Appendix B of the EPR).

6.1.3.1 City of Toronto Tree By-Law Permits

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.

6.2 Monitoring Requirements

The following section summarizes the recommended monitoring activities outlined in Table 5-2 to address the effectiveness of the proposed mitigation and/or restoration/compensation measures during the construction and operations and maintenance phases.

6.2.1 Construction

The following monitoring activities will be applied:

- The TRCA will be engaged during detailed design in order to determine the scope of an Environmental Monitoring and Contingency Plan (EMCP) in accordance with TRCA Standards. The EMCP will be included as part of the O. Reg 166/06 application package to be prepared during detailed design;
- A qualified Environmental Inspector is required throughout the construction period to ensure that protection measures are implemented, maintained and enforced;
- The Environmental Inspector will conduct regular inspections, timing is to be defined prior to Project construction to confirm that all activities are conducted in accordance with mitigation plans, ESC measures are functioning properly and are properly maintained throughout the construction phase, and all work is conducted within the specified work zone;

- Workers will report any instances of spills to their supervisors;
- Areas of revegetation will require watering and will be monitored by an Environmental Inspector or Environmental Monitor for at least two years to confirm at least an 80 percent survival rate and confirm that non-native and invasive species are not becoming pervasive as a result of the Project. A compensation/restoration strategy will be developed with the TRCA and the City of Toronto as the Project progresses.
- Metrolinx welcomes Curve Lake First Nation participation in site restoration efforts and planning and will provide restoration plans to Curve Lake First Nation for input as a part of the review process for detail design. Metrolinx will share a list of design and restoration plans to Curve Lake First Nation for them to identify which they would like to review. Review cycles, the expected level of effort, and review timelines will be determined by Metrolinx and Curve Lake First Nation;
- The Environmental Inspector will monitor dewatering occurring within 120 m of natural features. The Environmental Inspector will confirm that the water treatment is working appropriately and that no sediment is entering significant natural features; and
- 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.

6.2.2 ***Operations and Maintenance***

The following monitoring activities will be applied:

- 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.

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Appendix A

Desktop Review

Table 1: Natural Heritage Information Center

Common Name	Scientific Name	SRank	SARO	COSEWIC	SARA
Black Snakeroot	<i>Actaea racemosa</i>				
Old-field Toadflax	<i>Nuttallanthus canadensis</i>				
Redside Dace	<i>Clinostomus elongatus</i>	S1	END	END	END
Least Bittern	<i>Ixobrychus exilis</i>	S1	THR	THR	THR
Northern Map Turtle	<i>Graptemys geographica</i>	S1	SC	SC	SC
Giant Lacewing	<i>Polystoechotes punctata</i>				
Barn Swallow	<i>Hirundo rustica</i>	S1	THR	THR	THR
American Eel	<i>Anguilla rostrata</i>		END	THR	Not listed
Eastern Wood-pewee	<i>Contopus virens</i>	S1	SC	SC	SC

Table 2: Herps of Ontario 10 km x 10 km Square: 17PJ23

Common Name	Scientific Name	SARO	COSEWIC	SARA
American Toad	<i>Anaxyrus americanus</i>			
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	END	THR
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	SC
DeKay's Brownsnake	<i>Storeria dekayi</i>			
Eastern Garter Snake	<i>Thamnophis sirtalis sirtalis</i>			
Eastern Milksnake	<i>Lampropeltis triangulum</i>	SC	SC	SC
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>			
Green Frog	<i>Lithobates clamitans</i>			
Midland Painted Turtle	<i>Chrysemys picta</i>		SC	
Northern Leopard Frog	<i>Lithobates pipiens</i>			
Red-eared Slider	<i>Trachemys scripta elegans</i>			

Table 3: Ontario Breeding Bird Atlas 10 km x 10 km Square: 17PJ23

Common Name	Scientific Name	SARO	COSEWIC	SARA
Canada Goose	<i>Branta canadensis</i>			
Mute Swan	<i>Cygnus olor</i>			
Wood Duck	<i>Aix sponsa</i>			
Gadwall	<i>Anas strepera</i>			
American Wigeon	<i>Anas americana</i>			
American Black Duck	<i>Anas rubripes</i>			
Mallard	<i>Anas platyrhynchos</i>			
Blue-winged Teal	<i>Anas discors</i>			
Northern Shoveler	<i>Anas clypeata</i>			
Canvasback	<i>Aythya valisineria</i>			
Hooded Merganser	<i>Lophodytes cucullatus</i>			
Ring-necked Pheasant	<i>Phasianus colchicus</i>			
Pied-billed Grebe	<i>Podilymbus podiceps</i>			
Red-necked Grebe	<i>Podiceps grisegena</i>	NAR	NAR	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	NAR	NAR	
Great Egret	<i>Ardea alba</i>			
Green Heron	<i>Butorides virescens</i>			
Turkey Vulture	<i>Cathartes aura</i>			
Sharp-shinned Hawk	<i>Accipiter striatus</i>	NAR	NAR	
Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	NAR	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	NAR	NAR	
American Kestrel	<i>Falco sparverius</i>			
Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC	SC
Virginia Rail	<i>Rallus limicola</i>			
Sora	<i>Porzana carolina</i>			
Killdeer	<i>Charadrius vociferus</i>			
Rock Pigeon	<i>Columba livia</i>			
Spotted Sandpiper	<i>Actitis macularius</i>			
American Woodcock	<i>Scolopax minor</i>			
Ring-billed Gull	<i>Larus delawarensis</i>			
Common Tern	<i>Sterna hirundo</i>	NAR	NAR	
Mourning Dove	<i>Zenaida macroura</i>			
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>			

Common Name	Scientific Name	SARO	COSEWIC	SARA
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>			
Eastern Screech-Owl	<i>Megascops asio</i>	NAR	NAR	
Great Horned Owl	<i>Bubo virginianus</i>			
Common Nighthawk	<i>Chordeiles minor</i>	SC	SC	THR
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	THR
Ruby-throated Hummingbird	<i>Archilochus colubris</i>			
Belted Kingfisher	<i>Megaceryle alcyon</i>			
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC	END	THR
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>			
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>			
Downy Woodpecker	<i>Picoides pubescens</i>			
Hairy Woodpecker	<i>Picoides villosus</i>			
Northern Flicker	<i>Colaptes auratus</i>			
Pileated Woodpecker	<i>Dryocopus pileatus</i>			
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	SC
Willow Flycatcher	<i>Empidonax traillii</i>			
Least Flycatcher	<i>Empidonax minimus</i>			
Eastern Phoebe	<i>Sayornis phoebe</i>			
Great Crested Flycatcher	<i>Myiarchus crinitus</i>			
Eastern Kingbird	<i>Tyrannus tyrannus</i>			
Yellow-throated Vireo	<i>Vireo flavifrons</i>			
Warbling Vireo	<i>Vireo gilvus</i>			
Red-eyed Vireo	<i>Vireo olivaceus</i>			
Blue Jay	<i>Cyanocitta cristata</i>			
American Crow	<i>Corvus brachyrhynchos</i>			
Horned Lark	<i>Eremophila alpestris</i>		END	END
Purple Martin	<i>Progne subis</i>			
Tree Swallow	<i>Tachycineta bicolor</i>			
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			
Bank Swallow	<i>Riparia riparia</i>	THR	THR	THR
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>			
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	THR

Common Name	Scientific Name	SARO	COSEWIC	SARA
Black-capped Chickadee	<i>Poecile atricapillus</i>			
Red-breasted Nuthatch	<i>Sitta canadensis</i>			
White-breasted Nuthatch	<i>Sitta carolinensis</i>			
Brown Creeper	<i>Certhia americana</i>			
Carolina Wren	<i>Thryothorus ludovicianus</i>			
House Wren	<i>Troglodytes aedon</i>			
Winter Wren	<i>Troglodytes hiemalis</i>			
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>			
Veery	<i>Catharus fuscescens</i>			
Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR	THR
American Robin	<i>Turdus migratorius</i>			
Gray Catbird	<i>Dumetella carolinensis</i>			
Northern Mockingbird	<i>Mimus polyglottos</i>			
Brown Thrasher	<i>Toxostoma rufum</i>			
European Starling	<i>Sturnus vulgaris</i>			
Cedar Waxwing	<i>Bombycilla cedrorum</i>			
Nashville Warbler	<i>Oreothlypis ruficapilla</i>			
Yellow Warbler	<i>Setophaga petechia</i>			
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>			
Magnolia Warbler	<i>Setophaga magnolia</i>			
Pine Warbler	<i>Setophaga pinus</i>			
American Redstart	<i>Setophaga ruticilla</i>			
Northern Waterthrush	<i>Parkesia noveboracensis</i>			
Mourning Warbler	<i>Geothlypis philadelphia</i>			
Common Yellowthroat	<i>Geothlypis trichas</i>			
Eastern Towhee	<i>Pipilo erythrophthalmus</i>			
Chipping Sparrow	<i>Spizella passerina</i>			
Field Sparrow	<i>Spizella pusilla</i>			
Savannah Sparrow	<i>Passerculus sandwichensis</i>		SC	SC

Common Name	Scientific Name	SARO	COSEWIC	SARA
Song Sparrow	<i>Melospiza melodia</i>			
Swamp Sparrow	<i>Melospiza georgiana</i>			
Scarlet Tanager	<i>Piranga olivacea</i>			
Northern Cardinal	<i>Cardinalis cardinalis</i>			
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>			
Indigo Bunting	<i>Passerina cyanea</i>			
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	THR
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	THR
Common Grackle	<i>Quiscalus quiscula</i>			
Brown-headed Cowbird	<i>Molothrus ater</i>			
Orchard Oriole	<i>Icterus spurius</i>			
Baltimore Oriole	<i>Icterus galbula</i>			
House Finch	<i>Haemorhous mexicanus</i>			
Pine Siskin	<i>Spinus pinus</i>			
American Goldfinch	<i>Spinus tristis</i>			
House Sparrow	<i>Passer domesticus</i>			

Table 4: MNR Fish On-Line

Common Name	Scientific Name	SARO	COSEWIC	SARA
Black Crappie	<i>Pomoxis nigromaculatus</i>	NAR	NAR	Not Listed
Bluegill	<i>Lepomis macrochirus</i>	NAR	NAR	Not Listed
Brook Trout	<i>Salvelinus fontinalis</i>	NAR	NAR	Not Listed
Brown Bullhead	<i>Ameiurus nebulosus</i>	NAR	NAR	Not Listed
Brown Trout	<i>Salmo trutta</i>	NAR	NAR	Not Listed
Common Carp	<i>Cyprinus carpio</i>	NAR	NAR	Not Listed
Freshwater Drum	<i>Aplodinotus grunniens</i>	NAR	NAR	Not Listed
Lake Trout	<i>Salvelinus namaycush</i>	NAR	NAR	Not Listed
Largemouth Bass	<i>Micropterus salmoides</i>	NAR	NAR	Not Listed
Pumpkinseed	<i>Lepomis gibbosus</i>	NAR	NAR	Not Listed
Rainbow Smelt	<i>Osmerus mordax</i>	NAR	NAR	Not Listed
Rainbow Trout	<i>Oncorhynchus mykiss</i>	NAR	NAR	Not Listed
Rock Bass	<i>Ambloplites rupestris</i>	NAR	NAR	Not Listed
Smallmouth Bass	<i>Micropterus dolomieu</i>	NAR	NAR	Not Listed
White Bass	<i>Morone chrysops</i>	NAR	NAR	Not Listed
White Perch	<i>Morone americana</i>	NAR	NAR	Not Listed

Common Name	Scientific Name	SARO	COSEWIC	SARA
White Sucker	<i>Catostomus commersonii</i>	NAR	NAR	Not Listed
Yellow Perch	<i>Perca flavescens</i>	NAR	NAR	Not Listed

Table 5: Ontario Butterfly Atlas 10 km x 10 km Square: 17PJ23

Common Name	Scientific Name	SARO	COSEWIC	SARA
Silver-spotted Skipper	<i>Epargyreus clarus</i>			
Long-Tailed Skipper	<i>Urbanus proteus</i>			
Northern Cloudywing	<i>Thorybes pylades</i>			
Dreamy Duskywing	<i>Erynnis icelus</i>			
Juvenal's Duskywing	<i>Erynnis juvenalis</i>			
Mottled Duskywing	<i>Erynnis martialis</i>	END	END	No status
Funereal Duskywing	<i>Erynnis funeralis</i>			
Columbine Duskywing	<i>Erynnis lucilius</i>			
Wild Indigo Duskywing	<i>Erynnis baptisiae</i>			
Common Checkered Skipper	<i>Pyrgus communis</i>			
Common Sootywing	<i>Pholisora catullus</i>			
Least Skipper	<i>Ancyloxypha numitor</i>			
European Skipper	<i>Thymelicus lineola</i>			
Fiery Skipper	<i>Hylephila phyleus</i>			
Leonard's Skipper	<i>Hesperia leonardus</i>			
Peck's Skipper	<i>Polites peckius</i>			
Tawny-edged Skipper	<i>Polites themistocles</i>			
Crossline Skipper	<i>Polites origenes</i>			
Long Dash Skipper	<i>Polites mystic</i>			
Northern Broken-Dash	<i>Wallengrenia egeremet</i>			
Little Glassywing	<i>Pompeius verna</i>			
Sachem	<i>Atalopedes campestris</i>			
Delaware Skipper	<i>Anatrytone logan</i>			
Hobomok Skipper	<i>Poanes hobomok</i>			
Broad-winged Skipper	<i>Poanes viator</i>			
Dion Skipper	<i>Euphyes dion</i>			
Black Dash	<i>Euphyes conspicua</i>			
Two-spotted Skipper	<i>Euphyes bimacula</i>			
Dun Skipper	<i>Euphyes vestris</i>			
Ocola Skipper	<i>Panoquina ocola</i>			

Common Name	Scientific Name	SARO	COSEWIC	SARA
Pipevine Swallowtail	<i>Battus philenor</i>			
Zebra Swallowtail	<i>Eurytides marcellus</i>			
Black Swallowtail	<i>Papilio polyxenes</i>			
Eastern Giant Swallowtail	<i>Papilio cresphontes</i>			
Eastern Tiger Swallowtail	<i>Papilio glaucus</i>			
Midsummer Tiger Swallowtail	<i>Papilio canadensis</i> <i>X glaucus</i>			
Canadian Tiger Swallowtail	<i>Papilio canadensis</i>			
Spicebush Swallowtail	<i>Papilio troilus</i>			
Checkered White	<i>Pontia protodice</i>			
Mustard White	<i>Pieris oleracea</i>			
Cabbage White	<i>Pieris rapae</i>			
Clouded Sulphur	<i>Colias philodice</i>			
Orange Sulphur	<i>Colias eurytheme</i>			
Cloudless Sulphur	<i>Phoebis sennae</i>			
Little Yellow	<i>Pyrisitia lisa</i>			
Harvester	<i>Feniseca tarquinius</i>			
American Copper	<i>Lycaena phlaeas</i>			
Bronze Copper	<i>Lycaena hyllus</i>			
Acadian Hairstreak	<i>Satyrium acadica</i>			
Coral Hairstreak	<i>Satyrium titus</i>			
Edwards' Hairstreak	<i>Satyrium edwardsii</i>			
Banded Hairstreak	<i>Satyrium calanus</i>			
Hickory Hairstreak	<i>Satyrium</i> <i>caryaevorus</i>			
Striped Hairstreak	<i>Satyrium liparops</i>			
Eastern Pine Elfin	<i>Callophrys niphon</i>			
Gray Hairstreak	<i>Strymon melinus</i>			
Marine Blue	<i>Leptotes marina</i>			
Eastern Tailed Blue	<i>Cupido comyntas</i>			
Northern Azure	<i>Celastrina lucia</i>			
Summer Azure	<i>Celastrina neglecta</i>			
Azure sp.	<i>Celastrina sp.</i>			
Silvery Blue	<i>Glaucopsyche</i> <i>lygdamus</i>			
Karner Blue	<i>Plebejus melissa</i> <i>samuelis</i>	EXP	EXP	EXP
American Snout	<i>Libytheana</i> <i>carinenta</i>			
Variegated Fritillary	<i>Euptoieta claudia</i>			

Common Name	Scientific Name	SARO	COSEWIC	SARA
Great Spangled Fritillary	<i>Speyeria cybele</i>			
Aphrodite Fritillary	<i>Speyeria aphrodite</i>			
Regal Fritillary	<i>Speyeria idalia</i>			
Atlantis Fritillary	<i>Speyeria atlantis</i>			
Silver-bordered Fritillary	<i>Boloria selene</i>			
Meadow Fritillary	<i>Boloria bellona</i>			
Silvery Checkerspot	<i>Chlosyne nycteis</i>			
Pearl Crescent	<i>Phyciodes tharos</i>			
Northern Crescent	<i>Phyciodes cocyta</i>			
Baltimore Checkerspot	<i>Euphydryas phaeton</i>			
Question Mark	<i>Polygonia interrogationis</i>			
Eastern Comma	<i>Polygonia comma</i>			
Gray Comma	<i>Polygonia progne</i>			
Compton Tortoiseshell	<i>Nymphalis l-album</i>			
Mourning Cloak	<i>Nymphalis antiopa</i>			
Milbert's Tortoiseshell	<i>Aglais milberti</i>			
American Lady	<i>Vanessa virginiensis</i>			
Painted Lady	<i>Vanessa cardui</i>			
Red Admiral	<i>Vanessa atalanta</i>			
Common Buckeye	<i>Junonia coenia</i>			
White Admiral	<i>Limenitis arthemis arthemis</i>			
Red-spotted Purple	<i>Limenitis arthemis astyanax</i>			
Viceroy	<i>Limenitis archippus</i>			
Hackberry Emperor	<i>Asterocampa celtis</i>			
Northern Pearly-Eye	<i>Lethe anthedon</i>			
Eyed Brown	<i>Lethe eurydice</i>			
Appalachian Brown	<i>Lethe appalachia</i>			
Little Wood-Satyr	<i>Megisto cymela</i>			
Common Ringlet	<i>Coenonympha tullia</i>			
Common Wood-Nymph	<i>Cercyonis pegala</i>			
Monarch	<i>Danaus plexippus</i>	SC	END	SC

Appendix B

Photo Appendix



**Photograph B-1: View of Mr. Christie site looking northwest (Unit 22)
April 17, 2020**



**Photograph B-2: View of grassed area within Mr. Christie site looking south (Unit 21)
April 17, 2020**



Photograph B-3: View of the grassed area at Mr. Christie site looking east (Unit 20)
April 17, 2020



Photograph B-4: View of area south of the Gardiner Expressway looking southeast (Unit 18)
April 17, 2020



**Photograph B-5: View of the small cattail marsh looking north (Unit 3)
April 17, 2020**



**Photograph B-6: View of the forested area north of the rail corridor looking west (Unit 2)
April 17, 2020**



Photograph B-7: View of Mimico Creek looking north (Unit 1)
April 17, 2020



Photograph B-8: View of the forested area southwest of Mimico Creek looking north (Unit 4)
April 17, 2020



Photograph B-9: View of the forested area south of the rail corridor on the bank of Mimico Creek looking south (Unit 8), April 17, 2020



Photograph B-10: View of the fenced parkland area south of the rail corridor looking southwest (Unit 13), April 17, 2020



**Photograph B-11: View of woodland south of the rail corridor looking north (Unit 11)
April 17, 2020**



**Photograph B-12: View of the potential fish barrier at the downstream end of the concrete channel
beneath the Gardiner Expressway (Unit 1), April 17, 2020**



**Photograph B-13: View of sand deposits along the east bank of Mimico Creek
April 17, 2020 (Unit 23)**

Appendix C

Vascular Plant List

Table C-1: Vascular Plant List

Common Name (Nature Serve Explorer - June 2013 or VASCAN 2015) (MNRF name if different - for SAR and select common species, 2015)	Accepted Name (Nature Serve Explorer - June 2013)	cc ¹	cw ¹	G-Rank ²	S-Rank ³	COSEWIC ⁴	MNRF ⁵	SARA Status ⁶	City of Toronto (Varga et al., 2000) ⁷	Toronto Region Conservation Rank (2003) ⁸	Schedule ⁶	Native Status
Alfalfa	<i>Medicago sativa</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
American Elm	<i>Ulmus americana</i>	3	-3	G5	S5	-	-	-	X	L5	-	N
Barnyard Grass	<i>Echinochloa crusgalli</i>	*	-3	GNR	SNA	-	-	-	X	L+	-	I
Basswood	<i>Tilia americana</i>	4	3	G5	S5	-	-	-	X	L5	-	N
Bird's Foot Trefoil	<i>Lotus corniculatus</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Bitter Dock	<i>Rumex obtusifolius</i>	*	-3	GNR	SNA	-	-	-	X	L+	-	I
Bittersweet Nightshade	<i>Solanum dulcamara</i>	*	0	GNR	SNA	-	-	-	X	L+	-	I
Black Ash	<i>Fraxinus nigra</i>	7	-4	G5	S4	-	-	-	R ²	L4	-	N
Black-Eyed Susan	<i>Rudbeckia hirta</i>	0	3	G5	S5	-	-	-	X	L4	-	N
Black Locust	<i>Robinia pseudoacacia</i>	*	4	G5	SNA	-	-	-	X	L+	-	I
Black Medic	<i>Medicago lupulina</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Black Walnut	<i>Juglans nigra</i>	5	3	G5	S4?	-	-	-	X	L5	-	N
Black Willow	<i>Salix nigra</i>	6	-5	G5	S4	-	-	-	R	L3	-	N
Bouncing Bet	<i>Saponaria officinalis</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Broad-Leaved Plantain	<i>Plantago major</i>	*	3	G5	SNA	-	-	-	X	L+	-	I
Brown Knapweed	<i>Centaurea jacea</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Bull Thistle	<i>Cirsium vulgare</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Canada Fleabane	<i>Erigeron canadensis</i>	0	3	G5	S5	-	-	-	X	L5	-	N
Canada Goldenrod	<i>Solidago canadensis</i>	1	3	G5	S5	-	-	-	X	L5	-	N
Canada Thistle	<i>Cirsium arvense</i>	*	3	G5	SNA	-	-	-	X	L+	-	I

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Chicory	<i>Cichorium intybus</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Choke Cherry	<i>Prunus virginiana</i>	2	1	G5TQ?	S5	-	-	-	X	L5	-	N
Common Buckthorn	<i>Rhamnus cathartica</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Common Burdock	<i>Arctium minus</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Common Dandelion	<i>Taraxacum officinale</i>	*	3	G5	SNA	-	-	-	X	L+	-	I
Common Milkweed	<i>Asclepias syriaca</i>	*	5	G5	S5	-	-	-	X	L5	-	N
Common Mullein	<i>Verbascum thapsus</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Common Ragweed	<i>Ambrosia artemisiifolia</i>	0	3	G5	S5	-	-	-	X	L5	-	N
Common St. John's Wort	<i>Hypericum perforatum</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Corn Flower	<i>Centaurea cyanus</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Cottonwood	<i>Populus deltoides</i>	4	-1	G5T5	S5	-	-	-	X	L5	-	N
Cow Parsnip	<i>Heracleum sphondylium</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Crack Willow	<i>Salix x fragilis</i>	*	0	GNR	SNA	-	-	-	X	L+	-	I
Creeping Yellow-Cress	<i>Rorippa sylvestris</i>	*	-5	G5	SNA	-	-	-	X	L+	-	I
Crown Vetch	<i>Securigera varia</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Dame's Rocket	<i>Hesperis matronalis</i>	*	3	G4G5	SNA	-	-	-	X	L+	-	I
Day Lily	<i>Emerocallis fulva</i>	*	5	GNA	SNA	-	-	-	X	L+	-	I
Dog Strangling Vine	<i>Cynanchum rossicum</i>	*	5	GNR	SE5	-	-	-	X	L+	-	I
Eastern Cottonwood	<i>Populus deltoides</i>	4	0	G5	S5	-	-	-	X	L5	-	N
Eastern White Cedar	<i>Thuja occidentalis</i>	4	-3	G5	S5	-	-	-	X	L4	-	N
Elecampane	<i>Inula helenium</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
European Mountain Ash	<i>Sorbus aucuparia</i>	*	5	G5	SNA	-	-	-	X	L+	-	I

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Everlasting Pea	<i>Lathyrus latifolius</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
False Solomon's Seal	<i>Maianthemum racemosum</i>	4	3	G5	S5	-	-	-	X	L5	-	N
Field Bindweed	<i>Convolvulus arvensis</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Field Horsetail	<i>Equisetum arvense</i>	0	0	G5	S5	-	-	-	X	L5	-	N
Field Peppergrass	<i>Lepidium campestre</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Field Sow Thistle	<i>Sonchus arvensis</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Forsythia	<i>Forsythia spp.</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Freeman's Maple	<i>Acer x freemanii</i>	6	-5	GNA	SNA	-	-	-	X	L4	-	N
Garden Orache	<i>Atriplex hortensis</i>	*	0	GNR	SNA	-	-	-	X	L+	-	I
Garlic Mustard	<i>Alliaria petiolata</i>	*	0	GNR	SNA	-	-	-	X	L+	-	I
Goat's-Beard	<i>Tragopogon dubius</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Green Ash	<i>Fraxinus pennsylvanica</i>	3	-3	G5	S4	-	-	-	X	L5	-	N
Green Foxtail	<i>Setaria viridis</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Hedge Parsley	<i>Torilis japonica</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Herb Robert	<i>Geranium robertianum</i>	2	3	G5	S5	-	-	-	X	L+?	-	I
Hispid Buttercup	<i>Ranunculus hispidus</i>	8	0	G5	S3	-	-	-	R	LX	-	N
Hybrid Cattail	<i>Typha glauca</i>	1	-5	G5	S5	-	-	-	X	L+	-	I
Japanese Knotweed	<i>Reynoutria japonica var. japonica</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Jewelweed	<i>Impatiens capensis</i>	4	-3	G5	S5	-	-	-	X	L5	-	N
Kentucky Bluegrass	<i>Poa pratensis</i>	0	3	G5	S5	-	-	-	X	L+	-	I
King Devil	<i>Hieracium caespitosum</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Lamb's Quarters	<i>Chenopodium album</i>	*	3	G5	SNA	-	-	-	X	L+	-	I

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Lilac	<i>Syringa vulgaris</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Little Leaf Linden	<i>Tilia cordata</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Manitoba Maple	<i>Acer negundo</i>	*	-2	G5	S5	-	-	-	X	L+?	-	I
Mossy Stonecrop	<i>Sedum acre</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Motherwort	<i>Leonurus cardiaca</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Multiflora Rose	<i>Rosa multiflora</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Narrow-Leaved Plantain	<i>Plantago lanceolata</i>	*	3	G5	SNA	-	-	-	X	L+	-	I
Northern Blue Violet	<i>Viola septentrionalis</i>	4	0	G5	S5	-	-	-	X	L5	-	N
Norway Maple	<i>Acer platanoides</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Orchard Grass	<i>Dactylis glomerata</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Ox-Eye Daisy	<i>Leucanthemum vulgare</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Path Rush	<i>Juncus tenuis</i>	0	0	G5	S5	-	-	-	X	L5	-	N
Philadelphia Fleabane	<i>Erigeron philadelphicus</i>	1	-3	G5	S5	-	-	-	X	L5	-	N
Phragmites	<i>Phragmites australis</i>	0	-3	G5	S4?	-	-	-	X	L+	-	I
Purslane	<i>Portulaca oleracea</i>	*	3	GU	SNA	-	-	-	X	L+	-	I
Pussy Willow	<i>Salix discolor</i>	3	-3	G5	S5	-	-	-	X	L4	-	N
Red Clover	<i>Trifolium pratense</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Red Maple	<i>Acer rubrum</i>	4	0	G5	S5	-	-	-	X	L4	-	N
Red Oak	<i>Quercus rubra</i>	6	3	G5	S5	-	-	-	X	L4	-	N
Red Osier Dogwood	<i>Cornus sericea</i> spp. <i>sericea</i>	2	-3	G5	S5	-	-	-	X	L5	-	N
Red Top	<i>Agrostis alba</i>	*	-3	G4G5	SNA	-	-	-	X	L+	-	I
Reed Canary Grass	<i>Phalaris arundinacea</i>	0	-3	G5	S5	-	-	-	X	L+?	-	I

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Riverbank Grape	<i>Vitis riparia</i>	0	0	G5	S5	-	-	-	X	L5	-	I
Rough Cinquefoil	<i>Potentilla norvegica</i>	0	0	G5	S5	-	-	-	X	L+?	-	I
Russian Olive	<i>Elaeagnus angustifolia</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Scentless Chamomile	<i>Tripleurospermum perforata</i>	*	0	GNR	SNA	-	-	-	X	L+	-	I
Siberian Elm	<i>Ulmus pumila</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Siberian Squill	<i>Scilla siberica</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Smooth Brome	<i>Bromus inermis</i>	*	5	G5	SNA	-	-	-	X	L+	-	I
Softstem Bulrush	<i>Schoenoplectus tabernaemontani</i>	5	-5	G5	S5	-	-	-	X	L4	-	N
Staghorn Sumac	<i>Rhus typhina</i>	1	5	G5	S5	-	-	-	X	L5	-	N
Stinging Nettle	<i>Urtica dioica</i>	2	0	G5	S5	-	-	-	X	L+	-	I
Sulphur Cinquefoil	<i>Potentilla recta</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Sweet Brier	<i>Rosa rubiginosa</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Tall Goldenrod	<i>Solidago altissima</i>	1	3	G5	S5	-	-	-	X	L5	-	N
Tansy	<i>Tanacetum vulgare</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Tartarian Honeysuckle	<i>Lonicera tatarica</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Teasel	<i>Dipsacus fullonum</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Timothy	<i>Phleum pratense</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Trembling Aspen	<i>Populus tremuloides</i>	2	0	G5	S5	-	-	-	X	L5	-	N
Tufted Vetch	<i>Vicia cracca</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Viper's Bugloss	<i>Echium vulgare</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	6	3	G5	S4?	-	-	-	X	L5	-	N
White Ash	<i>Fraxinus americana</i>	4	3	G5	S4	-	-	-	X	L5	-	N

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White Clover	<i>Trifolium repens</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
White Spruce	<i>Picea glauca</i>	6	3	G5	S5	-	-	-	X+	L3	-	N
White Sweet-Clover	<i>Melilotus alba</i>	0	3	G5	SNA	-	-	-	X	L+	-	I
Wild Asparagus	<i>Asparagus officinalis</i>	*	3	G5?	SNA	-	-	-	X	L+	-	I
Wild Carrot	<i>Daucus Carota</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Wild Columbine	<i>Aquilegia canadensis</i>	5	3	G5	S5	-	-	-	X	L4	-	N
Wild Cucumber	<i>Echinocystis lobata</i>	3	-3	G5	S5	-	-	-	X	L5	-	N
Wild Rye	<i>Elymus virginicus</i>	5	-3	G5	S5	-	-	-	X	L5	-	N
Yarrow	<i>Achillea millefolium</i>	*	3	G5	SNA	-	-	-	X	L+	-	I

Plant List Legend

General

Cells with a '-' indicate there is no status under those categories for those species.

Cells in the CC column with a '*' indicate non-native / introduced species on Ontario. Non-native species are not assigned a CC value.

Accepted Name and Author

Accepted Name and Author were updated primarily using NatureServe Explorer (Updated June 2013), in combination with the Integrated Taxonomic Information System (ITIS), United States Department of Agriculture (USDA) Plants Database, and the New York Flora Atlas.

NatureServe Explorer: <http://www.natureserve.org/explorer/index.htm>

ITIS: <http://www.itis.gov/>

USDA Plants: <http://plants.usda.gov/java/>

New York Flora Atlas: <http://newyork.plantatlas.usf.edu/Default.aspx>

¹Coefficient of Conservatism and Coefficient of Wetness

CC: Coefficient of Conservatism. Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters.

CW: Coefficient of Wetness. Value between 5 and –5. A value of –5 is assigned to Obligate Wetland (OBL) and 5 to Obligate Upland (UPL), with intermediate values assigned to the remaining categories.

²G-Rank (Global)

(Global Status from MNR Biodiversity Explorer September 2012)

Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

Global (G) Conservation Status Ranks

G1: Extremely rare – usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2: Very rare – usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.

- G3: Rare to uncommon – usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4: Common – usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5: Very common – demonstrably secure under present conditions.

Variant Ranks

- G#G#: Range Rank – A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).
- GU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible (when the range of uncertainty is three consecutive ranks or less), a range rank (e.g., G2G3) should be used to delineate the limits (range) of uncertainty.
- GNR: Unranked – Global rank not yet assessed
- GNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

Rank Qualifiers

- ?: Inexact Numeric Rank – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.
- Q: Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower priority (numerically higher) conservation status rank. The “Q” modifier is only used at a global level and not at a national or subnational level.

- C: Captive or Cultivated Only – Taxon or ecosystem at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population or ecosystem restoration, not yet established. The “C” modifier is only used at a global level and not at a national or subnational level. Possible ranks are GXC or GHC. This is equivalent to “Extinct” in the Wild (EW) in IUCN’s Red List terminology (IUCN 2001).

³S-Ranks (Provincial)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

(Provincial Status from MNR Biodiversity Explorer September 2012)

- S1: Critically Imperiled – Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
- S2: Imperiled – Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
- S3: Vulnerable – Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4: Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5: Secure – Common, widespread, and abundant in the nation or state/province.
- S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

- SX: Presumed Extirpated – Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
- SH: Possibly Extirpated (Historical) – Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.
- SE: Species is considered exotic in Ontario
- SNR: Unranked – Nation of state/province conservation status not yet assessed.
- SU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities.¹

⁴COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

(federal status from COSEWIC November 2012)

- EXT: Extinct – A species that no longer exists.
- EXP: Extirpated – A species no longer existing in the wild in Canada, but occurring elsewhere.
- END: Endangered – A species facing imminent extirpation or extinction.

¹ Added on June 4, 2013 from <http://nhic.mnr.gov.on.ca/glossary/srank.cfm>

THR: Threatened – A species likely to become endangered if limiting factors are not reversed.

SC: Special Concern (formerly vulnerable) – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

NAR: Not At Risk – A species that has been evaluated and found to be not at risk of extinction given the current circumstances.

DD: Data Deficient (formerly Indeterminate) – Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.

Implied COSEWIC Status Notations (Status Due to Taxonomic Relationships)²

value (Flagged Value) – The taxon itself is not named in the Canadian Species at Risk list, however, it does have status as a result of its taxonomic relationship to a named entity. For example, if a species has a COSEWIC status of “threatened”, then by default, all of its recognized subspecies that occur in Canada also have a threatened status. The subspecies in this example would have the value “T₍₂₎” under COSEWIC. Likewise, if all of a species’ infraspecific taxa occurring in Canada have the same COSEWIC status, then that status appears in the entry for the “full” species as well. In this case, if the species name is not mentioned in the Canadian Species at Risk list, the status appears with a flag ₍₂₎ in NatureServe Explorer.

value, value: (Combination values with flags) – The taxon itself is not named in the Canadian Species at Risk list, however, all of its infraspecific taxa occurring in Canada do have status but two or more of the taxa do not have the same status. In this case, a combination of statuses shown with a flag ₍₇₎ indicates the statuses that apply to infraspecific taxa or populations within this taxon.

PS: Indicates “partial status” – in only a portion of the species’ range in Canada. Typically indicated for a “full” species where at least one but not all of a species’ infraspecific taxa or populations has COSEWIC status.

² Added on June 5, 2013 from <http://www.natureserve.org/explorer/statusca.htm>

PSvalue: Indicates “partial status” – status in only a portion of the species’ range. The value of that status appears because the entity with status (usually a population defined by geopolitical boundaries within Canada) does not have an individual entry in NatureServe Explorer. Information about the entity with status can be found in reports for the associated species.

⁵MNRF (Ministry of Natural Resources and Forestry)

(Provincial status from MNRF)

The provincial review process is implemented by the MNRF's Committee on the Status of Species at Risk in Ontario (COSSARO).

EXT: Extinct – A species that no longer exists anywhere.

EXP: Extirpated – A species that no longer exists in the wild in Ontario but still occurs elsewhere.

END: Endangered – A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act (ESA).

THR: Threatened – A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SC: Special Concern (formerly Vulnerable) – A species with characteristics that make it sensitive to human activities or natural events.

NAR: Not at Risk – A species that has been evaluated and found to be not at risk.

DD: Data Deficient (formerly Indeterminate) – A species for which there is insufficient information for a provincial status recommendation.

⁶ SARA (Species at Risk Act) Status and Schedule

The Act establishes Schedule 1, as the official list of species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed species are implemented.

EXT: Extinct – A species that no longer exists.

EXP: Extirpated – A species that no longer exists in the wild in Canada, but exists elsewhere in the wild.

END: Endangered – A species that is facing imminent extirpation or extinction.

THR: Threatened – A species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

SC: Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Schedule 1: is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.

Schedule 2: species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

Schedule 3: species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of SARA. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Species at Risk.

Government of Canada. Species at Risk Public Registry. Website: [http://www.sararegistry.gc.ca/default_e.cfm September 27, 2012]

Glossary: http://www.sararegistry.gc.ca/about/glossary/default_e.cfm#e

Species Index A-Z: http://www.sararegistry.gc.ca/sar/index/default_e.cfm

Species Listing by Schedule: http://www.sararegistry.gc.ca/sar/listing/default_e.cfm

Regional Status

7Halton, Peel, Toronto, York, Durham, GTA, 6E7, 7E4

The Distribution and Status of the Vascular Plants of the Greater Toronto Area (Varga et. al. 2000).

"Plant rarity is based on the number of locations for a native plant species" and also takes into account native species restricted to specialized rare habitats. For the Greater Toronto Area column, "A species is considered rare in the Greater Toronto Area if it is rare or uncommon in a least four of... Halton, Peel, Toronto, York, and Durham".

Codes are defined as follows:

X: Present

U: Uncommon native species

R: Rare native species

R#: Number of stations for a rare native species

E: Extirpated native species

+ or I: Introduced species

X+: Introduced in municipality

SR: Sight record

LR: Literature record

⁸Toronto and Region Conservation Authority:

From: (TRCA 2003)

L rank (Local Rank) – A rank assigned by TRCA to a species, vegetation community, or habitat patch which describes its rank and level of conservation concern in the TRCA Region. Species of concern, according to the TRCA methodology are any species with a local rank of L1 to L3, and some particularly sensitive species with a rank of L4. They are generally species which are disappearing in the landscape, primarily as a result of land use changes. For flora the ranks are defined as follows (TRCA 2007).

Codes are defined as follows:

- L1: Of concern regionally; almost certainly rare in TRCA jurisdiction; generally occur in high-quality natural areas, in natural matrix; unable to withstand disturbance.
- L2: Of concern regionally; probably rare in TRCA jurisdiction; generally occur in high-quality natural areas, in natural matrix; unable to withstand disturbance.
- L3: Of concern regionally; generally secure in natural matrix; able to withstand minor disturbance.
- L4: Of concern in urban matrix; generally secure in rural matrix; able to withstand some disturbance.
- L5: Not of concern; generally secure throughout jurisdiction, including urban matrix; able to withstand high levels of disturbance.
- LX: Extirpated from the TRCA region with remote chance of rediscovery. Presumably highly sensitive. Not scored.
- LH: Hybrid between two native species. Usually not scored unless highly stable and behaves like a species.

L+: Exotic. Not native to TRCA jurisdiction. Includes hybrids between a native species and an exotic. Not scored.

L+?: Origin uncertain or disputed (i.e., may or may not be native). Not scored.

Native Status

N = Native to Ontario

I = Introduced to Ontario

Appendix D

Significant Wildlife Habitat Criteria Schedule

Appendix D: SWH Evaluation

This evaluation is based on the Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (MNRF January 2015). The following text and tables are from that document, but include an additional ‘evaluation’ column, with discussion of site-specific attributes within the Study Area.

SCHEDULE 7E: IDENTIFICATION OF Significant Wildlife Habitat

This schedule is designed to provide the recommended criteria for identifying Significant Wildlife Habitat (SWH) within Ecoregion 7E ^{ccxvi}. Tables D-1 through D-4 within the Schedules provide guidance for SWH designation for the four categories of SWH outlined in the Significant Wildlife Habitat Technical Guide and its Appendices ^{cxlviii, cxlix}. Table D-5 contains and provides descriptions for exceptions criteria for ecoregional SWH which will be identified at an ecodistrict scale ^{ccxvi}. Exceptions occur when criteria for a specific habitat are different within an ecodistrict compared to the remainder of an ecoregion or if a habitat only occurs within a restricted area of the ecoregion.

The schedules, including description of wildlife habitat, wildlife species, and the criteria provided for determining SWH, are based on science and expert knowledge. The ELC Ecosite codes are described using the Ecological Land Classification (ELC) for Southern Ontario ^{lxxviii}. The information within these schedules will require periodic updating to keep pace with changes to wildlife species status in the Species at Risk in Ontario (SARO) list, or as new scientific information pertaining to wildlife habitats becomes available. Therefore, MNRF will occasionally need to review and update these schedules and provide addenda. A reference document for all SWH is found after the schedules and includes citations for all ecoregional schedules. Each citation used to assist with the criteria for SWH will be indicated by a roman numeric symbol. Where no reference exists, MNRF expert opinion was used for determination of criteria, this symbol “©” represents when MNRF expert opinion was utilized to develop defining criteria.

Criteria for Significant Wildlife Habitat in Ecoregion 7E

Seasonal Concentration Areas of Animals

Seasonal concentration areas are areas where wildlife species occur annually in aggregations at certain times of the year. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of seasonal concentration areas include deer wintering areas, breeding bird colonies and hibernation sites for reptiles, amphibians and some mammals ^{cxlviii}. Table D-1 outlines what wildlife habitats and defining criteria that are considered for seasonal concentration areas within Ecoregion 7E.

Table D-1 Seasonal Concentration Areas of Animals.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Stopover and Staging Areas (Terrestrial) Rationale: Habitat important to migrating waterfowl	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. - Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.	Fields with sheet water during Spring (mid-March to May). <ul style="list-style-type: none">Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowlAgricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available ^{cxlvi} <u>Information Sources</u> <ul style="list-style-type: none">Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrenceReports and other information available from Conservation AuthoritiesSites documented through waterfowl planning processes (eg., EHJV implementation plan)Field Naturalist ClubsDucks Unlimited CanadaNatural Heritage Information Centre (NHIC)Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” ^{ccxi} <ul style="list-style-type: none">Any mixed species aggregations of 100[Ⓔ] or more individuals requiredThe flooded field ecosite habitat plus a 100-300m radius, dependant on local site conditions and adjacent land use is the significant wildlife habitatAnnual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates)SWH MISTIndex #7 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">CUM1 and CUT1 ecosite codes are present are present within the Study AreaNo Agricultural fields with waste grains or fields with sheet water during spring (mid-March to May)None of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present
Waterfowl Stopover and Staging Areas (Aquatic) Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	American Black Duck American Wigeon Black Scoter Blue-winged Teal Brant Bufflehead Cackling Goose Canada Goose Canvasback Common Goldeneye Common Merganser Gadwall Greater Scaup Green-winged Teal Hooded Merganser Lesser Scaup Long-tailed Duck Northern Pintail Northern Shoveler Red-breasted Merganser Redhead Ring-necked duck Ruddy Duck Ruddy Duck Snow Goose	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none">Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water) <u>Information Sources</u> <ul style="list-style-type: none">Environment CanadaNaturalist clubs often are aware of staging/stopover areas.OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging.Sites documented through waterfowl planning processes (e.g., EHJV implementation plan)Ducks Unlimited projectsElement occurrence specification by Nature Serve: http://www.natureserve.orgNatural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of: <ul style="list-style-type: none">Aggregations of 100[Ⓔ] or more of listed species for 7 days[Ⓔ], results in > 700 waterfowl use daysAreas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH^{cxlix}The combined area of the ELC ecosites and a 100m radius area is the SWH^{cxlviii}Wetland area and shorelines associated with sites identified within the SWHTG^{cxlviii}Appendix Kcxlix are significant wildlife habitatEvaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded)SWH MIST^{cxlix} Index #7 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">MAS2 ecosite is present within Study AreaMimico Creek (watercourse) is present within the Study Area, however no aquatic vegetation is presentNo ponds, lakes, bays, coastal inlets used during migration are presentNone of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
	Surf Scoter White-winged Scoter				
Shorebird Migratory Stopover Area Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use	American Golden-Plover Baird's Sandpiper Black-bellied Plover Dunlin Greater Yellowlegs Hudsonian Godwit Least Sandpiper Lesser Yellowlegs Marbled Godwit Pectoral Sandpiper Purple Sandpiper Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Semipalmated Plover Semipalmated Sandpiper Short-billed Dowitcher Solitary Sandpiper Spotted Sandpiper Stilt Sandpiper White-rumped Sandpiper	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	<ul style="list-style-type: none">Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitatsGreat Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to OctoberSewage treatment ponds and storm water ponds do not qualify as a SWH <u>Information Sources</u> <ul style="list-style-type: none">Western hemisphere shorebird reserve networkCanadian Wildlife Service (CWS) Ontario Shorebird SurveyBird Studies CanadaOntario NatureLocal birders and naturalist clubsNHIC Shorebird Migratory Concentration Area	<p>Studies confirming:</p> <ul style="list-style-type: none">Presence of 3 or more of listed species and > 1000^I shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period)Whimbrel stop briefly (<24hrs) during spring migration, any site with >100^I Whimbrel used for 3 years or more is significantThe area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area ^{cxlviii}Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}SWH MIST^{cxlix} Index #8 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">None of the ELC ecosite codes present within Study AreaNo Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats are presentNone of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present
Raptor Wintering Area Rationale: Sites used by multiple species, a high number of individuals and used annually are most significant	American Kestrel Northern Harrier Red-tailed Hawk Rough-legged Hawk Snowy Owl Special Concern: Bald Eagle Short-eared Owl	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent	<ul style="list-style-type: none">The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptorsRaptor wintering (hawk/owl) sites need to be > 20 ha ^{cxlviii, cxlix} with a combination of forest and upland.^{xvi, xvii, xviii, xix, xx, xxi}Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands ^{cxlix}Field area of the habitat is to be wind swept with limited snow depth or accumulationEagle sites have open water and large trees and snags available for roosting^{cxlix} <u>Information Sources:</u> <ul style="list-style-type: none">OMNR Ecologist or BiologistNaturalist clubsNatural Heritage Information Centre (NHIC) Raptor Winter Concentration AreaData from Bird Studies CanadaResults of Christmas Bird CountsReports and other information available from Conservation Authorities	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none">One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species[Ⓔ]To be significant a site must be used regularly (3 in 5 years)^{cxlix} for a minimum of 20 days by the above number of birds[Ⓔ]The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area[Ⓔ]Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}SWH MIST^{cxlix} Index #10 and #11 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the forest ELC ecosite codes (FOD) is present within Study AreaUpland ecosite codes, CUM, CUW and CUT, are present within the Study AreaThe combined areas do not meet the size requirements (>15ha or >20ha)One Red-tailed Hawk was incidentally observed within the Study AreaNo stick nests were observed during the April 29, 2020 site visit Conclusion: no candidate SWH or confirmed SWH is present

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		to lakes with open water (hunting area).			
Bat Hibernacula Rationale: Bat hibernacula are rare habitats in all Ontario landscapes	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	<ul style="list-style-type: none">Hibernacula may be found in caves, mine shafts, underground foundations and KarstsActive mine sites should not be considered as SWHThe locations of bat hibernacula are relatively poorly known <u>Information Sources</u> <ul style="list-style-type: none">OMNRF for possible locations and contact for local expertsNatural Heritage Information Centre (NHIC) Bat HibernaculumMinistry of Northern Development and Mines for location of mine shaftsClubs that explore caves (e.g., Sierra Club)University Biology Departments with bat experts	<ul style="list-style-type: none">All sites with confirmed hibernating bats are SWH ☹️The area includes 200m radius around the entrance of the hibernaculum, ☹️ for most development types and 1000m for wind farms^{ccv}Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”^{ccv}.SWH MIST^{cxlix} Index #1 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">None of the ELC ecosite codes are present within Study AreaNo caves, mine shafts, underground foundations or Karsts are presentNone of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present
Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	<ul style="list-style-type: none">Maternity colonies can be found in tree cavities, vegetation and often in buildings^{xxii, xxv, xxvi, xxvii, xxxi} (buildings are not considered to be SWH)Maternity roosts are not found in caves and mines in Ontario^{xxii}Maternity colonies located in Mature deciduous or mixed forest stands^{ccix, ccx} with >10/ha large diameter (>25cm dbh) wildlife trees^{ccvii}Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3^{ccxiv} or class 1 or 2^{ccxii}Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred^{ccx} <u>Information Sources</u> <ul style="list-style-type: none">OMNRF for possible locations and contact for local expertsUniversity Biology Departments with bat experts	<ul style="list-style-type: none">Maternity Colonies with confirmed use by; >10 Big Brown Bats☹️ >5 Adult Female Silver-haired Bats☹️The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies☹️.Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”^{ccv}SWH MIST^{cxlix} Index #12 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">One of the forest ELC ecosite codes (FOD) is present within Study AreaNo mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees are present Conclusion: no candidate SWH or confirmed SWH is present
Turtle Wintering Areas Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Snapping and Midland Painted turtles, ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle - Open Water areas such	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. <ul style="list-style-type: none">Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen^{cix, cx, cxi, cxviii}Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH <u>Information Sources</u> <ul style="list-style-type: none">EIS studies carried out by Conservation AuthoritiesField Naturalists ClubsOMNRF ecologist or biologist	<ul style="list-style-type: none">Presence of 5 over-wintering Midland Painted Turtles is significant^lOne or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant^lThe mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.Over wintering areas may be identified by searching for congregations (Basking	No suitable candidate habitat is present. <ul style="list-style-type: none">Two of the ELC ecosite codes (OA and MA) are present within Study AreaNo permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen or soft mud substrates (Mimico Creek contains gravel/cobble substrate

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	<ul style="list-style-type: none">Natural Heritage Information Centre (NHIC)	<p>Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May)^{cvii}. Congregation of turtles is more common where wintering areas are limited and therefore significant^{cix, cx, cxi, cxii}.</p> <ul style="list-style-type: none">SWH MIST^{cxlix} Index #28 provides development effects and mitigation measures for turtle wintering habitat	<p>and historically has poor water quality)</p> <ul style="list-style-type: none">Wetland present is poor quality overwintering habitatNone of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Reptile Hibernaculum</p> <p>Rationale: Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Snakes: Eastern Gartersnake Northern Brownsnake Northern Red-bellied Snake Northern Ring-necked Snake Northern Watersnake Smooth Green Snake</p> <p>Special Concern: Eastern Ribbonsnake Milksnake</p>	<p>For all snakes, habitat may be found in any ecosite in central Ontario other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p>	<p>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line^{xliv, l, li, lii, cxii}. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none">In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g., old dug wells)Reports and other information available from Conservation AuthoritiesField Naturalist ClubsUniversity herpetologistsNatural Heritage Information Centre (NHIC)	<p>Studies confirming:</p> <ul style="list-style-type: none">Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp.Congregations of a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp. near potential hibernacula (e.g., foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct)^l<u>Note:</u> If there are Special Concern Species present, then site is SWH<u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g., temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population [i.e. strong hibernation site fidelity.]. Other critical life processes (e.g., mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30m buffer is the SWH^lSWH MIST^{cxlix} Index #13 provides development effects and mitigation measures for snake hibernacula	<p>Future studies will be undertaken to confirm the presence/absence of reptile hibernaculum:</p> <ul style="list-style-type: none">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 <p>Conclusion: Candidate SWH is present</p>
<p>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</p> <p>Rationale: Historical use and number of nests in a colony make this</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in</p>	<ul style="list-style-type: none">Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate areaDoes not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpilesDoes not include a licensed/permitted Mineral Aggregate Operation <p><u>Information Sources</u></p> <ul style="list-style-type: none">Reports and other information available from Conservation Authorities	<p>Studies confirming:</p> <ul style="list-style-type: none">Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding seasonA colony identified as SWH will include a 50m radius habitat area from the peripheral nestsField surveys to observe and count swallow nests are to be completed during the	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">CUM1 and CUT1 ecosite codes are present are present within the Study Area

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario ^{ccix} .		the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	<ul style="list-style-type: none">Ontario Breeding Bird AtlasBird Studies Canada; NatureCounts http://www.birdscanada.org/birdmon/Field Naturalist Clubs	breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” ^{ccxi} <ul style="list-style-type: none">SWH MIST^{cxlix} Index #4 provides development effects and mitigation measures	<ul style="list-style-type: none">No areas with exposed soil banks, undisturbed or naturally erodingNone of the listed species were recorded, nor were nests found within any of the bridges within the Study Area <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually	Black-crowned Night-Heron Great Blue Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	<ul style="list-style-type: none">Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be usedMost nests in trees are 11 to 15 m from ground, near the top of the tree <p><u>Information Sources</u></p> <ul style="list-style-type: none">Ontario Breeding Bird Atlas^{ccv}, colonial nest recordsOntario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF)Natural Heritage Information Centre (NHIC) Mixed Wader Nesting ColonyAerial photographs can help identify large heronriesReports and other information available from Conservation AuthoritiesMNRF District OfficesField Naturalist Clubs	Studies confirming: <ul style="list-style-type: none">Presence of 2^l or more active nests of Great Blue HeronThe edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH^{cc, ccvii}Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshellsSWH MIST^{cxlix} Index #5 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">None of the ELC ecosite codes are present within Study AreaNo nests in live or dead standing trees in wetlands, lakes, islands, and peninsulasOne of the listed species was recorded (Great Blue Heron) <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
Colonially-Nesting Bird Breeding Habitat (Ground) Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually	Brewer’s Blackbird Caspian Tern Common Tern Great Black-backed Gull Herring Gull Little Gull Ring-billed Gull	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer’s Blackbird) MAM1-6;	<ul style="list-style-type: none">Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areasBrewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands <p><u>Information Sources</u></p> <ul style="list-style-type: none">Ontario Breeding Bird Atlas, rare/colonial species recordsCanadian Wildlife ServiceReports and other information available from Conservation AuthoritiesNatural Heritage Information Centre (NHIC) Colonial Waterbird Nesting AreaMNRF District OfficesField Naturalist Clubs	Studies confirming: <ul style="list-style-type: none">Presence of >25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern[Ⓔ]Presence of 5 or more pairs for Brewer’s Blackbird[Ⓔ]Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant[Ⓔ]The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH^{cc, cvii}Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines	No suitable candidate habitat is present. <ul style="list-style-type: none">CUM and CUT ecosite codes are present within Study AreaNo islands or peninsulas associated with open water or in marshy areasNo farmlands, open fields or pasturesNone of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		MAS1-3; CUM CUT CUS		for Wind Power Projects” ^{ccxi} <ul style="list-style-type: none">SWH MIST^{cxliix}Index #6 provides development effects and mitigation measures	
Migratory Butterfly Stopover Areas <u>Rationale:</u> <i>Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter</i>	Painted Lady Red Admiral <u>Special Concern:</u> Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: Field: CUM CUT CUS Forest: FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10ha in size with a combination of field and forest habitat present, and will be located within 5km of Lake Erie or Lake Ontario ^{cxlix} <ul style="list-style-type: none">The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south ^{xxxii, xxxiii, xxxiv, xxxv, xxxvi}The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat ^{cxlviii, cxlix}Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes ^{xxxvii, xxxviii, xxxix, xl, xli} <u>Information Sources</u> <ul style="list-style-type: none">MNRF District OfficesNatural Heritage Information Centre (NHIC)Agriculture Canada in Ottawa may have list of butterfly expertsField Naturalist ClubsToronto Entomologists Association	Studies confirm: <ul style="list-style-type: none">The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct)^{xliii}. MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day^{xxxvii}, significant variation can occur between years and multiple years of sampling should occur ^{xl, xliii}.MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral’s is to be considered significant.^lSWHDSS cxlix Index #16 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">CUM and CUT ecosite codes are present within Study Area, but are not of appropriate size (10ha)None of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present
Landbird Migratory Stopover Areas <u>Rationale:</u> Sites with a high diversity of species as well as high numbers are most significant	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	<ul style="list-style-type: none">Woodlots >5 ha^l in size and within 5 km ^{iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv} of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitatIf multiple woodlands are located along the shoreline those Woodlands <2km from Lake Erie and Lake Ontario are more significant^{cxliix}. Sites have a variety of habitats; forest, grassland and wetland complexes ^{cxlix}The largest sites are more significant ^{cxlix}Woodlots and forest fragments are important habitats to migrating birds^{ccxviii}, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH ^{cxlviii} <u>Information Sources</u> <ul style="list-style-type: none"><i>Bird Studies Canada</i><i>Ontario Nature</i><i>Local birders and field naturalist club</i><i>Ontario Important Bird Areas</i> (IBA) Program	Studies confirm: <ul style="list-style-type: none">Use of the woodlot by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates^l. This abundance and diversity of migrant bird species is considered above average and significant.Studies should be completed during spring (Apr/May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}SWH MIST cxlix Index #9 provides development effects and mitigation measures	No suitable candidate habitat is present. <ul style="list-style-type: none">One of the ELC ecosite codes is present within Study Area (FOD), however it does not meet the size requirements (>5 ha)None of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions ^{cxlviii} .	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50ha may also be used.	<ul style="list-style-type: none">Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots>50ha[Ⓔ]Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlandsLarge woodlots >100ha and up to 1500ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/haWoodlots with high densities of deer due to artificial feeding are not significant[Ⓔ] Information Sources <ul style="list-style-type: none">MNRF District OfficesLIO/NRVIS	<p>Studies confirm:</p> <ul style="list-style-type: none">Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF ^{cxlviii}Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF [Ⓘ]Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques^{ccxxi}, ground or road surveys. or a pellet count deer density survey^{ccxxv}SWH MIST ^{cxlix} Index #2 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the ELC ecosite codes is present within Study Area (FOD),No woodlots >100 ha in size areasNo White-tailed Deer were recordedNo deer winter congregation areas mapped by MNRF Conclusion: no candidate SWH or confirmed SWH is present

Rare Vegetation Communities

Rare vegetation communities often contain rare species, particularly plants and small invertebrates, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. When assessing rare vegetation communities, one of the most important criteria is the current representation of the community in the planning area based on its area relative to the total landscape or the number of examples within the planning area. There are a number of criterion used to define rare vegetation communities, however the NHIC uses a system that considers the provincial rank of a species or community type as a tool to prioritize protection efforts. These ranks are not legal designations but have been assigned using the best available scientific information, and follow a systematic ranking procedure developed by The Nature Conservancy (U.S.). The ranks are based on three factors: estimated number of occurrences, estimated community aerial extent, and estimated range of the community within the province:

S1 Extremely rare - usually 5 or fewer occurrences in the province, or very few remaining hectares. **S2 Very rare** - usually between 5 and 20 occurrences in the province, or few remaining hectares. **S3 Rare to uncommon** - usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.

The setting of criteria for significant wildlife habitat (SWH) has incorporated this ranking system into its process of determining rare vegetation communities and as such, a rare vegetation community is defined to include areas that contain a provincially rare vegetation community and/or areas that contain a vegetation community that is rare within the planning area. Table D-2 contains a listing of rare vegetation communities that are considered SWH for the planning area contained within Ecoregion 7E.

Table D-2: Rare Vegetation Communities.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Cliffs and Talus Slopes</p> <p>Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p>Any ELC Ecosite within Community Series:</p> <p>TAO CLO TAS CLS TAT CLT</p>	<p>A Cliff is vertical to near vertical bedrock >3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris</p>	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p>Information Sources</p> <ul style="list-style-type: none">• <i>The Niagara Escarpment Commission has detailed information on location of these habitats</i>• <i>OMNRF Districts</i>• <i>Natural Heritage Information Centre (NHIC) has location information available on their website</i>• <i>Field Naturalist Clubs</i>• <i>Conservation Authorities</i>	<ul style="list-style-type: none">• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes^{lxxviii}• SWH MIST^{cxlix} Index #21 provides development effects and mitigation measures	<p>No suitable candidate habitat is present in the vicinity of the Study Area.</p> <ul style="list-style-type: none">• None of the ELC ecosite codes are present within Study Area. <p>Conclusion: no candidate SWH or confirmed SWH is present.</p>
<p>Sand Barren</p> <p>Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites: SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p>	<p>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.</p>	<p>A sand barren area >0.5ha in size[Ⓔ]</p> <p>Information Sources</p> <ul style="list-style-type: none">• <i>OMNRF Districts</i>• <i>Natural Heritage Information Centre (NHIC) has location information available on their website</i>• <i>Field Naturalist Clubs</i>• <i>Conservation Authorities</i>	<ul style="list-style-type: none">• Confirm any ELC Vegetation Type for Sand Barrens^{lxxviii}• Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)¹.• SWH MIST^{cxlix} Index #20 provides development effects and mitigation measures	<p>No suitable candidate habitat is present in the vicinity of the Study Area.</p> <ul style="list-style-type: none">• None of the ELC ecosite codes are present within Study Area. <p>Conclusion: no candidate SWH or confirmed SWH is present.</p>
<p>Alvar</p> <p>Rationale: Alvars are extremely rare habitats in Ecos-region 7E.</p>	<p>ALO1 ALS1 ALT1 CUM2 CUS2 CUT2-1 CUW2 FOC1 FOC2</p> <p>Five Alvar Indicator Species: 1) Carex crawei 2) Panicum philadelphicum</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to</p>	<p>An Alvar site > 0.5ha in size^{lxxv}. Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie.^{cxci}</p> <p>Information Sources</p> <ul style="list-style-type: none">• Alvars of Ontario (2000), Federation of Ontario Naturalists• Ontario Nature – Conserving Great Lakes Alvars• Natural Heritage Information Centre (NHIC) has location information available on their website• OMNRF Staff• Field Naturalist Clubs• Conservation Authorities	<ul style="list-style-type: none">• Field studies that identify four of the five[Ⓔ] Alvar Indicator Species^{lxxv,cxli} at a Candidate Alvar site is Significant• Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)• The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses^{lxxv}• SWH MIST^{cxlix} Index #17 provides development effects and mitigation measures	<p>No suitable candidate habitat is present in the vicinity of the Study Area.</p> <ul style="list-style-type: none">• None of the ELC ecosite codes are present within Study Area. <p>Conclusion: no candidate SWH or confirmed SWH is present.</p>

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
	3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum These indicator species are very specific to Alvars within Ecoregion 7E ^(E) ^{cxlix}	barren with a less than 60% tree cover ^{lxxviii}			
Old Growth Forest Rationale: Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.	Forest Community Series: FOC FOD FOM SWC SWD SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland area is >0.5ha. <u>Information Sources</u> <ul style="list-style-type: none">OMNRF Forest Resource Inventory mappingOMNRF DistrictsField Naturalist ClubsConservation AuthoritiesSustainable Forestry Licence (SFL) companies will possibly know locations through field operationsMunicipal forestry departments	Field Studies will determine: <ul style="list-style-type: none">If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat^{cxlviii}The stand will have experienced no recognizable forestry activities^{cxlviii} (cut stumps will not be present)The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWHDetermine ELC vegetation types for the forest area containing the old growth characteristics^{lxxviii}SWH MIST^{cxlix} Index #23 provides development effects and mitigation measures	No suitable candidate habitat is present in the vicinity of the Study Area. <ul style="list-style-type: none">One of the ELC ecosite codes is present within Study Area (FOD)No Old Growth Forest characteristics are present Conclusion: no candidate SWH or confirmed SWH is present.
Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	CUS2 TPS1 TPS2 TPW1 TPW2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	No minimum size to site ^í Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none">Natural Heritage Information Centre (NHIC) has location data available on their websiteOMNRF DistrictsField Naturalists ClubsConservation Authorities	Field studies confirm one or more of the Savannah indicator species listed in ^{lxxv} Appendix N should be present ^í . Note: Savannah plant spp. list from Ecoregion 7E should be used ^{cxlviii} . <ul style="list-style-type: none">Area of the ELC Ecosite is the SWHSite must not be dominated by exotic or introduced species (<50% vegetative cover exotics)SWH MIST^{cxlix} Index #18 provides development effects and mitigation measures	No suitable candidate habitat is present in the vicinity of the Study Area. <ul style="list-style-type: none">None of the ELC ecosite codes are present within Study Area. Conclusion: no candidate SWH or confirmed SWH is present.
Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover. In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered	No minimum size to site ^í . Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none">OMNRF DistrictsNatural Heritage Information Centre (NHIC) has	Field studies confirm one or more of the Prairie indicator species listed in ^{lxxv} Appendix N should be present ^í . Note: Prairie plant spp. list from Ecoregion 7E should be used ^{cxlviii} <ul style="list-style-type: none">Area of the ELC Ecosite is the SWHSite must not be dominated by exotic or introduced species (<50% vegetative cover exotics)	No suitable candidate habitat is present in the vicinity of the Study Area. <ul style="list-style-type: none">None of the ELC ecosite codes are

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
		between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	<div>location information available on their website</div> <ul style="list-style-type: none">Field Naturalists ClubsConservation Authorities	<ul style="list-style-type: none">SWHDSS^{cxlix} Index #19 provides development effects and mitigation measures	<div>present within Study Area.</div> <div>Conclusion: no candidate SWH or confirmed SWH is present.</div>
<div>Other Rare Vegetation Communities</div> <div>Rationale: Plant communities that often contain rare species which depend on the habitat for survival.</div>	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG ^{cxlviii} . Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	<div>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M ^{cxlviii}</div> <div>The OMNRF/NHIC will have up to date listing for rare vegetation communities.</div> <div>Information Sources</div> <ul style="list-style-type: none">Natural Heritage Information Centre (NHIC) has location information available on their websiteOMNRF DistrictsField Naturalists ClubsConservation Authorities	<div>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG^{cxlviii}</div> <ul style="list-style-type: none">Area of the ELC Vegetation Type polygon is the SWHSWH MIST ^{cxlix} Index #37 provides development effects and mitigation measures	<div>No suitable candidate habitat is present in the vicinity of the Study Area.</div> <ul style="list-style-type: none">None of the ELC ecosite codes outlined in Appendix M for the Toronto region are present within Study Area. <div>Conclusion: no candidate SWH or confirmed SWH is present.</div>

Specialized Habitat for Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size^{cxlviii}. Specialized habitat for wildlife is a community or diversity-based category, therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area. The largest and least fragmented habitats within a planning area will support the most significant populations of wildlife. The specialized habitats for wildlife that are considered as SWH are outlined in Table D-3.

Table D-3: Specialized Habitats of Wildlife considered SWH.

Specialized Wildlife Habitat	Wildlife Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation																		
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria																			
<p>Waterfowl Nesting Area</p> <p><u>Rationale:</u></p> <p><i>Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</i></p>	<p>American Black Duck</p> <p>Blue-winged Teal</p> <p>Gadwall</p> <p>Green-winged Teal</p> <p>Hooded Merganser</p> <p>Mallard</p> <p>Northern Pintail</p> <p>Northern Shoveler</p> <p>Wood Duck</p>	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH:</p> <table><tr><td>MAM1</td><td>MAM2</td></tr><tr><td>MAM3</td><td>MAM4</td></tr><tr><td>MAM5</td><td>MAM6</td></tr><tr><td>MAS1</td><td>MAS2</td></tr><tr><td>MAS3</td><td>SAS1</td></tr><tr><td>SAM1</td><td>SAF1</td></tr><tr><td>SWD1</td><td>SWD2</td></tr><tr><td>SWD3</td><td>SWD4</td></tr><tr><td>SWT1</td><td>SWT2</td></tr></table> <p>Note: includes adjacency to Provincially Significant Wetlands</p>	MAM1	MAM2	MAM3	MAM4	MAM5	MAM6	MAS1	MAS2	MAS3	SAS1	SAM1	SAF1	SWD1	SWD2	SWD3	SWD4	SWT1	SWT2	<p>A waterfowl nesting area extends 120m ^{cxlix} from a wetland (> 0.5ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5ha) wetlands within 120m of each individual wetland where waterfowl nesting is known to occur ^{cxlix}.</p> <ul style="list-style-type: none">Upland areas should be at least 120m wide so that predators such as racoons, skunks, and foxes have difficulty finding nestsWood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites <p><u>Information Sources</u></p> <ul style="list-style-type: none">Ducks Unlimited staff may know the locations of particularly productive nesting sitesOMNRF Wetland Evaluations for indication of significant waterfowl nesting habitatReports and other information available from Conservation Authorities	<p>Studies confirmed:</p> <ul style="list-style-type: none">Presence of 3 or more nesting pairs for listed species excluding Mallards^I, or;Presence of 10 or more nesting pairs for listed species including Mallards^I.Any active nesting site of an American Black Duck is considered significant.Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120m ^{cxlviii} from the wetland and will provide enough habitat for waterfowl to successfully nest.SWH MIST^{cxlix} Index #25 provides development effects and mitigation measures.	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the ELC ecosite codes is present within Study Area (MAS2).The wetland within the Study Area does not meet the size requirements (>0.5 ha).One of the listed species was recorded (Mallard), however 10 or more nesting pairs were not present. <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
MAM1	MAM2																						
MAM3	MAM4																						
MAM5	MAM6																						
MAS1	MAS2																						
MAS3	SAS1																						
SAM1	SAF1																						
SWD1	SWD2																						
SWD3	SWD4																						
SWT1	SWT2																						
<p>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</p> <p><u>Rationale:</u></p> <p>Nest sites are fairly uncommon in Eco-region 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	<p>Osprey</p> <p><u>Special Concern:</u></p> <p>Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <p>Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy.</p> <p>Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none">Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in OntarioMNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat.Nature Counts, Ontario Nest Records Scheme data	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none">One or more active Osprey or Bald Eagle nests in an area^{cxlviii}.Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWHFor an Osprey, the active nest and a 300m radius around the nest or the contiguous woodland stand is the SWH ^{ccvii}, maintaining undisturbed shorelines with large trees within this area is important ^{cxlviii}.For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. ^{cvi}, ^{ccvii} Area of the habitat from 400-800m is dependant on site lines from the nest to the development and inclusion of perching and foraging habitat ^{cvi}To be significant a site must be used annually.	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the ELC ecosite codes is present within Study Area (FOD) adjacent to a watercourse (Mimico Creek)Neither of the listed species were recorded in the areaNo stick nests were observed during the April 29, 2020 sit4e visit.																		

Specialized Wildlife Habitat	Wildlife Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none">OMNRF DistrictCheck the Ontario Breeding Bird Atlas ^{ccv} or Rare Breeding Birds in Ontario for species documentedReports and other information available from Conservation AuthoritiesField Naturalists clubs	<p>When found inactive, the site must be known to be inactive for \geq 3 years or suspected of not being used for >5 years before being considered not significant. ^{ccvii}</p> <ul style="list-style-type: none">Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid AugustEvaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}SWH MIST^{cxlix} Index #26 provides development effects and mitigation measures	Conclusion: no candidate SWH or confirmed SWH is present
Woodland Raptor Nesting Habitat Rationale: Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.	Barred Owl Broad-winged Hawk Cooper’s Hawk Northern Goshawk Red-shouldered Hawk Sharp-shinned Hawk	<p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC, SWM, SWD and CUP3</p>	<p>All natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitat ^{lxxxviii, lxxxix, xc, xci, xciii, xciv, xcv,xcvi, cxxxiii} . Interior habitat determined with a 200m buffer^{cxlviii}</p> <ul style="list-style-type: none">Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest <p><u>Information Sources:</u></p> <ul style="list-style-type: none">OMNRF DistrictsCheck the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documentedCheck data from Bird Studies CanadaReports and other information available from Conservation Authorities	<p>Studies confirm:</p> <ul style="list-style-type: none">Presence of 1 or more active nests from species list is considered significant^{cxlviii} .Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28ha of suitable habitat is the SWH ^{ccvii}. (the 28ha habitat area would be applied where optimal habitat is irregularly shaped around the nest)Barred Owl – A 200m radius around the nest is the SWH ^{ccvii} .Broad-winged Hawk and Coopers Hawk – A 100m radius around the nest is the SWH^{ccvii} .Sharp-Shinned Hawk – A 50m radius around the nest is the SWH^{ccvii} .Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.SWH MIST ^{cxlix} Index #27 provides development effects and mitigation measures.	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">Two ELC ecosite codes are present within Study Area (FOD, CUW)No natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitatNone of the listed species were recordedNo stick nests were observed during the April 29, 2020 sit4e visit. Conclusion: no candidate SWH or confirmed SWH is present
Turtle Nesting Areas Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle Special Concern Species: Northern Map Turtle Snapping Turtle	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) ^{cxlviii} or within the following ELC Ecosites:</p> <p>BOO1 FEO1 MAS1 MAS2 MAS3 SAF1 SAM1</p>	<ul style="list-style-type: none">Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <p><u>Information Sources:</u></p> <ul style="list-style-type: none">Use Ontario Soil Survey reports and maps to help find suitable	<p>Studies confirm:</p> <ul style="list-style-type: none">Presence of 5 or more nesting Midland Painted TurtlesOne or more Northern Map Turtle or Snapping Turtle nesting is a SWHⁱThe area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. ^{cxlviii}Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the ELC ecosite codes is present within Study Area (MAS2)Sand and gravel located along Mimico Creek banks, however the creek is highly disturbed and water

Specialized Wildlife Habitat	Wildlife Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		SAS1	<p>substrate for nesting turtles (well-drained sands and fine gravels)</p> <ul style="list-style-type: none">Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.Natural Heritage Information Centre (NHIC)Field Naturalist Clubs	<p>area of habitat</p> <ul style="list-style-type: none">Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat	<p>levels fluctuate very frequently.</p> <ul style="list-style-type: none">Due to the poor quality of habitat it is unlikely to support an abundance of turtles that would nest on the marginal banks. Higher quality turtle nesting habitat is likely present in the marsh located south of the Study Area near the mouth of Lake Ontario. <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Seeps and Springs</p> <p><u>Rationale:</u> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	Ruffed Grouse Salamander spp. Spruce Grouse White-tailed Deer Wild Turkey	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	<p>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system ^{cxvii, cxlix}.</p> <ul style="list-style-type: none">Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species ^{cxix, cxx, cxxi, cxxii, cxiii, cxiv}. <p><u>Information Sources:</u></p> <ul style="list-style-type: none">Topographical MapThermographyHydrological surveys conducted by Conservation Authorities and MOEField Naturalists Clubs and landownersMunicipalities and Conservation Authorities may have drainage maps and headwater areas mapped	<p>Field Studies confirm:</p> <ul style="list-style-type: none">Presence of a site with 2 or more¹ seeps/springs should be considered SWHThe area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.SWH MIST Index #30 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">Two ELC ecosite codes are present within Study Area (FOD, CUW)No forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river systemNone of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Amphibian Breeding Habitat (Woodland)</p> <p><u>Rationale:</u> These habitats are extremely important to</p>	Blue-spotted Salamander Eastern Newt Gray Treefrog Spotted Salamander Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOD FOM SWC	<ul style="list-style-type: none">Presence of a wetland, pond or woodland pool (including vernal pools) >500m² (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians.Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat^{cxlviii}	<p>Studies confirm;</p> <ul style="list-style-type: none">Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3[®].A combination of observational study and call count	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the ELC ecosite codes present are within Study Area (FOD)

Specialized Wildlife Habitat	Wildlife Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations		SWD SWM Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	<u>Information Sources:</u> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property OMNRF Districts and wetland evaluations Field Naturalist clubs Canadian Wildlife Service Amphibian Road Call Survey Ontario Vernal Pool Association: http://www.ontariovernalpools.org 	surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands <ul style="list-style-type: none"> The habitat is the wetland area plus a 230m radius of woodland area ^{lxiii, lxxv, lxxvi, lxxvii, lxxviii, lxxix, lxxx, lxxxi}. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. SWH MIST ^{cxlix} Index #14 provides development effects and mitigation measures 	<ul style="list-style-type: none"> One small cattail marsh present adjacent to a woodland (stormwater outlet) Wetland does not meet the minimum size requirement of >500m² (about 25m diameter) None of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
Amphibian Breeding Habitat (Wetlands) <u>Rationale:</u> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	American Toad Blue-spotted Salamander Bullfrog Eastern Newt Four-toed Salamander Gray Treefrog Green Frog Mink Frog Northern Leopard Frog Pickerel Frog Spotted Salamander Western Chorus Frog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g., Bull Frog) may be adjacent to woodlands	<ul style="list-style-type: none"> Wetlands>500m² (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators Bullfrogs require permanent water bodies with abundant emergent vegetation <u>Information Sources:</u> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count OMNRF Districts and wetland evaluations Reports and other information available from Conservation Authorities 	Studies confirm: <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3[ⓔ]. or; Wetland with confirmed breeding Bullfrogs are significant. The ELC ecosite wetland area and the shoreline are the SWH A combination of observational study and call count surveys ^{cviii} will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table D-5 of this Schedule SWH MIST ^{cxlix} Index #15 provides development effects and mitigation measures 	No suitable candidate habitat is present. <ul style="list-style-type: none"> Two of the ELC ecosite codes are present within Study Area (MA, OA) No Wetlands>500m² None of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
Woodland Area-Sensitive Bird Breeding Habitat <u>Rationale:</u> Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for	Blackburnian Warbler Black-throated Blue Warbler Black-throated Green Warbler Blue-headed Vireo Northern Parula Ovenbird Pileated Woodpecker Red-breasted Nuthatch Veery	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	<ul style="list-style-type: none"> Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30ha. ^{cv, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxxv, cxxxvi, cxxxvii, cxxxviii, cxxxix, cxi, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvi, clvii, clviii, clix} Interior forest habitat is at least 200m from forest edge habitat. clxiv <u>Information Sources:</u> <ul style="list-style-type: none"> Local birder clubs Canadian Wildlife Service (CWS) for the location of forest bird monitoring 	<u>Studies confirm:</u> <ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. [ⓔ] Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. [ⓔ] <ul style="list-style-type: none"> Conduct field investigations in spring and early summer when birds are singing and defending their territories Evaluation methods to follow “Bird and Bird Habitats: 	No suitable candidate habitat is present. <ul style="list-style-type: none"> One of the ELC ecosite codes is present within Study Area (FOD) No woodlots >30 ha None of the listed species were recorded

Specialized Wildlife Habitat	Wildlife Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
area sensitive interior forest song birds.	Scarlet Tanager Winter Wren Yellow-bellied Sapsucker Special Concern: Canada Warbler Cerulean Warbler		<ul style="list-style-type: none">Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior speciesReports and other information available from Conservation Authorities	<div>Guidelines for Wind Power Projects^{vi} ^{ccxi}</div> <ul style="list-style-type: none">SWH MIST ^{cxlix} Index #34 provides development effects and mitigation measures	Conclusion: no candidate SWH or confirmed SWH is present

Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act 2007. Table D-4 assists with the identification of SWH for Species of Conservation Concern.

Table D-4: Habitats of Species of Conservation Concern considered SWH.

Wildlife	Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p>Marsh Breeding Bird Habitat</p> <p><u>Rationale:</u> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>American Bittern American Coot Common Loon Common Moorhen Green Heron Marsh Wren Pied-billed Grebe Sandhill Crane Sedge Wren Sora Trumpeter Swan Virginia Rail</p> <p>Special Concern: Black Tern Yellow Rail</p>	<p>BOO1 FEO1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAF1 SAM1 SAS1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none">Nesting occurs in wetlands.All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present ^{cxxiv}.For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <p><u>Information Sources:</u></p> <ul style="list-style-type: none">OMNRF District and wetland evaluationsField Naturalist clubsNatural Heritage Information Centre (NHIC) RecordsReports and other information available from Conservation AuthoritiesOntario Breeding Bird Atlas	<p>Studies confirm:</p> <ul style="list-style-type: none">Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species ☹. <p>Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH ☹.</p> <ul style="list-style-type: none">Area of the ELC ecosite is the SWHBreeding surveys should be done in May/June when these species are actively nesting in wetland habitatsEvaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”SWH MIST Index #35 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">One of the ELC ecosite codes for Green Heron are present within Study Area (MA)The wetland present (ELC Code MA) is better described as a vernal pool created by stormwater drainage containing dense cattails. The wetland area is very small and would not support breeding habitat for the listed species.The portion of Mimico Creek overlapping the Study Area does not contain aquatic vegetationNone of the listed species were recorded <p>Conclusion: Candidate SWH</p>

Wildlife	Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p>Open Country Bird Breeding Habitat</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.</p>	<p>Grasshopper Sparrow Northern Harrier Savannah Sparrow Upland Sandpiper Vesper Sparrow</p> <p>Special Concern: Short-eared Owl</p>	<p>CUM1 CUM2</p>	<p>Large grassland areas (includes natural and cultural fields and meadows) >30ha^{clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix}. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years)^Í.</p> <p>Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.</p> <p>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</p> <p><u>Information Sources:</u></p> <ul style="list-style-type: none">Agricultural land classification maps, Ministry of AgricultureLocal bird clubsOntario Breeding Bird AtlasEIS Reports and other information available from Conservation Authorities	<p>Field Studies confirm:</p> <ul style="list-style-type: none">Presence of nesting or breeding of 2 or more of the listed species.^ÍA field with 1 or more breeding Short-eared Owls is to be considered SWHThe area of SWH is the contiguous ELC ecosite field areasConduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territoriesEvaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}SWH MIST^{cxlix} Index #32 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">CUM1 ecosite code is present within Study AreaNo large grassland areas >30 haNone of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Shrub/Early Successional Bird Breeding Habitat</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records^{cxci}.</p>	<p>Indicator Spp: Brown Thrasher Clay-coloured Sparrow</p> <p>Common Spp.: Black-billed Cuckoo Eastern Towhee Field Sparrow Willow Flycatcher</p> <p>Special Concern: Golden-winged Warbler Yellow-breasted Chat</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<p>Large field areas succeeding to shrub and thicket habitats>10ha^{clxiv} in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or live-stock pasturing in the last 5 years)^Í.</p> <p>Shrub thicket habitats (>10ha) are most likely to support and sustain a diversity of these species^{clxxiii}.</p> <p>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</p> <p><u>Information Sources:</u></p> <ul style="list-style-type: none">Agricultural land classification maps, Ministry of AgricultureLocal bird clubsOntario Breeding Bird AtlasReports and other information available from Conservation Authorities	<p>Field Studies confirm:</p> <ul style="list-style-type: none">Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species.^ÍA habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat.^ÍThe area of the SWH is the contiguous ELC ecosite field/thicket areaConduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territoriesEvaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”^{ccxi}SWH MIST^{cxlix} Index #33 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">CUT1 and CUW1 ecosite codes are present within Study Area, however it does not measure >10haNone of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Terrestrial Crayfish</p> <p>Rationale: Terrestrial Crayfish are only found within SW</p>	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crawfish or</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none">Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water.Both species are a semi-terrestrial burrower which spends most of its	<p>Studies Confirm:</p> <ul style="list-style-type: none">Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or terrestrial sites^{cci}Area of ELC Ecosite or an ecoelement area of	<p>No suitable candidate habitat is present.</p>

Wildlife	Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Ontario in Canada and their habitats are very rare. ^{ccii}	Meadow Crayfish; (<i>Cambarus Diogenes</i>)	SWD SWT SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.	life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <u>Information Sources:</u> <ul style="list-style-type: none">Information sources from “Conservation Status of Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF March 1998	meadow marsh or swamp within the larger ecosite area is the SWH <ul style="list-style-type: none">Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficultSWH MIST ^{cxlix} Index #36 provides development effects and mitigation measures	<ul style="list-style-type: none">Two ecosite codes are present within Study Area (CUM1, MAS2)Terrestrial Crayfish are only found within South Western OntarioNo burrows or chimneys were observed within the Study Area Conclusion: No candidate or confirmed SWH is present
Special Concern and Rare Wildlife Species <u>Rationale:</u> These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites ^{lxxviii} <u>Information Sources:</u> <ul style="list-style-type: none">Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences dataNHIC Website “Get Information”: http://nhic.mnr.gov.on.caOntario Breeding Bird AtlasExpert advice should be sought as many of the rare spp. have little information available about their requirements	Studies Confirm: <ul style="list-style-type: none">Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiableThe area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.SWH MIST ^{cxlix} Index #37 provides development effects and mitigation measures	Future studies will be undertaken to confirm presence/absence of Special Concern and rare wildlife species <ul style="list-style-type: none">A wide variety of habitats are present within the Study Area; Special concern species have been recorded within 1 km of the Study Area Conclusion: Candidate SWH is present.

Animal Movement Corridors

Animal Movement Corridors are elongated areas used by wildlife to move from one habitat to another. They are important to ensure genetic diversity in populations, to allow seasonal migration of animals (e.g., deer moving from summer to winter range) and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors function at different scales often related to the size and home range of the animal. For example, short, narrow areas of natural habitat may function as a corridor between amphibian breeding areas and their summer range, while wider, longer corridors are needed to allow deer to travel from their winter habitat to their summer habitat.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information on animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors may allow increased access for racoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Corridors often consist of naturally vegetated areas that run through more open or developed landscapes. However, sparsely vegetated areas can also function as corridors. For example, many species move freely through agricultural land to reach natural areas. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of certain wildlife populations.

Animal Movement Corridors should only be identified as SWH where:

Where a Confirmed or Candidate SWH has been identified by MNR or the planning authority based on documented evidence of a habitat identified within these Criterion Schedules or the Significant Wildlife Habitat Technical Guide. The identified wildlife habitats Table D-5 will have distinct passageways or rely on well defined natural features for movements between habitats required by the species to complete its life cycle.

Table D-5: Animal Movement Corridors

Habitat	Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Eco-sites	Habitat Criteria and Information Sources	Defining Criteria	
<p>Amphibian Movement Corridors</p> <p><u>Rationale:</u> Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	<p>American Toad Blue-spotted Salamander Bullfrog Eastern Newt Four-toed Salamander Gray Treefrog Green Frog Mink Frog Northern Leopard Frog Pickerel Frog Spotted Salamander Western Chorus Frog</p>	<p>Corridors may be found in all ecosites associated with water.</p> <ul style="list-style-type: none">Corridors will be determined based on identifying the significant breeding habitat for these species in Table D-1	<p>Movement corridors between breeding habitat and summer habitat ^{clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi}.</p> <p>Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table D-3 (Amphibian Breeding Habitat –Wetland) of this Schedule ¹.</p> <p><u>Information Sources:</u></p> <ul style="list-style-type: none">MNRF District OfficeNatural Heritage Information Centre (NHIC)Reports and other information available from Conservation AuthoritiesField Naturalist Clubs	<ul style="list-style-type: none">Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sitesCorridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant ^{cxlix}Corridors should have at least 15m of vegetation on both sides of waterway ^{cxlix} or be up to 200m wide ^{cxlix} of woodland habitat and with gaps <20m ^{cxlix}Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat ^{cxlix}SWH MIST ^{cxlix} Index #40 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">No Movement corridors between breeding habitat and summer habitat.None of the listed species were recorded. <p>Conclusion: no candidate SWH or confirmed SWH is present</p>

Exceptions for EcoRegion 7E

Exceptions are candidate wildlife habitats that will have different criteria than what is proposed in the above schedules for an area within the Eco-region. The Exceptions will be based on Eco-Districts and municipalities can apply the exception for the eco-district within their planning area.

Table D-6: Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E

EcoDistrict	Wildlife Habitat and Species	Candidate Significant Wildlife Habitat (SWH)			Confirmed SWH	Evaluation
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
7E-2	Bat Migratory Stopover Area Rationale: Stopover areas for long distance migrant bats are important during fall migration. Eastern Red Bat Hoary Bat Silver-haired Bat	No specific ELC types.		<ul style="list-style-type: none">Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas.This is the only known bat migratory stopover habitats based on current information <u>Information Sources</u> <ul style="list-style-type: none">OMNRF for possible locations and contact for local expertsUniversity of Waterloo, Biology Department	<ul style="list-style-type: none">Long Point (42°35'N, 80°30'E, to 42°33'N, 80°03'E) has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration ^{ccxv}The confirmation criteria and habitat areas for this SWH are still being determinedSWH MIST ^{cxlix} Index #38 provides development effects and mitigation measures	Conclusion: Not applicable to the study area

Appendix E

Species at Risk Screening Table

Table E-1: SAR Screening Table

Species At Risk Designations								
ENDANGERED								
THREATENED								
SPECIAL CONCERN								
EXTIRPATED								

Species	ESA Status ¹	ESA Protection ²	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Birds								
Barn Swallow (<i>Hirundo rustica</i>)	THR	Species and General Habitat Protection	NHIC Database / Ontario Breeding Bird Atlas (Cadman et al., 2007)	Prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	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 not observed in suitable habitat found within creek.	Breeding Bird Survey #1, #2, #3 Nest Searches	Individuals observed foraging within Mimico Creek valley. Nesting activity not observed in suitable habitat found within creek.	Low – No confirmed nesting has been observed within the Study Area. Foraging habitat may temporarily be disturbed, however a wide array of foraging habitat is available elsewhere along the creek
Bank Swallow (<i>Riparia riparia</i>)	THR	Species and General Habitat Protection	Ontario Breeding Bird Atlas (Cadman et al., 2007)	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers.	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 potential for nesting habitat along 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.	Breeding Bird Survey #1, #2, #3 Nest Searches	Individuals observed foraging within Mimico Creek valley. Nesting activity not observed in suitable habitat found within creek.	Low – No vertical banks expected be removed, foraging habitat may temporarily be disturbed, however a wide array of foraging habitat is available elsewhere along the creek

¹ **SARO Endangered Species Act, 2007**
(provincial status from <http://www.ontario.ca/environment-and-energy/how-species-risk-are-listed#section-3>) The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).
Extinct - A species that no longer exists anywhere.
Extirpated (EXT) - Lives somewhere in the world, and at one time lived in the wild in Ontario, but no longer lives in the wild in Ontario.
Endangered (END) - Lives in the wild in Ontario but is facing imminent extinction or extirpation.
Threatened (THR) - Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
Special concern (SC) - Lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.
Not at Risk (NAR) - A species that has been evaluated and found to be not at risk.
Data Deficient (DD) - A species for which there is insufficient information for a provincial status recommendation.

² Ministry of Natural Resources and Forestry. (2018). *Species at risk in Ontario*. Retrieved January 4, 2018, from [https://www.ontario.ca/environment-and-energy/species-risk-ontario-list\[ontario.ca\]](https://www.ontario.ca/environment-and-energy/species-risk-ontario-list[ontario.ca])

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

Species	ESA Status ¹	ESA Protection ²	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Bobolink <i>(Dolichonyx oryzivorus)</i>	THR	Species and General Habitat Protection	Ontario Breeding Bird Atlas (Cadman et al., 2007)	Tallgrass prairie and other open meadows. With the clearing of native prairies, Bobolinks moved to living in hayfields.	Very Low – Meadows and grasslands do not meet the size requirements for habitat	Breeding Bird Survey #1, #2, #3	No individuals observed	None
Chimney Swift <i>(Chaetura pelagica)</i>	THR	Species and General Habitat Protection	Ontario Breeding Bird Atlas (Cadman et al., 2007)	Historically found in deciduous and coniferous, usually wet forest types, all with a well-developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys.	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..	Breeding Bird Survey #1, #2, #3	Suitable habitat not observed within project footprint.	Low – No species or nesting was observed within the Study Area. Additionally, any potential habitat (bridges/buildings) are not expected to be disturbed during construction
Common Nighthawk <i>(Chordeiles minor)</i>	SC	N/A	Ontario Breeding Bird Atlas (Cadman et al., 2007)	Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops).	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.	Breeding Bird Survey #1, #2, #3	No individuals observed	Low – Suitable habitat on vacant land of the former Mr. Christie Cookie Factory will be disturbed by construction, however no individuals were observed during surveys
Eastern Meadowlark <i>(Sturnella magna)</i>	THR	Species and General Habitat Protection	Ontario Breeding Bird Atlas (Cadman et al., 2007)	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Very Low – Meadows and grasslands do not meet the size requirements for Eastern Meadowlark habitat.	Breeding Bird Survey #1, #2, #3	No individuals observed	N/A
Eastern Wood-Pewee <i>(Contopus virens)</i>	SC	N/A	NHIC Database / Ontario breeding Bird Atlas (Cadman et al., 2007)	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Low – Potential for forging and nesting within cultural woodland and forest communities, however no individuals were observed during field investigations.	Breeding Bird Survey #1, #2, #3	No individuals observed	Low – Minimal tree clearing expected
Least Bittern <i>(Ixobrychus exilis)</i>	THR	Species and General Habitat Protection	NHIC Database	Found in a variety of wetland habitats, usually prefers cattail marshes with a mix of open pools and channels. Nests are found above the marsh in stands of dense vegetation near open water	Very Low –very low potential to occur in the small cattail marsh within the Study Area.	Breeding Bird Survey #1, #2, #3	No individuals observed	N/A

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

Species	ESA Status ¹	ESA Protection ²	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Peregrine Falcon (<i>Falco peregrinus</i>)	SC	N/A	Ontario breeding Bird Atlas (Cadman, et al. 2007)	Usually nest on tall, steep cliff ledges close to large bodies of water. Although most people associate Peregrine Falcons with rugged wilderness, some of these birds have adapted well to city life. Urban peregrines raise their young on ledges of tall buildings, even in busy downtown areas. Cities offer peregrines a good year-round supply of pigeons and starlings to feed on.	Moderate – 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.	Breeding Bird Survey #1, #2, #3	No individuals observed	None – No nesting habitat to be impacted and the area will remain as foraging habitat
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	SC	N/A	Ontario breeding Bird Atlas (Cadman, et al. 2007)	Associated with open woodland and woodland edges; areas typically have many dead trees used for nesting and perching.	Low– Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.	Breeding Bird Survey #1, #2, #3	No individuals observed	Low – Minimal tree clearing expected
Wood Thrush (<i>Hylocichla mustelina</i>)	SC	N/A	Ontario breeding Bird Atlas (Cadman et al., 2007)	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Low – Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.	Breeding Bird Survey #1, #2, #3	No individuals observed	Low – Minimal tree clearing expected
Herptiles								
Blanding’s Turtle (<i>Emydoidea blandingii</i>)	THR	Species and General Habitat Protection	Ontario Nature Herpetofaunal Atlas (2016)	Typically inhabit shallow lakes, ponds, and wetlands with clean water and mucky bottoms. Prefer large bodies of water and areas with fallen trees and other debris for basking.	Low – Slight possibility to occur within Mimico Creek/cattail marsh within the Study Area, however no individuals were observed during field investigations.	Any incidental observations or nesting observations were recorded	No individuals observed	Low– Mimico Creek and wetland not expected to be impacted by the Project. If any species are displaced, higher quality habitat is present at the mouth of Mimico Creek.
Milksnake (<i>Lampropeltis triangulum</i>)	SC	N/A	Ontario Nature Herpetofaunal Atlas (2016)	Typically inhabits human-made structures may provide suitable habitat for hibernation during the winter.	Low - Suitable habitat may occur throughout the Study Area. Human-made structures, and rail way structures may be suitable hibernacula, however no individuals were observed during field investigations.	Any incidental observations or nesting observations were recorded	No individuals observed	Low – Mimico Creek and wetland not expected to be impacted by the Project. If any species are displaced, higher quality habitat is present at the mouth of Mimico Creek.
Northern Map Turtle (<i>Graptemys geographica</i>)	SC	N/A	NHIC Database / Ontario Nature Herpetofaunal Atlas (2016)	Typically inhabits ponds, rivers, and lakes. Prefer large bodies of water and areas with fallen trees and other debris for basking.	Low - Slight possibility to occur within Mimico Creek within the Study Area, however no individuals were observed during field investigations	Any incidental observations or nesting observations were recorded	No individuals observed	Low – Mimico Creek and wetland not expected to be impacted by the Project. If any species are displaced, higher quality habitat is present at the mouth of Mimico Creek.

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

Species	ESA Status ¹	ESA Protection ²	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Snapping Turtle (<i>Chelydra serpentina</i>)	SC	N/A	Ontario Nature Herpetofaunal Atlas (2016)	Typically can be found in shallow waters with soft mud and access leaf litter. During nesting season, females travel over land to gravel and sandy areas near streams to nest.	Moderate- No individuals were observed during field investigations, however there is a moderate possibility to forage and travel within Mimico Creek.	Any incidental observations or nesting observations were recorded	No individuals observed	Low – Mimico Creek and wetland not expected to be impacted by the Project. If any species are displaced, higher quality habitat is present at the mouth of Mimico Creek.
Fish								
American Eel (<i>Anguilla rostrate</i>)	END	Species and General Habitat Protection	NHIC Database	Can typically be found in freshwater and saltwater areas accessible from the Atlantic Ocean such as the Great Lakes and its tributaries.	High – possibility to occur within Mimico Creek within the Study Area; rrecovery Strategy indicates that it is likely to be present within tributaries of Lake Ontario.	Aquatic Habitat Assessment	American Eel is likely found within Mimico Creek based on habitat requirements	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.
Redside Dace (<i>Clinostomus elongatus</i>)	END	Species and General Habitat Protection	NHIC Database	Typically found in pools and slow moving areas of small streams and headwaters with a gravel bottom. Generally found in areas with overhanging grasses and shrubs.	Very Low – low possibility to occur within Mimico Creek within the Study Area.	N/A	N/A	N/A
Insects								
Karner Blue (<i>Lycaeides melissa samuelis</i>)	EXT	Species and General Habitat Protection	Ontario Butterfly Atlas (Jones et al., 2013)	Habitat is restricted to where wild lupine grows (in sandy soils, sandy pine barrens, beach dunes, and oak savannahs)	Very Low – Extirpated in Ontario; wild lupine not identified initial vegetation inventory	Vegetation inventory	No Karner Blue or Wild Lupine has been observed to date.	Unlikely – Currently extirpated in Ontario. Additional flora investigations have not identified any Wild Lupine to date.
Monarch (<i>Danaus plexippus</i>)	SC	N/A	Ontario Butterfly Atlas (Jones et al., 2013)	Caterpillars typically found on milkweed plants confined to meadows and open areas. Adult butterflies are found in diverse habitats with abundant wildflowers.	Confirmed - Individuals observed foraging on sparse stems of Milkweed within open areas and meadow communities within the Study Area.	Vegetation inventory	Individuals observed foraging on sparse stems of Milkweed within open areas and meadow communities within the Study Area.	Low – Sparse stems of milkweed have been observed
Mottled Duskywing (<i>Erynnis martialis</i>)	END	Species and General Habitat Protection	Ontario Butterfly Atlas (Jones et al., 2013)	Typically found in dry habitats with sparse vegetation such as open barren, sandy patches among woodlands and alvars. Eggs are deposited on only two plants: New Jersey tea and prairie redroot.	Low – Slight possibility to occur in dry areas within the Study Area such as empty lots or forest openings, however no plants species associated with Mottled Duskywing habitat or individuals of the species were observed.	Vegetation inventory	No Monarch, New Jersey Tea or Prairie Redroot observed to date.	Low – Currently known to inhabit nine locations within Ontario with Burlington being the closest known population. Additional flora investigations have not noted any New Jersey Tea and Prairie Root
Insects								
Eastern Small-footed Myotis (<i>Myotis leibii</i>)	END	Species and General Habitat Protection	No Records	Typically found roosting under rocks, rock outcrops, buildings, under bridges or in caves, mines or hollow trees. Hibernation typically occurs in caves and abandoned mines,	Moderate – moderate potential to occur within forest communities and candidate snag trees	Bat Snag Survey	28 Candidate Snags identified for Northern Myotis and Little Brown Myotis	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

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

Species	ESA Status ¹	ESA Protection ²	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Little Brown Myotis (Myotis lucifugus)	END	Species and General Habitat Protection	No Records	Typically found roosting in trees or attics, abandoned buildings or barns. Hibernation typically occurs in caves or abandoned mines	Moderate – moderate potential to occur within forest communities and candidate snag trees			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.
Northern Myotis (Myotis serptrionalis)	END	Species and General Habitat Protection	No Records	Typically found roosting in loose bark and in the cavities of trees. Hibernation typically occurs in caves and abandoned mines,	Moderate – moderate potential to occur within forest communities and candidate snag trees			
Tric-coloued Bat (Perimyotis subflavus)	END	Species and General Habitat Protection	No Records	Typically found in forested habitats, with roosting occurring in order forests and barns. Hibernation typically occurs in caves and abandoned mines,	Moderate – moderate potential to occur within forest communities and candidate snag trees	Bat Snag Survey	10 Candidate Snags identified for Tricolored Bat	

Appendix F

Candidate Bat Snag Survey Results and Photos

Table 1: Brown Myotis and Northern Myotis

Tree Number	Tree Species ID	Height Class	DBH (cm)	Decay Class	Tree Characteristics	Unit #	Unit Hectares	ELC Code	ELC Name	ELC Hectares
1	Manitoba Maple	2	90	6	Loose Bark Dead	Unit 6	4.80	CV1-1	Transportation	5.77
2	Eastern Cottonwood	2	70	1	Loose Bark Some Exfoliating Bark	Unit 6	4.80	CV1-1	Transportation	5.77
3	Eastern Cottonwood	2	34	3	Loose Bark Other Snag with 10m	Unit 6	4.80	CV1-1	Transportation	5.77
4	Eastern Cottonwood	2	36, 35	3	Loose Bark Other Snag with 10m	Unit 6	4.80	CV1-1	Transportation	5.77
5	Manitoba Maple	2	25, 25	N/A	Crack	Unit 6	4.80	CV1-1	Transportation	5.77
6	Hybrid Willow	2	30, 40	1-3	Multi – Stem Loose Bark	Unit 6	4.80	CV1-1	Transportation	5.77
7	Black Cherry	2	40	1-3	Knot Hole	Unit 11	0.29	FOD7-a	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	1.44
8	Black Walnut	3	85	6	Dead No Branches Cavity Loose Bark Other Snag within 10m	Unit 11	0.29	FOD7-a	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	1.44
9	Hybrid Willow	2	95	N/A		Unit 13	1.04	CUM1-c	Exotic Forb Meadow	1.16
10	Hybrid Willow	2	120	N/A	Loose Bark	Unit 11	0.29	FOD7-a	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	1.44
11	Eastern Cottonwood	2	50, 35	1-3	Cavity	Unit 9	0.14	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
12	Eastern Cottonwood	2	35	N/A	Loose Bark Cavity Other Snag within 10m	Unit 9	0.14	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20

Tree Number	Tree Species ID	Height Class	DBH (cm)	Decay Class	Tree Characteristics	Unit #	Unit Hectares	ELC Code	ELC Name	ELC Hectares
13	Eastern Cottonwood	2	40	4	Loose Bark	Unit 9	0.14	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
14	Green Ash	3	25	N/A	Loose Bark	Unit 12	0.07	FOD9-2	Fresh-Moist Oak – Lowland Maple Deciduous Forest	0.07
15	Hybrid Willow	2	90	N/A	Cavity No Branches Hollow	Unit 9	0.14	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
16	Hybrid Willow	1	90, 90, 90	2	Loose Bark	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
17	Manitoba Maple	2	30, 40	2	Knot Hole	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
18	Hybrid Willow	3	100	2	Loose Bark	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
19	Hybrid Willow	3	110	N/A	Loose Bark	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
20	Eastern Cottonwood	2	80, 80	N/A	Loose Bark	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
21	Hybrid Willow	2	95	N/A	Loose Bark	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
22	Hybrid Willow	2	80, 40	N/A	Loose Bark Other Snag within 10 m	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
23	Hybrid Willow	2	90	N/A	Loose Bark Other Snag within 10 m	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20

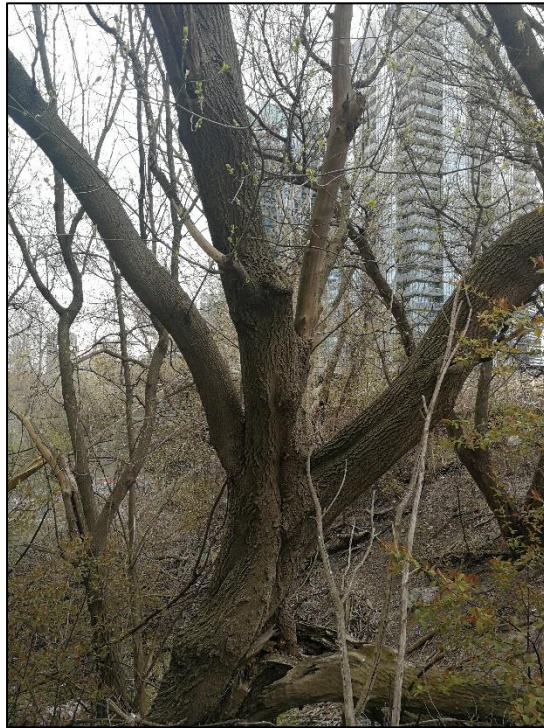
Tree Number	Tree Species ID	Height Class	DBH (cm)	Decay Class	Tree Characteristics	Unit #	Unit Hectares	ELC Code	ELC Name	ELC Hectares
24	Hybrid Willow	2	110	N/A	Loose Bark Other Snag within 10 m	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
25	Hybrid Willow	2	100	N/A	Loose Bark Other Snag within 10 m	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
26	Hybrid Willow	2	80	N/A	Loose Bark Other Snag within 10 m	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
27	Hybrid Willow	2	90	N/A	Loose Bark Other Snag within 10 m	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
18	Hybrid Willow	2	40, 50, 40	N/A	Loose Bark	Unit 8	0.27	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20

Table 1: Tri-Coloured Bat

Tree Number	Tree Species ID	Tree Status (live/dead)	DBH (cm)	Tree Characteristics	Unit #	Unit Hectares	ELC Code	ELC Name	ELC Hectares
A	Red Oak	Live	130		Unit 11	0.29	FOD7-a	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	1.44
B	Red Oak	Live	100		Unit 23	0.38	FOD7-a	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	1.44
C	Red Oak	Live	50	Open Area / Forest Gap Forest Edge	Unit 23	0.38	FOD7-a	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	1.44
D	Red Oak	Live	90	Open Area / Forest Gap Preferred Tree Species within 10m	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20

Tree Number	Tree Species ID	Tree Status (live/dead)	DBH (cm)	Tree Characteristics	Unit #	Unit Hectares	ELC Code	ELC Name	ELC Hectares
E	Red Oak	Live	50	Open Area / Forest Gap Forest Edge	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
F	Red Maple	Live	70, 30	Open Area / Forest Gap	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
G	Red Oak	Live	30, 50, 40	Open Area / Forest Gap Preferred Tree Species within 10m Multi-Stem	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
H	Red Oak	Live	30	Open Area / Forest Gap Forest Edge Preferred Tree Species within 10m	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
I	Red Oak	Live	50	Open Area / Forest Gap Forest Edge Preferred Tree Species within 10m	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20
J	Red Oak	Live	50	Open Area / Forest Gap Forest Edge Preferred Tree Species within 10m	Unit 4	0.76	FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	1.20

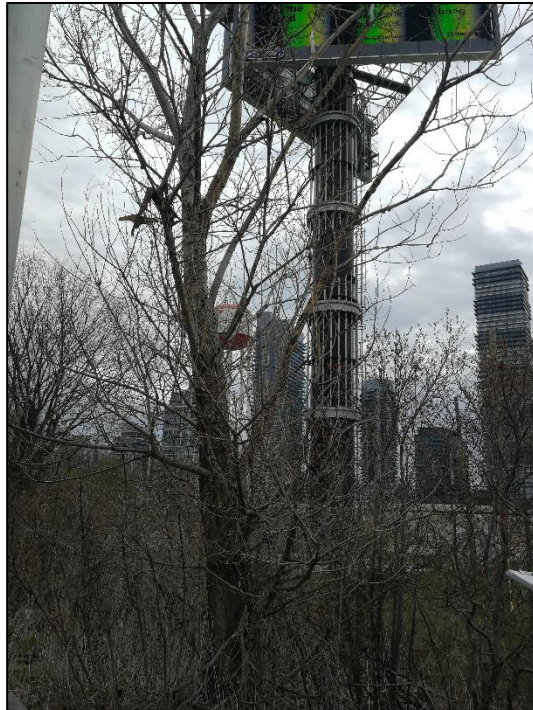
Photos of Candidate Snags for Northern Myotis and Little Brown Myotis



Photograph B-1: Tree #1 looking east (Unit 6), April 29, 2020



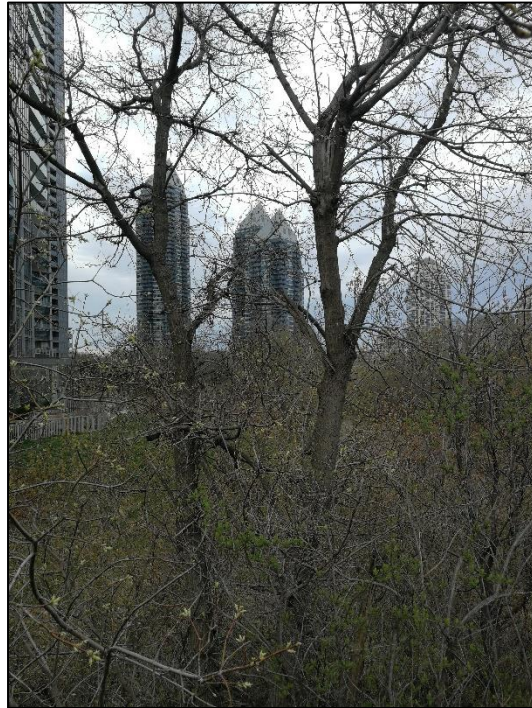
Photograph B-2: Tree #2 looking northwest (Unit 6), April 29, 2020



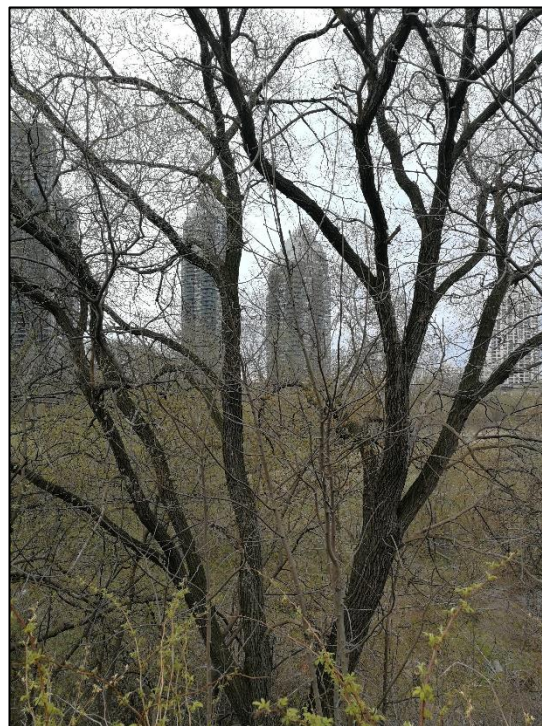
Photograph B-3: Tree #3 looking east (Unit 6), April 29, 2020



Photograph B-4: Tree #4 looking southeast (Unit 6), April 29, 2020



Photograph B-5: Tree #5 looking south (Unit 6), April 29, 2020



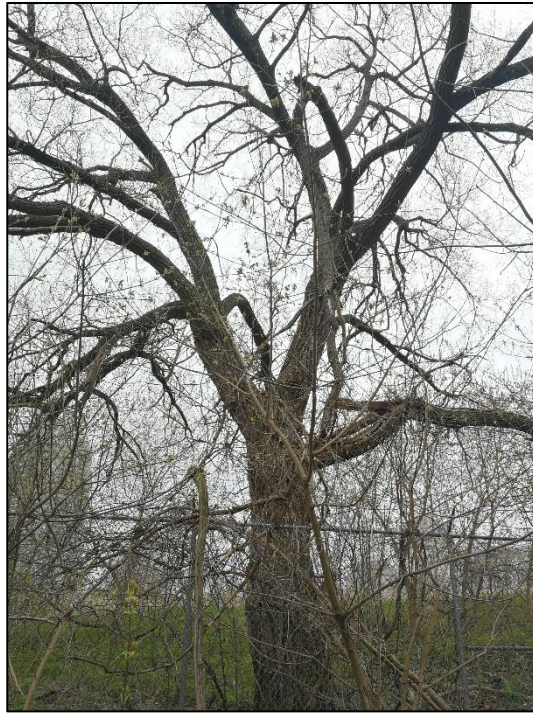
Photograph B-6: Tree #6 looking south (Unit 6), April 29, 2020



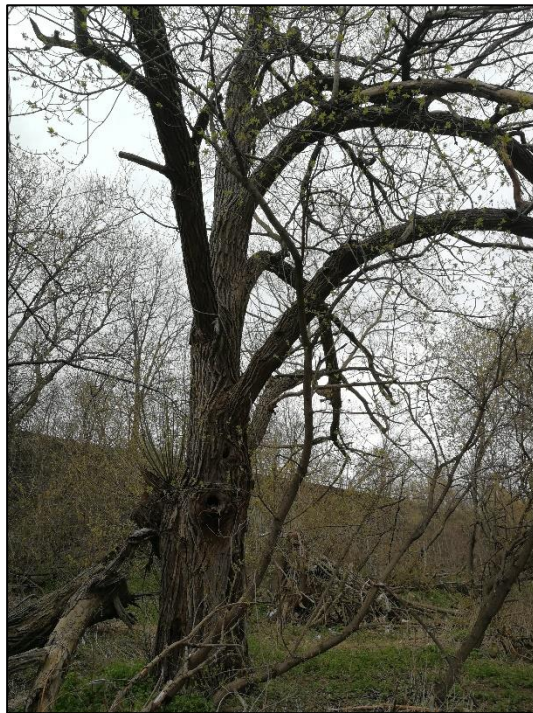
Photograph B-7: Tree #7 looking north (Unit 11), April 29, 2020



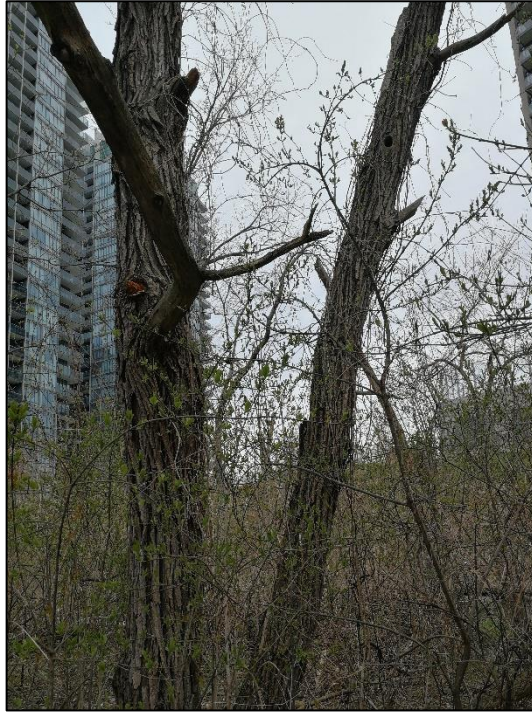
Photograph B-8: Tree #8 looking north (Unit 11), April 29, 2020



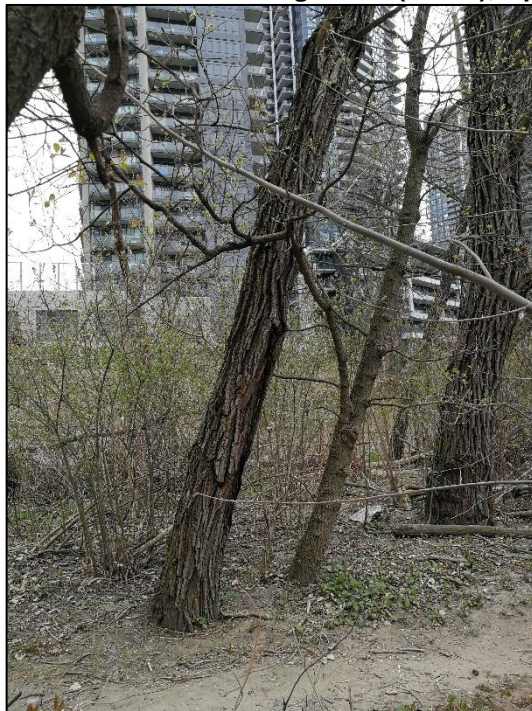
Photograph B-9: Tree #9 looking southwest (Unit 13), April 29, 2020



Photograph B-10: Tree #10 looking southwest (Unit 11), April 29, 2020



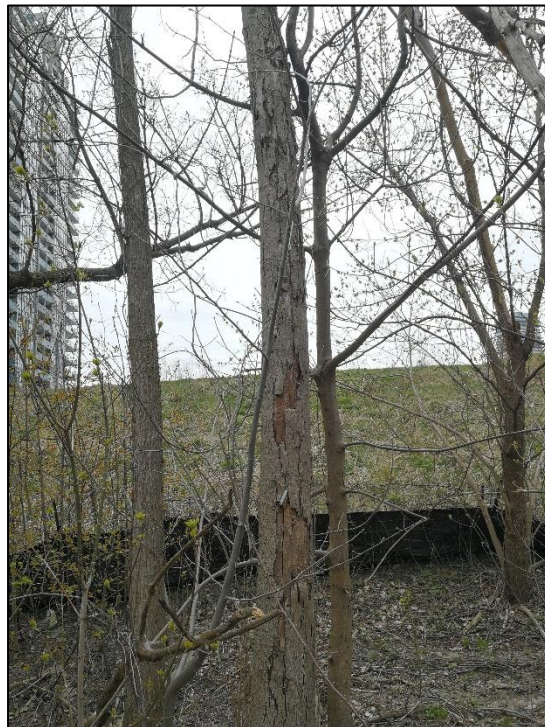
Photograph B-11: Tree #11 looking south (Unit 9), April 29, 2020



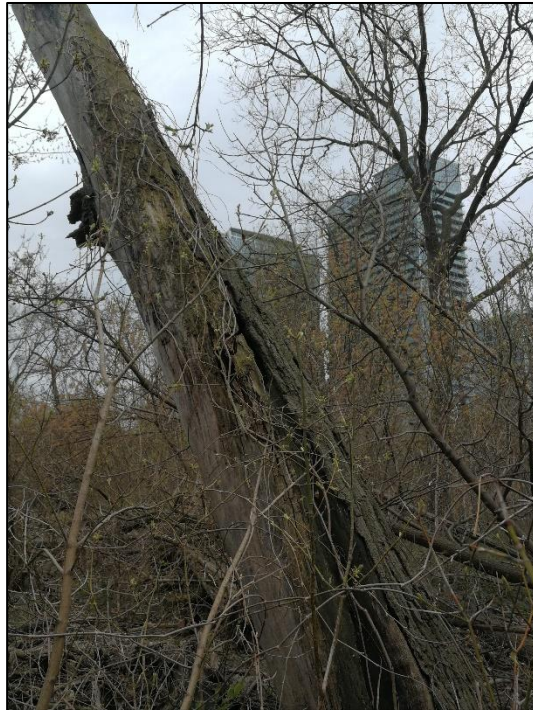
Photograph B-12: Tree #12 looking northeast (Unit 9), April 29, 2020



Photograph B-13: Tree #13 looking west (Unit 9), April 29, 2020



Photograph B-14: Tree #14 looking east (Unit 12), April 29, 2020



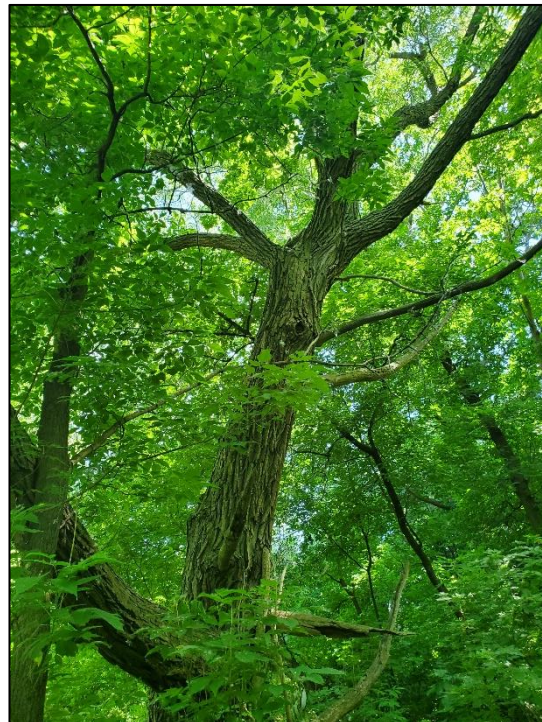
Photograph B-15: Tree #15 looking northeast (Unit 9), April 29, 2020



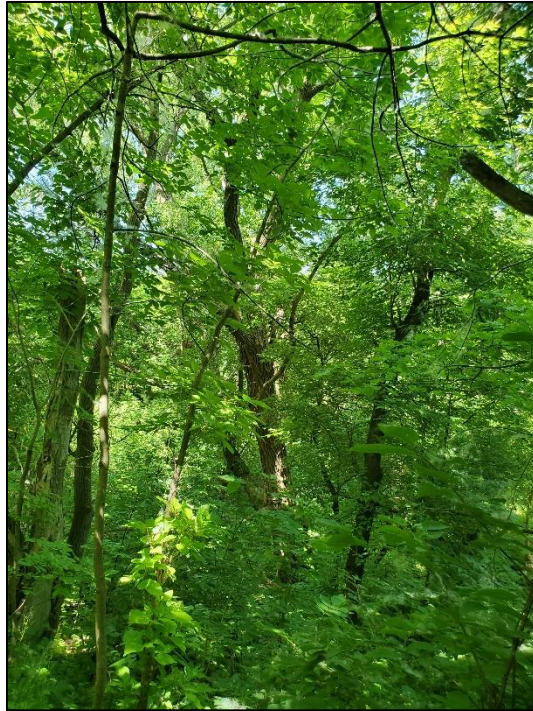
Photograph B-16: Tree #16 looking northeast (Unit 9), April 29, 2020



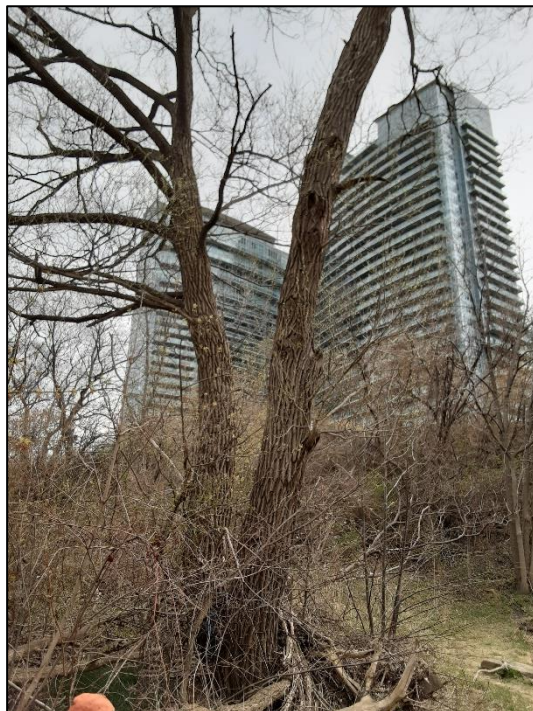
Photograph B-17: Tree #17 looking north (Unit 4), April 29, 2020



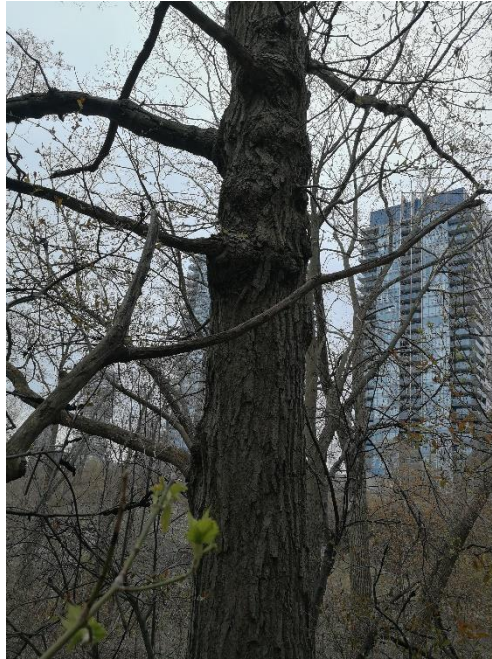
Photograph B-18: Tree #18 looking north (Unit 4), June 17, 2020



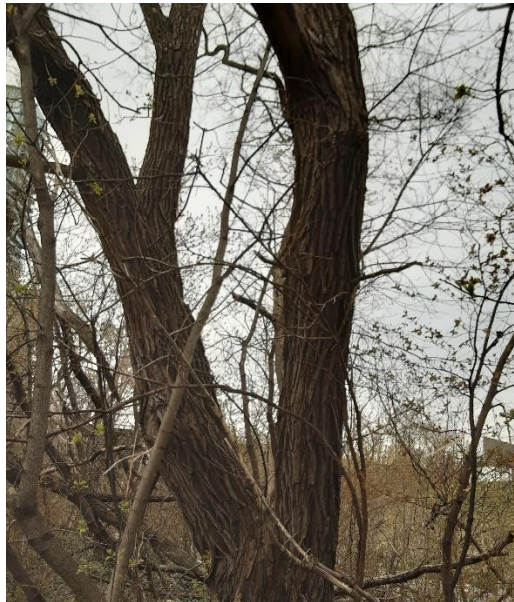
Photograph B-19: Tree #19 looking north (Unit 4), June 17, 2020



Photograph B-20: Tree #20 looking northeast (Unit 4), April 29, 2020



Photograph B-21: Tree #21 looking north (Unit 8), April 29, 2020



Photograph B-22: Tree #22 looking southwest (Unit 8), April 29, 2020



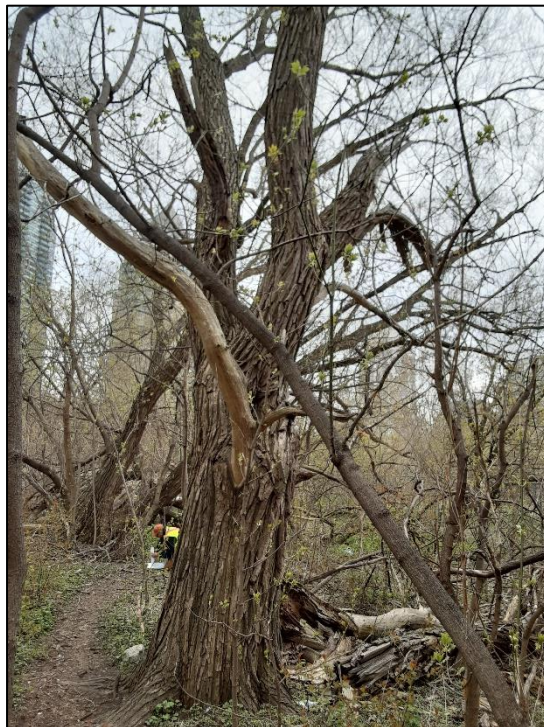
Photograph B-23: Tree #23 looking south (Unit 8), April 21, 2020



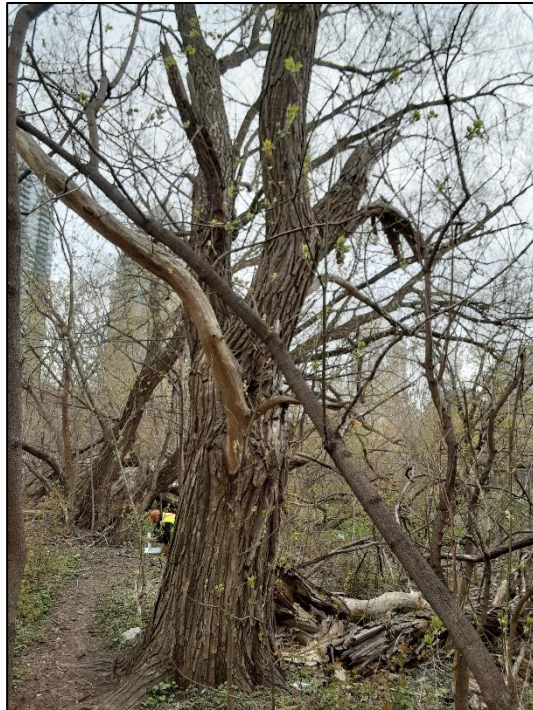
Photograph B-24: Tree #24 looking north (Unit 8), April 29, 2020



Photograph B-25: Tree #25 looking north (Unit 8), April 29, 2020



Photograph B-26: Tree #26 looking north (Unit 8), April 29

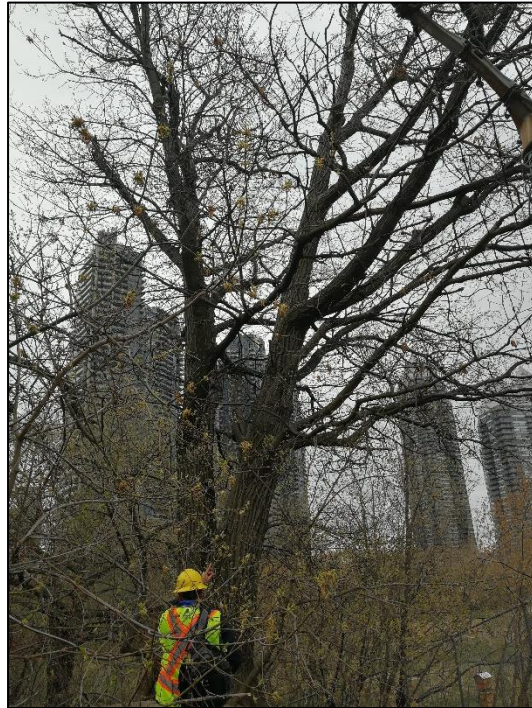


Photograph B-27: Tree #27 looking north (Unit 8), April 29



Photograph B-28: Tree #28 looking north (Unit 8), April 29

Candidate Snags for Tricoloured Bat



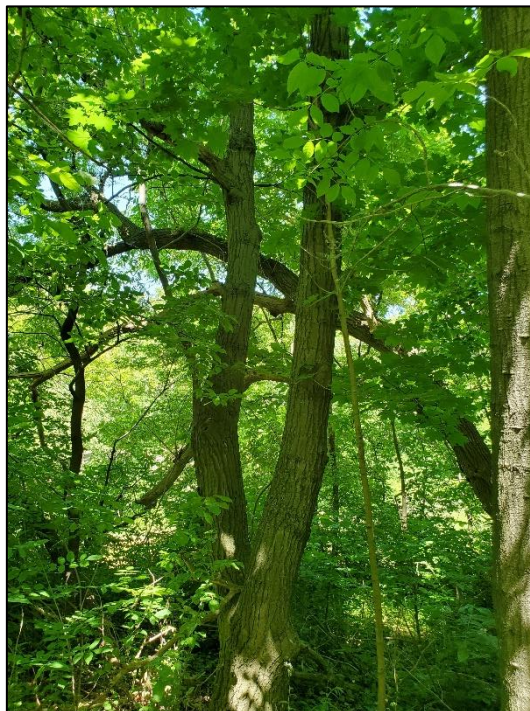
Photograph B-29: Tree A looking north (Unit 11), April 29, 2020



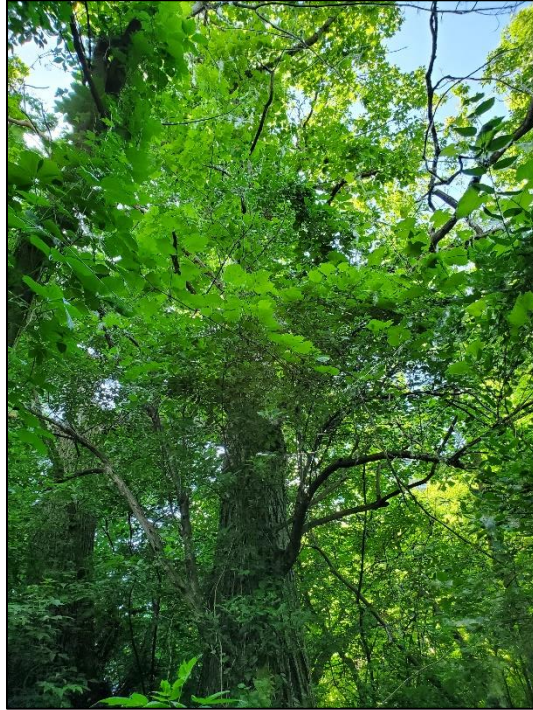
Photograph B-30: Tree B looking east (Unit 23), April 29, 2020



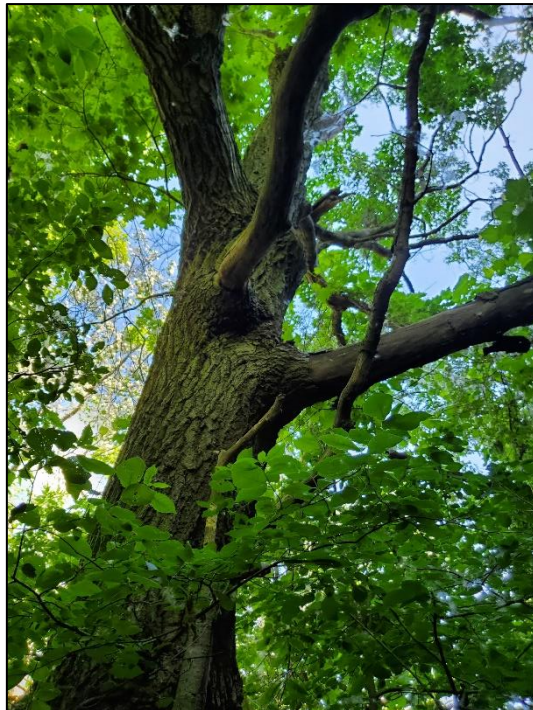
Photograph B-31: Tree C looking east (Unit 23), June 17, 2020



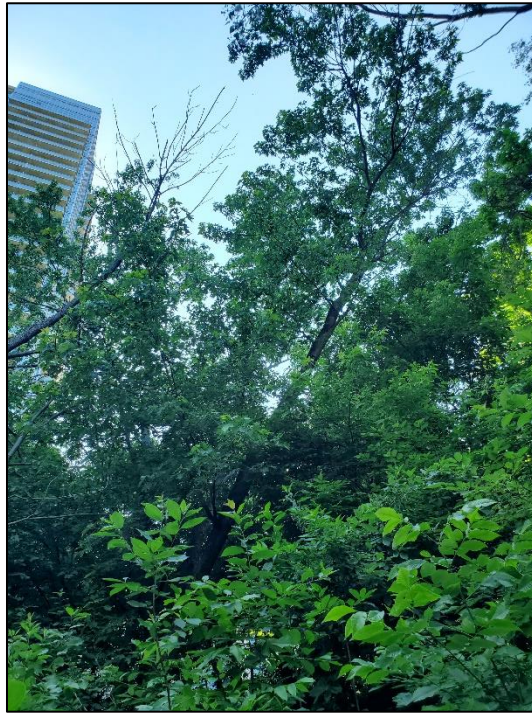
Photograph B-32: Tree D looking north (Unit 3), June 17, 2020



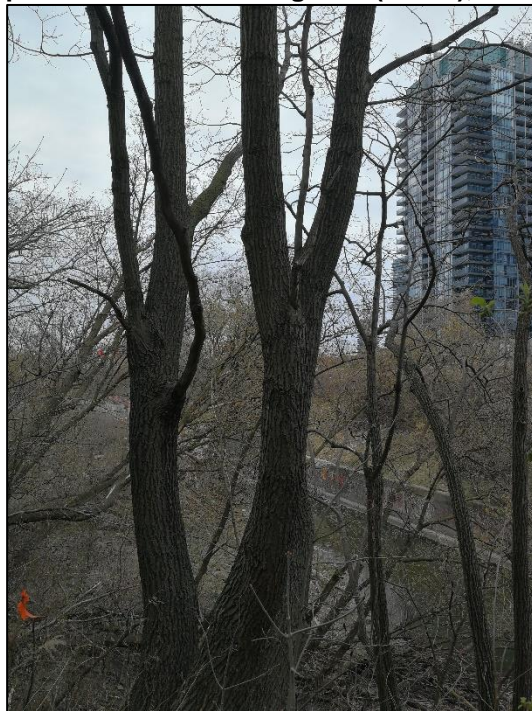
Photograph B-33: Tree E looking east (Unit 4), June 17, 2020



Photograph B-34: Tree F looking east (Unit 4), June 17, 2020



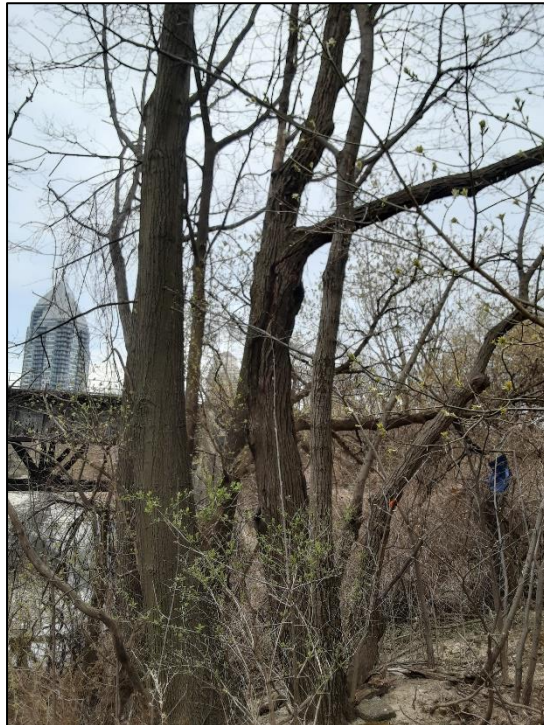
Photograph B-35: Tree G looking east (Unit 4), June 17, 2020



Photograph B-36: Tree H looking east (Unit 4), April 29, 2020



Photograph B-37: Tree I looking south (Unit 4), April 29, 2020



Photograph B-38: View of Tree J and K looking south (Unit 4), April 29, 2020

Appendix G

Breeding Bird Survey Results

Table 1: Ontario breeding Bird Atlas (OBBA) Breeding Evidence Codes

Evidence	Code	Meaning
Observed (OBS)	X	Species observed during its breeding season (no evidence of breeding). Presumed migrants should not be recorded.
Possible Breeding (PO)	H	Species observed in its breeding season in suitable nesting habitat.
	S	Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat.
Probable Breeding (PR)	P	Pair observed in their breeding season in suitable nesting habitat.
	T	Permanent territory presumed through delivery of territorial song on at least two days, at least week or more apart, at the same place.
	D	Courtship or display between a male and a female or two males, including courtship feeding or copulation.
	V	Visiting probable nest site.
	A	Agitated behaviour or anxiety calls of an adult.
	B	Brood patch on adult female or cloacal protuberance on adult male.
	N	Nest-building or excavation of nest hole.
Confirmed Breeding (CO)	DD	Distraction display or injury feigning.
	NU	Used nest or egg shell found (occupied or laid within the period of the study).
	FY	Recently fledged young or downy young, including young incapable of sustained flight.
	AE	Adults leaving or entering nest site in circumstances indicating occupied nest.
	FS	Adult carrying faecal sac.
	CF	Adult carrying food for young.
	NE	Nest containing eggs.
	NY	Nest with young seen or heard.

Table 2: Results of the Breeding Bird Surveys Conducted within the Park Lawn GO Station Study Area

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
BB1 – May 28, 2020 Start Time: 7:10, End Time: 7:20 Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	1		1	H	
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	S	
NOMO	Northern Mockingbird	<i>Mimus polyglottos</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
BB2 – May 28, 2020 Start Time: 7:37, End Time: 7:47 Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
HOSP	House Sparrow	<i>Passer domesticus</i>	2		2	X	
KILL	Killdeer	<i>Charadrius vociferus</i>	1		1	H	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	3		3	X	
BB3 – May 28, 2020 Start Time: 8:58, End Time: 9:08 Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
AMGO	American Goldfinch	<i>Spinus tristis</i>	2		2	S	
BHCO	Brown-headed Cowbird	<i>Molothrus ater</i>	1		1	S	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	2		2	S	
NOCA	Nothorn Cardinal	<i>Cardinalis cardinalis</i>	4		4	X	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	2		2	S	
MALL	Mallard	<i>Anas platyrhynchos</i>	2		2	P	
WAVI	Warbling Vireo	<i>Vireo gilvus</i>	1		1	S	
BB4 – May 28, 2020 Start Time: 9:21, End Time: 9:31 Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	S	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	2		2	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
WAVI	Warbling Vireo	<i>Vireo gilvus</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
BB5 – May 28, 2020 Start Time: 9:35, End Time: 9:45 Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	S	
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	4		4	X	Flyby
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
BB1 - June 17, 2020							
Start Time: 6:30, End Time: 6:40							
Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	2		2	H	
EUST	European Starling	<i>Sturnus vulgaris</i>	1		1	X	
RBGU	Ring-billed Gull	<i>Larus delawarensis</i>	1		1	X	Flyby
BB2 - June 17, 2020							
Start Time: 6:50, End Time: 7:00							
Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
NOMO	Northern Mockingbird	<i>Mimus polyglottos</i>	1		1	H	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	1		1	X	
EUST	European Starling	<i>Sturnus vulgaris</i>	1		1	X	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	2		2	X	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	2		2	X	
HOSP	House Sparrow	<i>Passer domesticus</i>	3		3	X	
KILL	Killdeer	<i>Charadrius vociferus</i>	5		5	FY	Family of 5
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	1		1	S	
BB3 - June 17, 2020							
Start Time: 8:25, End Time: 8:35							
Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
AMGO	American Goldfinch	<i>Spinus tristis</i>	3		3	X	
BAOR	Baltimore Oriole	<i>Icterus galbula</i>	2		2	P	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>			0	X	
BARN	Barn Swallow	<i>Hirundo rustica</i>	2		2	X	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	2		2	S	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	X	
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	X	
NRWS	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	1		1	X	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	X	
MODO	Mourning Dove	<i>Zenaida macroura</i>	1		1	X	
HOFI	House Finch	<i>Haemorhous mexicanus</i>	1		1	X	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	X	
KIFI	Belted Kingfisher	<i>Megaceryle alcyon</i>	1		1	H	
BB4 - June 17, 2020 Start Time: 8:47, End Time: 8:57 Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
WAVI	Warbling Vireo	<i>Vireo gilvus</i>		1	1	X	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
NOFL	Northern Flicker	<i>Colaptes auratus</i>	1		1	X	

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
BB5 - June 17, 2020							
Start Time: 9:04, End Time: 9:14							
Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	5		5	X	Flyby ~ 5
SOSP	Song Sparrow	<i>Melospiza melodia</i>	2		2	S	
RODO	Rock Dove	<i>Columba livia</i>	1		1	X	Flyby
RBGU	Ring-billed Gull	<i>Larus delawarensis</i>	1		1	X	Flyby
BB1 – July 9, 2020							
Start Time: 6:38, End Time: 6:48							
Temperature: 23C, Wind Speed/Direction: 2 NW, Cloud Cover: 0%, Precipitation: 0 mm							
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	1		1	H	Adult
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
RBGU	Ring-billed Gull	<i>Larus delawarensis</i>	1		1	X	Flyby
EUST	European Starling	<i>Sturnus vulgaris</i>	3		3	X	Flyby
BB2 – July 9, 2020							
Start Time: 6:55, End Time: 7:05							
Temperature: 23C, Wind Speed/Direction: 2 NW, Cloud Cover: 0%, Precipitation: 0 mm							
NOMO	Northern Mockingbird	<i>Mimus polyglottos</i>	1		1	H	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1		1	H	

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
BHCO	Brown-headed Cowbird	<i>Molothrus ater</i>	1		1	X	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	H	
HOSP	House Sparrow	<i>Passer domesticus</i>	2		2	H	
BANS	Bank Swallow	<i>Riparia riparia</i>	1		1	X	
BB3 – July 9, 2020 Start Time: 8:23, End Time: 8:33 Temperature: 25C, Wind Speed/Direction: 1 NW, Cloud Cover: 0%, Precipitation: 0 mm							
AMRO	American Robin	<i>Turdus migratorius</i>	3		3	S	
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	H	
BARN	Barn Swallow	<i>Hirundo rustica</i>	1		1	X	Flyby
BANS	Bank Swallow	<i>Riparia riparia</i>	2		2	X	Flyby
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
HOSP	House Sparrow	<i>Passer domesticus</i>	1		1	H	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
KIFI	Belted Kingfisher	<i>Megasceryle alcyon</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
BB4 – July 9, 2020 Start Time: 8:41, End Time: 8:51 Temperature: 25C, Wind Speed/Direction: 1 NW, Cloud Cover: 0%, Precipitation: 0 mm							
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
RBGU	Ring-billed Gull	<i>Larus delawarensis</i>	1		1	X	Flyby
KIFI	Belted Kingfisher	<i>Megasceryle alcyon</i>	1		1	S	

Species			Relative Abundance by Distance			Breeding Evidence	Observation Notes
Code	Common Name	Scientific Name	0 100m	>100m	Total		
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	2		2	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
BB5 – July 9, 2020 Start Time: 8:56, End Time: 9:06 Temperature: 25C, Wind Speed/Direction: 1 NW, Cloud Cover: 0%, Precipitation: 0 mm							
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
RODO	Rock Dove	<i>Columba livia</i>	1		1	H	
EUST	European Starling	<i>Sturnus vulgaris</i>	5		5	X	Flyby

Appendix H

Ecological Land Classification

Unit 1: OAO1-T - Turbid Open Aquatic

Location: This unit is found within the western portion of the Study Area and represents the entirety of Mimico Creek.

Description: The creek flows north to south, eventually discharging into Lake Ontario several hundred metres south of the Study Area. Much of the creek has been channelized with the banks stabilized using concrete and rip rap. Other sections of the stream are more naturalized and provide wildlife habitat. Riparian areas are highly disturbed with weedy vegetation but also include some native flora. Within the Study Area there is limited aquatic macrophytes within the creek channel. Shoreline vegetation is listed in the descriptions of the of the adjacent units. Walking trails and debris are common along both sides of the creek.



Photo H-1: Unit 1 Open water Aquatic.

Unit 2: FOD 7-A - Fresh-moist Manitoba Maple Lowland Deciduous Forest

Location: This unit is situated immediately south of the Gardiner Expressway off-ramp and west of Park Lawn Road.

Description: This unit has transitioned from a cultural meadow into a young forested ecosite with Manitoba maple as a dominant tree with black locust and green ash as the subdominant species. The understory is dense and composed of the same species as the canopy. Most canopy trees are < 20 m in height with a Diameter at Breast Height (DBH) in the 10 to 24 cm category. Black Locust (*Robinia pseudoacacia*) is common throughout the canopy and also dominates the understory. The ground cover is continuous and dominated by non-native invasive species such as Garlic Mustard (*Alliaria petiolate*). The site is highly disturbed with trails, garbage and evidence of past inhabitation composed of crude shelters and furniture.

Table H-1: Unit 2 Stand Description

STAND DESCRIPTION Unit 2										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	4	Acerneg > Robipse = Fraxpen						
2	SUB-CANOPY	3	3	Robpse = Lonitat = Acerneg > Ulmuame						
3	UNDERSTORY	5	4	Phalaru > Poaprat = Allipet = Solialt						
4	GRD. LAYER	6	4	Poaprat = Allipet = Phalaru > Gerarob						
HT CODES: 1 - >25m 2 - 10<HT<=25m 3 - 2<=10m 4 - 1<HT<=2m 5 - 0.5<HT<=1m 6 - 0.2<HT<=0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0%<CVR<=10% 2 - 10<CVR<=25% 3 - 25<CVR<=60% 4 - CVR>60%										
STAND COMPOSITION:								BA: NA		
SIZE CLASS ANALYSIS (dbh, cm):				A	<10	A	10 to 24	O	25 to 50	R > 50
STANDING SNAGS:				R	<10	R	10 to 24	R	25 to 50	N > 50
DEADFALL/LOGS				R	<10	R	10 to 24	R	25 to 50	N > 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										



Photo H-2: Unit 2 Fresh-moist Manitoba Maple Lowland Deciduous Forest.

Unit 3: MAS2-1A - Broad-leaved Cattail Mineral Shallow Marsh

Location: This unit is situated east of Mimico Creek and north of the rail corridor as an inclusion within the larger Fresh Moist Manitoba Maple Lowland Deciduous Forest.

Description: The ecosite has formed and is maintained by water that flows from an underground drainage culvert. The culvert mouth extends into the Manitoba Maple woodland and the drainage water has created a small (5 m²) pool. Surrounding the pool is a small marsh dominated by hybrid cattail (*Typha glauca*) with few other wetland species, such as Jewelweed (*Impatiens capensis*) and red-osier dogwood (*Cornus sericea*). Phalaris, which is often associated with wetlands but not wetland dependent, is present as well. Soils are mineral with a shallow (~10 cm) organic layer. Note: the most accurate ELC code is MAS2-1A, even though the dominant vegetation is *Typha glauca* due to the absence of an ecosite characterized by the dominance of hybrid cattails. The polygon is well below the normal mappable size, however, has been included as previously done by TRCA. Due to its small size it is not expected to provide any significant wildlife habitat but may provide limited amphibian, bird, reptile or aquatic mammal habitat.



Photo H-3: Unit 3 Broad-leaved Cattail Mineral Shallow Marsh

Unit 4: FOD7-3 - Fresh-moist Willow Lowland Deciduous Forest

Location: This unit is situated along the west side of Mimico Creek north of the rail corridor. This ecosite continues south of the rail corridor and is identified as Units 8 and 9.

Description: This ecosite continues south of the rail corridor and is identified as Units 8 and 9. This willow-dominated riparian forest occurs in the western floodplain of Mimico Creek from the northern to southern extent of the Study Area. The forest has a closed canopy of Crack Willow (*Salix fragilis*), Manitoba Maple (*Acer negundo*) and Green Ash (*Fraxinus pennsylvanica*), typically under 20 m in height and DBH 10-24 cm. The understory is dense and composed of the same species as the canopy. Native lowland forest species are for the most part lacking although Basswood (*Tilia Americana*) is a notable exception. The ground cover, like most ecosites in the Study Area is dominated by non-native weedy species. The unit is highly disturbed with trails and garbage.

Table H-2: Unit 4 Stand Description

STAND DESCRIPTION Unit 4											
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)							
1	CANOPY	2	4	Salifra > Acerneg > Fraxpen > Fuglnig							
2	SUB-CANOPY	3	3	Acerneg > Fraxpen > Juglnig > Vitaria							
3	UNDERSTORY	4	3	Solidalt = Allipet > Acerneg							
4	GRD. LAYER	6	4	Allipet > Solialt							
HT CODES: 1 - >25m 2 - 10<HT <=25m 3 - 2<=10m 4 - 1<HT <=2m 5 - 0.5<HT <=1m 6 - 0.2<HT <=0.5 7 - HT<0.2m CVR CODES: 0 - NONE 1 - 0%<CVR <=10% 2 - 10<CVR <=25% 3 - 25<CVR <=60% 4 - CVR>60%											
STAND COMPOSITION:								BA: NA			
SIZE CLASS ANALYSIS (dbh, cm):				R	<10	A	10 to 24	A	25 to 50	O	> 50
STANDING SNAGS:				A	<10	O	10 to 24	O	25 to 50	R	> 50
DEADFALL/LOGS				R	<10	O	10 to 24	O	25 to 50	R	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT											



Photo H-4: Unit 4 Fresh-moist Willow Lowland Deciduous Forest along Mimico Creek.

Unit 5: CUW1-A3 - Native Deciduous Successional Woodland

Location: This unit runs adjacent to and north of the rail corridor west of Park Lawn Road.

Description: The ecosite is positioned at the top of the ravine adjacent to the rail corridor and is drier than the adjacent woodland. Soils are sandy and anthropogenic. The ecosite is dominated by scattered or patches of trees, particularly black locust (*Robinia pseudoacacia*), Eastern Cottonwood (*Populus deltoides*), Manitoba Maple (*Acer negundo*) and Norway maple (*Acer platanoides*). Trees are typically < 20 m and in the 10 -24 cm DBH range. Shrubs are scattered and the ground cover is predominantly grass with goldenrod (*Solidago spp.*) flourishing in the more open areas.

Table H-3: Unit 5 Stand Description

STAND DESCRIPTION Unit 5									
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)					
1	CANOPY	2	4	Robipse > Popudel > Acerneg					
2	SUB-CANOPY								
3	UNDERSTORY	4	2	Rhustyp . >Lorntat > Robipse > Acerneg					
4	GRD. LAYER	5	4	Bromine > Solialt > Cyanros					
HT CODES: 1 - >25m 2 - 10<HT </=25m 3 - 2</=10m 4 - 1<HT </=2m 5 - 0.5<HT </=1m 6 - 0.2<HT </=0.5 7 - HT<0.2m									
CVR CODES: 0 - NONE 1 - 0%<CVR </=10% 2 - 10<CVR </=25% 3 - 25<CVR </=60% 4 - CVR>60%									
STAND COMPOSITION:							BA:		
SIZE CLASS ANALYSIS (dbh, cm):			O	<10	O	10 to 24	N	25 to 50	> 50
STANDING SNAGS:			R	<10	R	10 to 24	N	25 to 50	> 50
DEADFALL/LOGS			R	<10	R	10 to 24	N	25 to 50	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT									



Photo H-5: Unit 5 Native Deciduous Successional Woodland.

Unit 6: CV1-1 - Transportation Corridor

Location: This unit represents the Gardiner Expressway, Park Lawn Road and the rail corridor. The unit bisects the Study Area from north to south and east to west.

Description: Vegetation along the edges of this unit are captured in the descriptions of adjacent units.



Photo H-6: Unit 6 Transportation Corridor.

Unit 7: CV1-1 - Transportation Corridor

Location: This unit is situated in the northeast corner of the Study Area.

Description: The unit represents a parking lot associated with the Ontario Food Terminal.



Photo H-7: Unit 7 South lot of the Ontario Food Terminal.

Unit 8: FOD7-3 - Fresh-moist Willow Lowland Deciduous Forest

Location: This unit is situated south of the rail corridor along the west side of Mimico Creek.

Description: This willow-dominated riparian forest occurs in the western floodplain of Mimico Creek from the northern to southern extent of the Study Area. The forest has a closed canopy of Crack Willow (*Salix fragilis*), Manitoba Maple (*Acer negundo*) and Norway Maple (*Acer platanoides*), typically under 20 m in height and DBH 10-24 cm. The understory is dense and composed of the same species as the canopy. While the unit is dominated by non-native species, Basswood (*Tilia Americana*) is a notable exception. The ground cover, like most ecosites on the Study Area is dominated by non-native invasive species. The unit is highly disturbed with trails and garbage.

Table H-4: Unit 8 Stand Description

STAND DESCRIPTION Unit 8										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	4	Salixfrag > Acerneg > Acerpla						
2	SUB-CANOPY	3	3	Acerneg > Rhustyp > Salix spp. > Juglnig						
3	UNDERSTORY	4	3	Allipet > Solialt > Bromine						
4	GRD. LAYER	6	4	Bromine > Torijap > Herasph > Gerarob						
HT CODES: 1 - >25m 2 - 10<HT <=/25m 3 - 2<=/10m 4 - 1<HT <=/2m 5 - 0.5<HT <=/1m 6 - 0.2<HT <=/0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0<CVR <=/10% 2 - 10<CVR <=/25% 3 - 25<CVR <=/60% 4 - CVR>60%										
STAND COMPOSITION:								BA: NA		
SIZE CLASS ANALYSIS (dbh, cm):			A	<10	A	10 to 24	O	25 to 50	O	> 50
STANDING SNAGS:			A	<10	A	10 to 24	R	25 to 50	R	> 50
DEADFALL/LOGS			A	<10	O	10 to 24	R	25 to 50	R	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										

Unit 9: FOD7-3 - Fresh-moist Willow Lowland Deciduous Forest

Location: This unit is situated along the east side of Mimico Creek at the southern end of the Study Area. It is bordered to the west by the creek and to the east by residential development.

Description: This is a dominant ecosite within the riparian zone of Mimico Creek. It differs from other riparian forested ecosites by the dominance of mature willow with a complement of other large native trees including Basswood (*Tilia Americana*) and Eastern Cottonwood (*Populus deltoides*). The mature willows appear to be mostly *Salix fragilis* although *Salix nigra* and hybrids are present as well. Most trees are in the 10 – 24 cm DBH range although larger specimens are found throughout. The younger woody and herbaceous communities are dominated by non-native vegetation.

Table H-5: Unit 9 Stand Description

STAND DESCRIPTION Unit 9										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	3	Salifra > Popudel >> Tiliame = Acerneg						
2	SUB-CANOPY	3	3	Acerneg > Pseurob = Prunvir > Vitiria						
3	UNDERSTORY	4	3	Prunvir = Vitirip > = Lonitat > Sloialt						
4	GRD. LAYER	6	4	Allipet > Partqui > Solialt = Prunvir						
HT CODES: 1 - >25m 2 - 10<HT <=25m 3 - 2<=10m 4 - 1<HT <=2m 5 - 0.5<HT <=1m 6 - 0.2<HT <=0.5 7 - HT<0.2m CVR CODES: 0 - NONE 1 - 0%<CVR <=10% 2 - 10<CVR <=25% 3 - 25<CVR <=60% 4 - CVR>60%										
STAND COMPOSITION:								BA: NA		
SIZE CLASS ANALYSIS (dbh, cm):				A	<10	A	10 to 24	O	25 to 50	O > 50
STANDING SNAGS:				O	<10	O	10 to 24	R	25 to 50	R > 50
DEADFALL/LOGS				A	<10	O	10 to 24	O	25 to 50	R > 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										



Photo H-9: Unit 9 Upper Slope of the Fresh-moist Willow Lowland Deciduous Forest.

Unit 10: CUM1-B - Exotic Cool Season Grass Old Field Meadow

Location: This unit is located west of Park Lawn Road along the southern perimeter of the Study Area.

Description: This unit is a vacant lot on Park Lawn Road that extends westward towards Mimico Creek. The lot was previously classified by TRCA as an anthropogenic sand barrens but has now revegetated enough to be considered a cultural meadow, with species such as chicory (*Cichorium intybus*), garlic mustard (*Alliaria petiolate*), brome (*Bromus spp.*), sweet-white clover (*Melilotus albus*), St. John's wort (*Hypericum perforatum*), wild carrot (*Daucus carota*), coltsfoot (*Tussilago farfara*) and birds-foot trefoil (*Lotus corniculatus*). A few saplings of eastern cottonwood (*Populus deltoides*) can also be found. The substrate is composed of fill, including asphalt, medium sands, coarse stone and cobble.



Photo H-10: Unit 10 Exotic Cool Season Grass Old Field Meadow (vacant lot along Park Lawn Road).

Unit 11: FOD7-A - Fresh-moist Manitoba Maple Lowland Deciduous Forest

Location: This unit is situated immediately south of the rail corridor and north of the brownfield site.

Description: The unit is dominated by mature Willow (*Salix spp.*) and Manitoba Maple (*Acer negundo*) with scattered Green Ash (*Fraxinus pennsylvanica*) and Black Walnut (*Juglans nigra*). Trees are < 20 m with average DBH in the 10- 24 cm category. The understory is dense and composed of the same species as the canopy. The ground cover is continuous and dominated by non-native invasive species such as Garlic Mustard. The site is highly disturbed with trails, garbage and evidence of past inhabitation composed of crude shelters and furniture. Soils are a mixture of native alluvial soils and fill.

Table H-6: Unit 11 Stand Description

STAND DESCRIPTION Unit 11										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	4	Salifrag > Acerneg > Fraxpen > Juglnig						
2	SUB-CANOPY	3	3	Acerneg > Fraxpen > Jugnig > Vitarip						
3	UNDERSTORY	5	3	Solialt = Allipet > Acerneg						
4	GRD. LAYER	6	4	Alipet > Solialt						
HT CODES: 1 - >25m 2 - 10<HT</=25m 3 - 2</=10m 4 - 1<HT</=2m 5 - 0.5<HT</=1m 6 - 0.2<HT</=0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0%<CVR</=10% 2 - 10<CVR</=25% 3 - 25<CVR</=60% 4 - CVR>60%										
STAND COMPOSITION:							BA: NA			
SIZE CLASS ANALYSIS (dbh, cm):			R	<10	A	10 to 24	A	25 to 50	O	> 50
STANDING SNAGS:			A	<10	O	10 to 24	O	25 to 50	R	> 50
DEADFALL/LOGS			R	<10	O	10 to 24	O	25 to 50	R	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										



Photo H-11: Unit 11 Fresh-moist Manitoba Maple Lowland Deciduous Forest.

Unit 12: FOD9-2 - Fresh-moist Oak-lowland Maple Deciduous Forest

Location: This unit is situated on the east side of Mimico Creek at the top of the ravine and west of the recreational trail.

Description: This unit represents an older, naturalized forest community found on the side of the ravine. Below is the younger Fresh Moist Willow Lowland Deciduous Forest community and above is a park-like area west of the condominium buildings on Park Lawn Road. The canopy is dominated by mature Red Oak (*Quercus rubra*) (DBH 25 – 50 cm) with Black Walnut (*Juglans nigra*) and Crack Willow (*Salix fragilis*) subdominant. There is limited regeneration of canopy species with the understory dominated by Staghorn Sumac (*Rhus typhina*) and Choke Cherry (*Prunus virginiana*) with Green Ash (*Fraxinus pennsylvanica*) and *Salix spp.* also present. Herbaceous species, mostly non-native and invasive, cover the forest floor.

Table H-7: Unit 12 Stand Description

STAND DESCRIPTION Unit 12										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	3	Querrub > Juglnig = Salifra > Acerrub						
2	SUB-CANOPY			NA						
3	UNDERSTORY	5	4	Rhustyp = Prunuvir > Fraxpen = Salifra						
4	GRD. LAYER	7	4	Dauccar = Solialt > Cirsarv > Tripper						
HT CODES: 1 - >25m 2 - 10<HT <=25m 3 - 2<=10m 4 - 1<HT <=2m 5 - 0.5<HT <=1m 6 - 0.2<HT <=0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0%<CVR <=10% 2 - 10<CVR <=25% 3 - 25<CVR <=60% 4 - CVR>60%										
STAND COMPOSITION:								BA: NA		
SIZE CLASS ANALYSIS (dbh, cm):				A	<10	A	10 to 24	R	25 to 50	R > 50
STANDING SNAGS:				R	<10	R	10 to 24	N	25 to 50	N > 50
DEADFALL/LOGS				N	<10	N	10 to 24	R	25 to 50	N > 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										

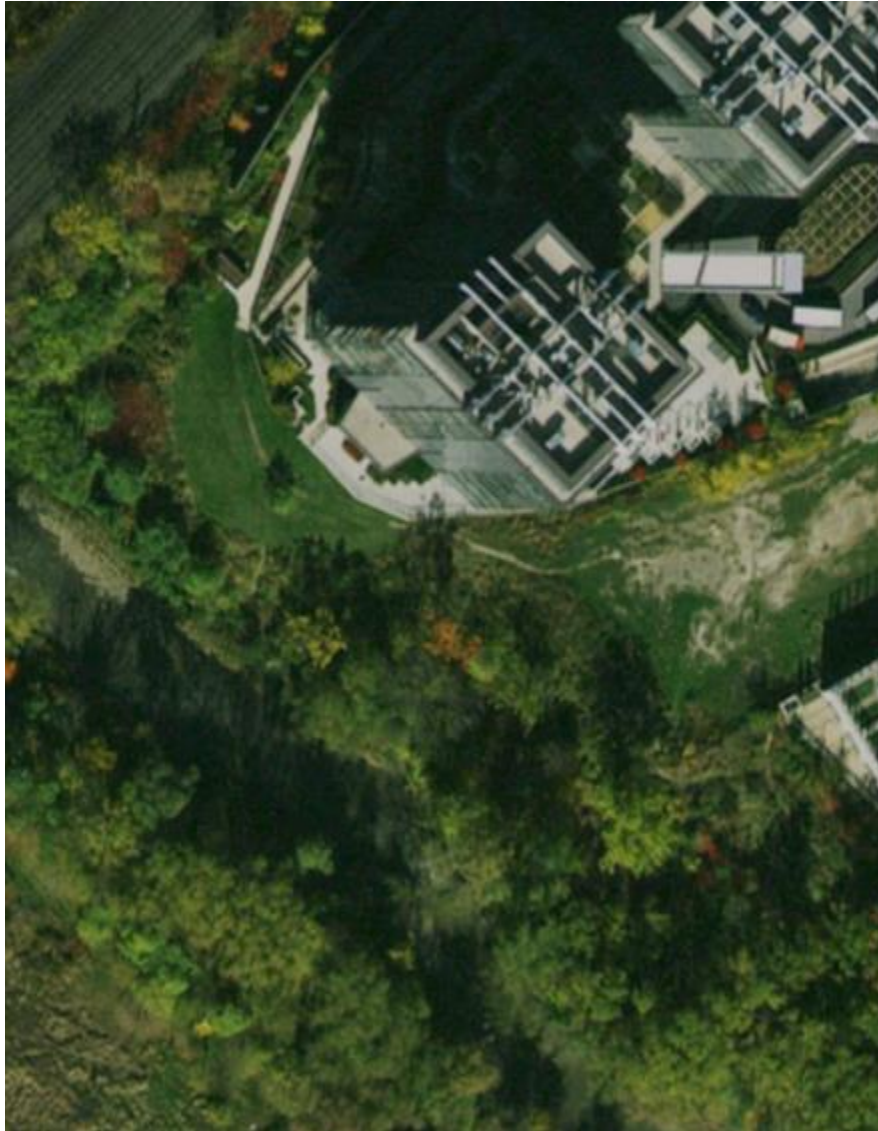


Photo H-12: Unit 12 Fresh- moist Oak-lowland Maple Deciduous Forest.

Unit 13: CUM1-C - Exotic Forb Meadow

Location: This unit is found at the southwest corner of the Study Area.

Description: The unit is a brownfield site enclosed by page-wire fencing. It has been planted with non-native grasses and non-native herbaceous species are abundant. Shrubs and small trees are beginning to appear along the edges and sporadically throughout the unit.

Table H-8: Unit 13 Stand Description

STAND DESCRIPTION 13										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	3	1	Salix spp. > Popudel = Juglnig = Lonitat						
2	SUB-CANOPY			NA						
3	UNDERSTORY			NA						
4	GRD. LAYER	5	4	Poaprat = Brominr = Agroalb = Phalaru						
HT CODES: 1 - >25m 2 - 10<HT </=25m 3 - 2</=10m 4 - 1<HT </=2m 5 - 0.5<HT </=1m 6 - 0.2<HT </=0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0%<CVR </=10% 2 - 10<CVR </=25% 3 - 25<CVR </=60% 4 - CVR>60%										
STAND COMPOSITION:								BA:		
SIZE CLASS ANALYSIS (dbh, cm):				A	<10	O	10 to 24	R	25 to 50	N > 50
STANDING SNAGS:				A	<10	A	10 to 24	N	25 to 50	N > 50
DEADFALL/LOGS				O	<10	R	10 to 24	N	25 to 50	N > 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										



Photo H-13: Unit 13, fenced brown field site.

Unit 14: CVR-2 - High Density Residential

Location: This unit is situated west of Park Lawn Road and south of the rail corridor.

Description: The unit represents a mix of commercial and high-rise residential buildings.



Photo H-14: Unit 14 Commercial and high-rise residential buildings.

Unit 15: CVR-2 - High Density Residential

Location: This unit is situated west of Park Lawn Road and south of the rail corridor.

Description: The unit represents a mix of commercial and high-rise residential buildings.



Photo H-15: Unit 15 Commercial and high-rise residential buildings.

Unit 16: CUW1-A3 - Native Deciduous Cultural Woodland

Location: This unit is situated north of the rail corridor at the western end of the Study Area.

Description: This cultural woodland is the western, upland component of the forested ecosites west of the creek and north of and adjacent to the rail corridor. The ecosite is dominated by scattered or patches of trees, particularly black locust (*Robinia pseudoacacia*), eastern cottonwood (*Populus deltoides*) and Norway maple (*Acer platanoides*). Trees are typically < 20 m and in the 10 -24 cm DBH range. Shrubs, such as staghorn sumac (*Rhus typhina*) and Tartarian honeysuckle (*Lonicera tatarica*), are common. The groundcover is predominantly smooth brome (*Bromus inermis*) with native goldenrods (*Solidago spp.*) and non-native invasive species such as dog strangling vine (*Vincetoxicum rossicum*).

Table H-9: Unit 16 Stand Description

STAND DESCRIPTION Unit 16									
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)					
1	CANOPY	2	4	Robipse > Popudel > Acerneg					
2	SUB-CANOPY								
3	UNDERSTORY	4	2	Rhustyp . >Lorntat > Robipse > Acerneg					
4	GRD. LAYER	5	4	Bromine > Solialt > Cyanros					
HT CODES: 1 - >25m 2 - 10<HT <=25m 3 - 2<=10m 4 - 1<HT <=2m 5 - 0.5<HT <=1m 6 - 0.2<HT <=0.5 7 - HT<0.2m									
CVR CODES: 0 - NONE 1 - 0%<CVR <=10% 2 - 10<CVR <=25% 3 - 25<CVR <=60% 4 - CVR>60%									
STAND COMPOSITION:							BA:		
SIZE CLASS ANALYSIS (dbh, cm):			O	<10	O	10 to 24	N	25 to 50	> 50
STANDING SNAGS:			R	<10	R	10 to 24	N	25 to 50	> 50
DEADFALL/LOGS			R	<10	R	10 to 24	N	25 to 50	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT									



Photo H-16: Unit 16 Native Deciduous Cultural Woodland.

Unit 17: CUT1-C - Exotic Cultural Thicket

Location: This unit is located west of Park Lawn Road and between the Gardiner Expressway and the expressway access road.

Description: This anthropogenic site has transformed from a cultural meadow into a cultural thicket. The site is dry with a substrate of non-native soils of sand and cobble. The site is a mixture of open areas and thickets of shrubs and small trees. The dominant trees are small specimens of Russian Olive (*Elaeagnus angustifolia*) and Manitoba maple (*Acer negundo*). Shrubs include Staghorn Sumac (*Rhus typhina*), Eastern Red Cedar (*Juniperus virginiana*) and smaller specimens of tree species. The ground cover is weedy, with mostly non-native grasses, such as smooth brome (*Bromus inermis*) and noxious weeds.

Table H-10: Unit 17 Stand Description

STAND DESCRIPTION Unit 17											
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)							
1	CANOPY	2	3	Elaeang > Acerneg							
2	SUB-CANOPY			NA							
3	UNDERSTORY			Rhustyp > Elaeang = Acerneg							
4	GRD. LAYER			Bromine > Solialt > Dipsful							
HT CODES: 1 - >25m 2 - 10<HT <=25m 3 - 2<=10m 4 - 1<HT <=2m 5 - 0.5<HT <=1m 6 - 0.2<HT <=0.5 7 - HT<0.2m											
CVR CODES: 0 - NONE 1 - 0%<CVR <=10% 2 - 10<CVR <=25% 3 - 25<CVR <=60% 4 - CVR>60%											
STAND COMPOSITION:							BA:				
SIZE CLASS ANALYSIS (dbh, cm):				O	<10	R	10 to 24	N	25 to 50	N	> 50
STANDING SNAGS:				N	<10	N	10 to 24		25 to 50	N	> 50
DEADFALL/LOGS				N	<10	N	10 to 24		25 to 50	N	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT											



Photo H-17: Unit 17 Exotic Cultural Thicket located between the Gardiner Expressway and access road.

Unit 18: CUT1-C - Exotic Cultural Thicket

Location: This Unit is a perched triangular thicket found immediately east of Park Lawn Road, south of the Gardiner Expressway, and north of the rail corridor.

Description: The unit is perched with steep inclines above the road and rail corridor surrounding its three sides. The site is mesic-dry and dominated by native and non-native old-field successional species, such as tall goldenrod (*Solidago gigantea*) and cool-season grasses. The site is predominantly open with clusters of shrub thickets, particularly Russian olive (*Elaeagnus angustifolia*) and sweet brier (*Rosa rubiginosa*).

Table H-11: Unit 18 Stand Description

STAND DESCRIPTION Unit 18										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	2	Elaeang = Popudel = Juglnig						
2	SUB-CANOPY	3	2	Elaeang > Juglnig > Lonitat						
3	UNDERSTORY	5	3	Rosarub > Solialt > Vitisrip						
4	GRD. LAYER	6	4	Bromine > Solialt > Vincros = Viciacra						
HT CODES: 1 - >25m 2 - 10<HT </=25m 3 - 2</=10m 4 - 1<HT </=2m 5 - 0.5<HT </=1m 6 - 0.2<HT </=0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0%<CVR </=10% 2 - 10<CVR </=25% 3 - 25<CVR </=60% 4 - CVR>60%										
STAND COMPOSITION:								BA: NA		
SIZE CLASS ANALYSIS (dbh, cm):				O	<10	O	10 to 24	R	25 to 50	N > 50
STANDING SNAGS:				N	<10	N	10 to 24	R	25 to 50	N > 50
DEADFALL/LOGS				R	<10	R	10 to 24	N	25 to 50	N > 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										



Photo H-18: Unit 18 Exotic Cultural Thicket.

Unit 19: CUT1-C - Exotic Cultural Thicket

Location: This unit is located within the hydro corridor immediately north of the Gardiner Expressway.

Description: This unit represents the maintained hydro corridor north of the Gardiner Expressway. The site has transformed from a cultural meadow to a thicket of mostly non-native shrubs such as common Buckthorn (*Rhamnus spp.*), Tartarian Honeysuckle (*Lonicera tatarica*) and small Manitoba Maples (*Acer negundo*). Wild Grape (*Vitis vinifera*) covers much of the woody plants and fences. The ground cover is grasses, e.g. brome (*Bromus spp.*) with common roadside species.

Table H-12: Unit 19 Stand Description

STAND DESCRIPTION Unit 19									
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)					
1	CANOPY	4	2	Rhamcat > Lonitat > Acerneg					
2	SUB-CANOPY			NA					
3	UNDERSTORY			NA					
4	GRD. LAYER	5	4	Bromine > Phalaru . Solidalt > Chicint					
HT CODES: 1 - >25m 2 - 10<HT </=25m 3 - 2</=10m 4 - 1<HT </=2m 5 - 0.5<HT</=1m 6 - 0.2<HT</=0.5 7 - HT<0.2m									
CVR CODES: 0 - NONE 1 - 0%<CVR</=10% 2 - 10<CVR</=25% 3 - 25<CVR</=60% 4 - CVR>60%									
STAND COMPOSITION:							BA: NA		
SIZE CLASS ANALYSIS (dbh, cm):				<10		10 to 24		25 to 50	> 50
STANDING SNAGS:				<10		10 to 24		25 to 50	> 50
DEADFALL/LOGS				<10		10 to 24		25 to 50	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT									



Photo H-19a. Unit 19 Exotic Cultural Thicket.



Photo H-19b. Unit 19 Exotic Cultural Thicket.

Unit 20: CUM1-B - Exotic Cool Season Grass Old Field Meadow

Location: This Unit is located south of the rail corridor and east of Park Lawn Road and stretches to the eastern perimeter of the Study Area.

Description: This Unit represents the northern portion of the historic lawn around the perimeter of the Mr. Christie factory. The present “lawn” is composed of a commercial grass seed mix and that is periodically maintained. Many non-native herbaceous species are also found within this unit. Native and exotic deciduous species occur along the periphery and within several small fenced areas that house electrical works, signage etc.

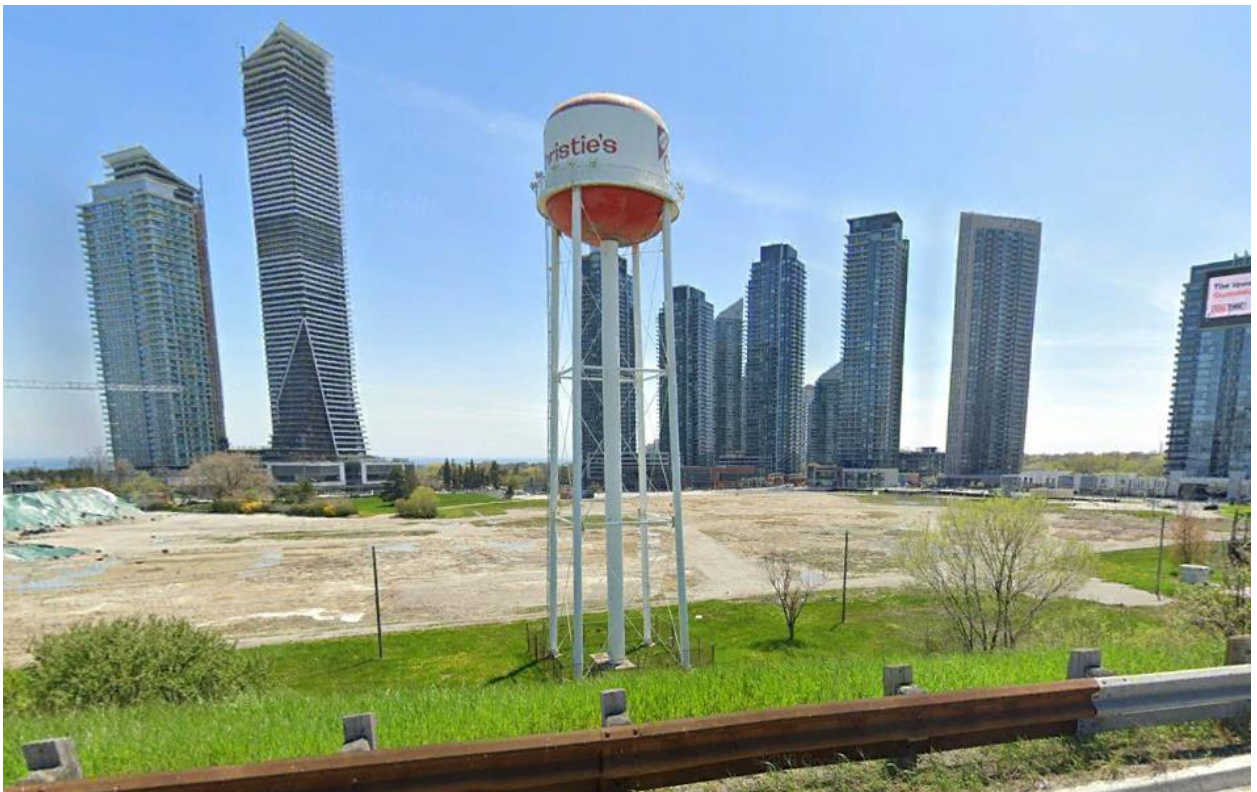


Photo H-20: Unit 20 Exotic Cool Season Grass Old Field Meadow.

Unit 21: CUM1-B - Exotic Cool Season Grass Old Field Meadow

Location: This unit is situated in the southeast portion of the Study Area with the western portion abutting Park Lawn Road.

Description: The unit is found within the area of the old lawn in a low-lying area with standing water in the spring. It has mostly been filled with rubble but grasses persist and the wetter and non-filled areas contain a few wetland species such as hybrid cattail (*Typha x glauca*) and soft stem bulrush (*Schoenoplectus tabernaemontani*).



Photo H-21a: Unit 21 Exotic Cool Season Grass Old Field Meadow.



Photo H-21b: Unit 21 Exotic Cool Season Grass Old Field Meadow.

Unit 22: SB02 - Anthropogenic Sand / Gravel Barren

Location: This unit is located along the southeast portion of the Study Area.

Description: This area is an active construction site with fill being deposited throughout the spring and summer. Fill is composed of sand, gravel, cobble and crushed concrete. Vegetation cover is <20% and composed of species such as chicory (*Cichorium intybus*) and phragmites (*Phragmites australis*).



Photo H-22: Unit 22 Anthropogenic Sand / Gravel Barren.

Unit 23: FOD7-A - Fresh-Moist Manitoba Maple Lowland Deciduous Forest

Location: This unit borders the east side of Mimico Creek south of the rail trail.

Description: A fresh-moist Manitoba maple lowland deciduous forest community borders the east side of Mimico Creek. The community is divided into separate units within the Study Area as it is bisected by the rail corridor. The forest is located within the floodplain of Mimico Creek on fine alluvial soils, with the more elevated north and east perimeter of the unit composed of fill. Species composition of canopy trees changes towards a drier community with increased elevation, especially to the east, although the area is too small to be separated into a new ecosite. The forest is young, with most trees under 24 cm DBH. The unit is highly disturbed with invasive ground cover (Garlic Mustard) trails and garbage.

Table H-13: Unit 23 Stand Description

STAND DESCRIPTION Unit 23										
LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>MUCH GREATER THAN; >GREATER THAN; = ABOUT EQUAL TO)						
1	CANOPY	2	3	Acerneg = Salifrag > Popudel > Juglnig						
2	SUB-CANOPY	3	3	Acerneg > Rhustyp >>Ulmuspum						
3	UNDERSTORY	4	4	Acerneg > Solialt > Fraxpen > Vitiria						
4	GRD. LAYER	4	5	Allipet >> Partqui > Phalaru						
HT CODES: 1 - >25m 2 - 10<HT</=25m 3 - 2</=10m 4 - 1<HT</=2m 5 - 0.5<HT</=1m 6 - 0.2<HT</=0.5 7 - HT<0.2m										
CVR CODES: 0 - NONE 1 - 0%<CVR</=10% 2 - 10<CVR</=25% 3 - 25<CVR</=60% 4 - CVR>60%										
STAND COMPOSITION:							BA: NA			
SIZE CLASS ANALYSIS (dbh, cm):			A	<10	A	10 to 24	O	25 to 50	O	> 50
STANDING SNAGS:			O	<10	O	10 to 24	O	25 to 50	N	> 50
DEADFALL/LOGS			O	<10	O	10 to 24	O	25 to 50	N	> 50
ABUNDANCE CODES: N - NONE R - RARE O - OCCASIONAL A - ABUNDANT										



Photo H-23: Unit 23 Fresh-moist Manitoba Maple Lowland Deciduous Forest.