




**First Capital
2150 Lake Shore Boulevard West
Natural Heritage Impact Study/Environmental Impact Study**

					
02/24/2021	0	Rachel Eagles	Sean Stuart	Melissa Alexander	Final Report
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Executive Summary

A combined Natural Heritage Impact Study (NHIS) and Environmental Impact Study (EIS) was conducted for the property municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road site ('the Site' or 'Project Location') to support the combined Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision application resubmission ('the application') to be filed by First Capital (Park Lawn) Corporation on behalf of First Capital (Park Lawn) Corporation and 2253213 Ontario Limited ('the Owners').

As outlined in the City of Toronto's Development Guide, an NHIS is to be "prepared by a qualified expert, of a proposed development's potential impact on the natural heritage system shown on Map 9 of the City of Toronto Official Plan (2006) and ways to mitigate negative impacts on and/or improve the natural heritage system" are to be included. In reviewing the Official Plan Map 9, the land parcel located north of the railway in the northwest corner of the Project Location is identified as part of a Natural Heritage System (NHS). Correspondence with the City of Toronto confirms that a NHIS is required for this area. Furthermore, it is noted the western extent of the same property overlaps with lands regulated by the Toronto and Region Conservation Authority (TRCA) and is likely subject to the TRCA NHIS/EIS process. The remainder of the Project Location is not considered to be part of a NHS, however, it will undergo an EIS satisfying the City of Toronto's Terms of Reference.

The Project Location is municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road, as well as a small triangular parcel of land owned by the City of Toronto between the rail corridor and the Gardiner Expressway. A 120 m buffer was applied to the perimeter of the Project Location to create the Study Area for the NHIS/EIS.

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, five site investigations were conducted in order to document vegetation communities and inform habitat evaluations.

Ecological Land Classification (ELC) was completed in order to document the vegetation communities within the Study Area. In total, the site consists of 24 identifiable ELC polygons (hereafter referred to as "Units") comprised of 12 different ecosite types. A total loss of 14.42 ha of land, comprising five ecosites is expected, however the area has been previously disturbed and isolated from other habitats, therefore the total clearing area should not be considered significant. No species at risk plants or vegetation communities were identified in the Study Area. Although the vegetation communities are not considered sensitive, appropriate mitigation measures were developed including measures to mitigate the proliferation of invasive species, the delineation of vegetation removal zones, implementation of timing restrictions and revegetation protocols. Areas that will result in a permanent loss of form and function will be compensated through the City of Toronto and TRCA permitting process.

There are no watercourses or water-bodies present within 30 m of the Project Location, however Mimico Creek does encroach the northwest corner of the Study Area. One small cattail marsh that has formed at the mouth of a drainage culvert also encroaches the Study Area. As Park Lawn Road separates the Project Location from Mimico Creek, the risk for physical impacts is considered very low.

A total of 111 bird species were 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 two Bank 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 10 m west 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 highly eroded banks 70 m west of the Study Area along the western banks of Mimico Creek. No impacts to SAR birds nesting habitat is expected from the proposed works since suitable habitat was not observed within the Project Location. 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. 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 were documented within a 10 x 10 km square overlapping the Study Area. No species were observed during the initial site investigations. 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, however no hibernaculum were observed during site investigations. Impacts to reptiles are expected to be unlikely as no potential reptile habitat was observed during field investigations and project works are not expected to encroach the Mimico Creek valley. Furthermore, no impacts to areas west of Park Lawn Road are expected from the proposed development.

In addition to reptile hibernaculum, the Study 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.

Mimico Creek and the adjacent riparian areas as identified in the Ravine and Natural Heritage Feature Plan provide important and significant connectivity of wildlife habitats through the Study Area. Beyond this, there is little landscape connectivity between the Project Location and the surrounding habitat as it is bordered by Park Lawn Road, Lake Shore Boulevard and the Gardiner Expressway. Although some wildlife species may utilize habitats found within the Project Location, the habitat is commonly found within areas adjacent to the Study Area and as a result, the loss of poor quality habitat is unlikely to result in significant impacts to these species.

Areas that were given a NHS designation will be impacted from the proposed development. As these NHS areas contain poor quality habitat and are highly fragmented from the rest of the NHS by highways, roads and the rail corridor, no significant impacts to the NHS as a whole are expected.

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1. Introduction

A combined Natural Heritage Impact Study (NHIS) and Environmental Impact Study (EIS) was conducted for the property municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road site ('the site') to support the combined Official Plan Amendment, Zoning By-law Amendment and Draft Plan of Subdivision application resubmission ('the application').

As outlined on the City of Toronto's Development Guide, a NHIS is to be "prepared by a qualified expert, of a proposed development's potential impact on the natural heritage system shown on Map 9 of the City of Toronto Official Plan (2006) and ways to mitigate negative impacts on and/or improve the natural heritage system" are to be included. In reviewing the Official Plan Map 9, the land parcel located north of the railway in the northwest corner of the site is identified as part of a Natural Heritage System (NHS). Correspondence with the City of Toronto confirms that a NHIS is required for this area. Furthermore, it is noted the western extent of the same property overlaps with the Toronto and Region Conservation Area's (TRCA) regulated lands and is likely subject to the TRCA NHIS/EIS process. The remainder of the site is not considered to be part of a NHS, however will undergo an EIS satisfying the City of Toronto's Terms of Reference.

This EIS/NHIS will serve to determine the potential impacts of the application on the site in order to meet the requirements set forth in the City of Toronto Official Plan (2015) and the Provincial Policy Statement (MMAH, 2020).

1.1 Project Background

1.1.1 *The Initial Master Plan Proposal (October 2019)*

In October 2019, First Capital (Park Lawn) Corporation filed an Official Plan Amendment (OPA) application on behalf of First Capital (Park Lawn) Corporation and 2253213 Ontario Limited ('the Owners') that establishes a framework for a transit-oriented mixed-use master plan redevelopment of a 27.7 acre/11 hectare site on the northeast corner of Park Lawn Road and Lake Shore Boulevard West, municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road ("the site" or "2150 Lake Shore").

The initial Master Plan Proposal introduced a new proposed Park Lawn GO station integrated with Toronto Transit Commission (TTC) streetcar and bus stations. A network of fine-grained internal streets was proposed and connected the site to the surrounding network, while a new 'relief road' was proposed along the northern edge of the site to function as an alternative access to the Gardiner Expressway and a bypass route for through traffic on Park Lawn Road and Lake Shore Boulevard West, providing traffic relief to the community.

A diverse open space system was proposed across the site, including a new 0.5-hectare public park, a covered Galleria, three urban squares and a series of largos (enlarged sidewalks), lanes and pedestrian mews woven into a rich public realm network. The existing water tower on the site was proposed to be retained as a historic landmark.

A diverse mix of uses were proposed including significant employment uses comprising office-type, retail, entertainment, and service uses. 1.4 hectares of General Employment Areas were proposed along the Gardiner Expressway on the north edge of the site. Significant residential uses were also proposed with approximately 7,500 new units, including larger 2- and 3-bedroom family-sized units, as well as affordable housing units. The proposal featured a distinct assembly of built form typologies including low, mid and high-rise buildings. Fifteen towers were proposed, ranging in height between 22 and 71 storeys.

1.1.2 The May 2020 Master Plan Proposal

The May 2020 Master Plan proposal maintained the fundamental vision and features of the initial 2019 Master Plan proposal, including the provision of an integrated GO/TTC transit hub, a new relief road and a fine-grained internal street network, a covered galleria lined with retail and amenities, significant employment, diversity of housing options, and unique architecture featuring a blend of built form and uses. The height of proposed towers ranged from 16 to 70 storeys. The May 2020 proposal featured the following key changes:

- Provision of an enlarged park of approximately 1 hectare
- Accommodation of two potential elementary schools in response to the Toronto District School Board and Toronto Catholic District School Board's interest in co-locating schools within the Master Plan site
- Increased provision of employment GFA by approximately 33%, and locating the General Employment Areas around the GO Station and in the central Galleria block, creating a cluster of office-type uses proximate to regional transit, public park, and retail and amenities in the Galleria
- Refinements to the built form to reinforce a pedestrian-scaled street wall along Park Lawn Road and Lake Shore Boulevard West through measures such as shifting towers behind mid-rise buildings and introducing setbacks
- Conversion of previously proposed street into a pedestrian plaza that extends Station Square to Park Lawn Road, creating a safe and convenient pedestrian connection between the proposed TTC bus activity along Park Lawn Road and the GO station

1.1.3 The Current Master Plan Proposal (February 2021)

The current Master Plan proposal has further evolved as a result of the continued effort to align with key feedback from various City departments and commenting agencies, as well as with policy directions emerging out of the City's draft Christie's Secondary Plan. The current proposal maintains the vision and key features of the May 2020 Master Plan proposal, incorporating the following additional revisions:

- Boulevard Square Park: In addition to the 1- hectare Community Park, the current proposal adds the 2,500 m² Boulevard Square as a public park. This addition brings the proposed total on-site parkland provision to 1.25 hectares, nearly 2.5 times the size in the initial Master Plan proposal. As Boulevard Square was previously proposed as a privately-owned publicly-accessible space (POPS) with an underground parking structure below, this

change required a reconfiguration and redistribution of parking areas to ensure that Boulevard Square Park is now fully unencumbered. The overall open space system continues to make up 42.6% of the net site area.

- **New Community Uses:** Discussions on community benefits with City staff have advanced since the May 2020 proposal. The current proposal now includes two daycares, a community recreation centre, a public library, and a not-for-profit community agency space, all to be delivered on site in contributing to the Master Plan vision of creating a complete community. These facilities are intended to be secured through a Section 37 agreement with the City, subject to review and finalization. These new facilities are proposed in addition to the space allocated for two potential schools within the site. It is noted that the actual realization of these schools rely on a number of factors including approval and funding by the Ministry of Education, to be secured by the two School Boards.
- **A Sunnier Community Park:** Access to sunlight in the proposed Community Park has been improved by shifting height and density away from the south and east of the park. With the exception of shadows cast by the existing context surrounding the site, the May 2020 proposal achieved no new net shadow on 70% of the park for 5 continuous hours during spring and autumn equinoxes. With the redistribution of height and density, the current Master Plan exceeds the more rigorous sunlight metric in the draft Christie's Secondary Plan to create no new shadows on 85% of the park or more for 5 continuous hours, achieving 6 continuous hours between 9:18 and 15:18.
- **Enhanced Street Wall along Park Lawn, Lake Shore, and the Loop Road:** A number of built form refinements were made in reinforcing pedestrian-scaled street walls along Park Lawn Road, Lake Shore Boulevard West, and the loop road. This involved reducing street wall heights to be no taller than the width of the right-of-way on these streets, and stepping back upper floors of some mid-rise and podium buildings.
- **Retention of the Water Tower in Station Square:** As a response to City Staff comments, the historic water tower is now proposed to be located in Station Square, from its previous location in the Community Park. At this location, the water tower will have visual prominence as it will remain visible from the Gardiner Expressway, and also visible from a number of other key locations including Park Lawn Road, the loop road, and the proposed Community Park.
- **Overall Redistribution of Height and Density:** The revisions noted above; enhanced sunlight in the Community Park, new community facilities, and reinforcing the pedestrian scale; have all resulted in overall shifts in heights and distribution of density across the site. This has generally resulted in taller tower heights to the north of the Community Park and along Park Lawn Road, and lower tower heights to the immediate south and east of the Park. As a result, tower heights now range between 28 and 70 storeys, maintaining the 70 storey height peak at the proposed GO station. These revisions have also resulted in a modest increase in the overall density of the project. This includes non-residential density associated with the introduction of the proposed library, community recreation centre, two daycares, and community agency space, along with a 4.9% increase in residential density

above the May 2020 Proposal associated with the costs of delivering the comprehensive package of new community benefits identified by the City.

- A Wider Loop Road: The central loop road has been widened from a 23-metre right-of-way in the May 2020 submission to a 26-metre right-of-way in discussion with City staff. The portion of the street along the proposed Community Park has also been widened from 20 metres to 22 metres. Taking a complete streets approach, the widened right-of-way accommodates wider pedestrian zones, vehicle lanes, planting zones, a bi-directional multi-use trail, and TTC streetcar tracks, balancing the needs of all users.

1.2 Project Location

The Project Location is located on the northeast corner of Park Lawn Road and Lake Shore Boulevard West, municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road, and includes segments of both Park Lawn Road and Lake Shore Boulevard West adjacent to the property. The Lakeshore West Rail Corridor is located to the north of the property, which eventually intersects with the Gardiner Expressway to the north. A small triangular parcel of land owned by the City of Toronto between the rail corridor and the Gardiner Expressway is also included as part of the Project Location (Figure 4-1).

A 120 m buffer was applied to the perimeter of the site to create the Study Area for the EIS/NHIS. Residential condominium complexes and commercial buildings are located along the southwest side of Park Lawn Road within the Study Area. Behind this, Mimico Creek is located within TRCA Regulated Lands just outside of the Study Area. Large condominiums, commercial properties, and office buildings are located to the east of the property along Lake Shore Boulevard, backing on to Humber Bay Park and Lake Ontario. The Ontario Food Terminal is located north of the Gardiner Expressway along the boundary of the Study Area.

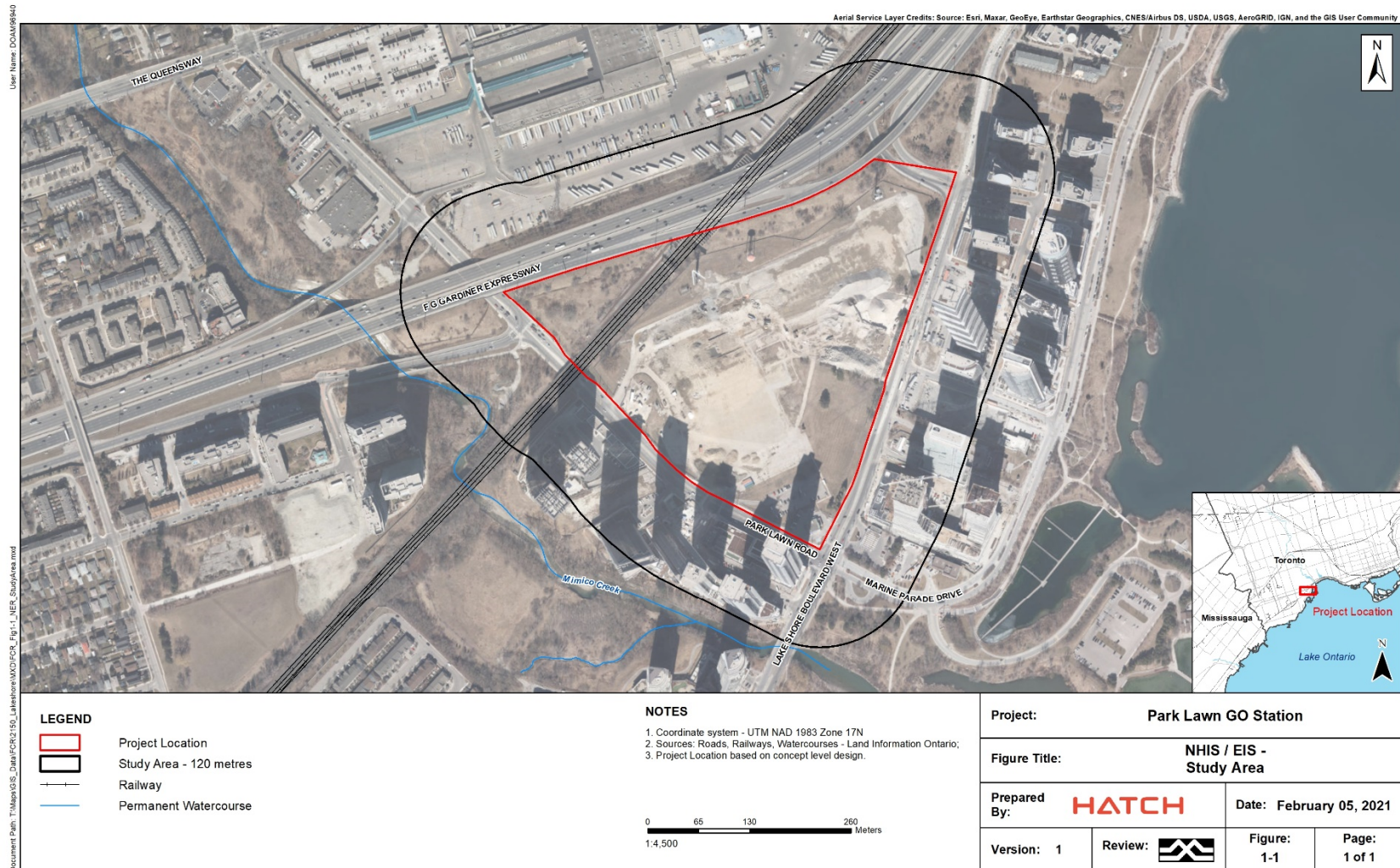


Figure 1-1: Study Area

2. Policy Context

2.1 City of Toronto

2.1.1 *Official Plan and Zoning By-Law*

The property of 2150 Lake Shore Boulevard is designated as a Core Employment area in the City of Toronto Official Plan (City of Toronto, 2015) within the administrative district of Etobicoke. The parcel of land to the north of the property, owned by the City of Toronto, is designated as part of the NHS that surrounds Mimico Creek.

Stated in the Official Plan, the NHS includes a multitude of natural features such as “terrestrial natural habitat types including forest, wetland, successional, meadow, beaches and bluffs”. As mandated in the Official Plan, the natural heritage features on or near the site will be more precisely defined. According to Section 3.4 (13) of the Official Plan, guidelines are provided for evaluating sites within the NHS where developments are proposed. Areas of land or water within the NHS with any of the following characteristics are particularly sensitive and require additional protection to preserve their environmentally significant qualities:

- Habitats for vulnerable, rare, threatened or endangered plant and/or animal species and communities that are vulnerable, threatened or endangered within the City or the Greater Toronto Area (GTA); or
- Rare, high quality, or unusual landforms created by geomorphological processes within the City or the GTA; or
- Habitats or communities of flora and fauna that are of a large size or have an unusually high diversity of otherwise commonly encountered biological communities and associated plants and animals; or
- Areas where an ecological function contributes appreciably to the healthy maintenance of a natural ecosystem beyond its boundaries, such as serving as a wildlife migratory stopover or concentration point, or serving as a water storage or recharge area.

The Private Tree By-law formerly known as City of Toronto Municipal Code, Chapter 813, Article III, was developed to preserve significant trees on private property within the City of Toronto to assist in sustaining the urban forest and educate individuals with respect to tree protection. The by-law regulates through permitting, the removal of privately owned trees which measure 30 cm in diameter above the ground at breast height (City of Toronto, 2017).

2.1.2 *Environmentally Significant Areas*

Environmentally Significant Areas in the City of Toronto are considered natural spaces within the NHS that require special protection to preserve their environmentally significant qualities (City of Toronto, 2017).

A review of the City's Official Plan Map 12 identifies that the Study Area does not fall within an Environmentally Significant Area.

2.2 Toronto and Region Conservation Authority

2.2.1 Conservation Authorities Act

Under *Ontario Regulation 166/06* within the *Conservation Authorities Act*, the TRCA regulates development within the Regulation Limit as shown in *Ontario Regulation 97/04: Regulation for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

Regulated areas include those in proximity to wetlands, watercourses, valleylands, areas adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to inland lakes that may be affected by flooding, erosion or dynamic beaches and hazardous lands.

Within the Study Area, a small area within the land parcel north of the rail corridor falls within a TRCA Regulated Area (Figure 2-1). As the preferred design progresses, if it is determined that the Project will require work within the Authority's regulated area, TRCA will be engaged and TRCA requirements will be adhered to in regulated areas.

2.3 Provincial Policy Statement

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

There are a number of natural heritage provisions in Section 2.1 of the PPS. These provisions restrict development and site alteration in significant 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 (MNR), 2010). This manual recommends the approach and technical criteria for 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)

The PPS and its associated guidance documents (e.g., NHRM) provide detailed criteria to identify natural features of “provincial significance”. 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.

2.4 Species at Risk

1.1.1 *Species at Risk Act, 2002*

The Federal *Species at Risk Act, 2002* (SARA) (Environment and Climate Change Canada (ECCC) 2002) provides a framework to ensure the survival of wildlife species and the protection of natural heritage in Canada (ECCC; 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* (ECCC, 1994).

Species listed under SARA are defined as Species at Risk (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 1 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 under 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 1 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.

To determine the potential for SARA species occurring in the Study Area, Hatch conducted a screening of all known information sources (Appendix E) prior to cross referencing with SARA Schedule 1. Any species with the potential to be directly or indirectly harmed or have potential residences present were then further evaluated against project activities. If required, targeted surveys will be recommended to determine if SARA species are present and evaluate the net 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 Minister of ECCC.

2.4.1 *Endangered Species Act, 2007*

The provincial *Endangered Species Act, 2007* (MNR, 2007) provides protection for SAR and their habitat. The Act provides policies for the protection of Extirpated, Endangered and Threatened Species, as well as management for species of Special Concern.

Previously, MNRF held all of the formal responsibilities under the ESA including screening, permitting and enforcement. These responsibilities were transferred to MECP on April 1, 2019.

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 (MNR, 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. The SARO List forms the official listing of Endangered, Threatened, Special Concern and Extirpated animals and plants in Ontario. Those species listed 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 (MNR, 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 (MNR, 2007).

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 was incorporated into the EIS/NHIS. If Threatened and/or Endangered species are encountered during field investigations, and Project effects to SAR cannot be avoided, a permit or exemption under the ESA will be required.

2.5 *Migratory Birds Convention Act*

The Federal MBCA contains regulations to protect migratory birds, their eggs and nests by regulating potentially harmful activities. 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 (ECCC, 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 (ECCC, 1994). As described in Section 6 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.

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 an active nest. It is noted that ECCC advises that avoidance is the best approach (ECCC, 1994).

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 (trees, vegetated lands, and structures). Thus, removals required for the Project will need to occur outside the core breeding bird timing window, generally occurring April 1 to August 31 of any given year. However, as the design progresses, if it is determined that the proposed works will require contravention of the timing windows, FCR will engage with ECCC and implement mitigations as required to avoid contravening the MBCA.

3. Methodology

3.1 Desktop Review

A desktop review was completed on March 8, 2020 to document publicly available background information within the Study Area. The following sections outline the databases and sources that were consulted to inform the existing conditions of the area. All natural features are included in Figure 3-1.

3.1.1 **City of Toronto Official Plan (Office Consolidation, 2015)**

A review of the Official Plan maps was undertaken to document land use and any special policy areas located within the Study Area.

3.1.2 *Fisheries and Oceans Canada (DFO) Aquatic SAR Online Mapping Tool (2019)*

A review of the DFO SAR Online Mapping tool was used to assess the potential for the presence of any federally listed aquatic SAR within and immediately adjacent to the Study Area.

3.1.3 *Natural Heritage Information Centre (NHIC) database (2020); Land Information Ontario (LIO) database (MNRF, 2020a)*

A geographic query of the MNRF natural heritage areas and NHIC data was completed for the 1 km squares within and immediately surrounding the Study Area (17PJ2230, 17PJ2231, 17PJ2131, 17PJ2130). The web application provides information on provincial parks, conservation reserves, Areas of Natural and Scientific Interest (ANSI), wetlands, woodlands, designated NHSs (e.g., Niagara Escarpment, Oak Ridges Moraine, and Greenbelt Plans) and NHIC data (i.e., rare species such as species of conservation concern and SAR, plant communities, wildlife concentration areas, and natural areas).

3.1.4 *Ontario Butterfly Atlas Online (OBA) (McNaughton et al., 2020)*

A review of historic and recent sightings of butterflies within the 10 km OBA square (17PJ23) that overlap the Study Area was completed in order to document the presence of SAR that have the potential to occur.

3.1.5 *Ontario Breeding Bird Atlas (OBBA) Website (BSC et al., 2006)*

A review of historic and recent sightings of birds within the 10 km OBBA square (17PJ23) that overlap the Study Area was completed in order to document the presence of SAR that have the potential to occur.

3.1.6 *MNRF Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 7E (2015)*

The SWH Criteria Schedule for 7E was reviewed and compared to the Study Area ELC designations to inform any potential SWH that could be present.

3.1.7 *'Herps of Ontario' database in iNaturalist (iNaturalist, 2020). Previously known as the Ontario Reptile and Amphibian Atlas*

A review of historic and recent sightings of birds within the 10 km square (17PJ23) that overlap the Study Area was completed in order to document the presence of SAR that have the potential to occur.

3.1.8 *Toronto and Region Conservation Authority (TRCA) Interactive Mapping Tool (2020)*

A review of the TRCA Interactive Mapping tool was used to delineate regulation limits, watershed boundaries and identify watercourses within and immediately adjacent to the Study Area.

3.1.9 *City of Toronto Interactive Map (2020)*

A review of the City of Toronto Interactive Mapping tool was used to identify boundaries of any Environmentally Significant Areas, Natural Heritage Systems, ANSI's and provincially significant wetlands.

3.1.10 *The Toronto Region and Central Lake Ontario (CTC) Source Water Protection Area*

A review of the CTC Source Water Protection Area was undertaken in order to document any highly vulnerable aquifers within the Study Area and delineate the boundary of the source water protection areas within or immediately adjacent to the Study Area.

3.1.11 *Aerial Photography*

Aerial imagery for the area obtained from Google Earth (2018) was used to provide a general understanding of the topography and land use within the Study Area and to inform ELC designations prior to field confirmation.

3.2 *Field Investigations*

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 initial field investigations, four 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 17, 2020 - Breeding and SAR birds, vascular plants and SAR Plants
4. July 9, 2020 – Breeding and SAR birds, Vascular plants, SAR plants

3.2.1 *Ecological Land Classification*

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. Prior to entering the field, Hatch compared TRCA ELC data to various years of imagery available on Google Earth and determined some ELC communities provided by TRCA had changed over time through natural succession and anthropogenic disturbance. Accordingly, Hatch used 2018 Google Earth imagery to evaluate ELC community changes and verified by ground-truthing from Public Rights-of-Way to provide an updated ELC assessment of the Study Area. Previous TRCA ELC work used a modified coding scheme that provides greater detail in cultural landscapes than the provincial ELC Vegetation Type List (Lee 2008). Hatch continued to use TRCA ELC modified ELC codes to provide continuity of the database within and surrounding the Study Area specifically the Ravine Natural Heritage Features adjacent to Mimico Creek.

A checklist for significant, or rare flora, including SAR, was prepared based on the records reviewed to evaluate the potential presence or absence of species that are historically known to be near or have the potential to be found in the Study Area. A list of vascular plants was compiled from the site investigations conducted during suitable phonological periods for plant identification. This list is included in Appendix C.

The April 17, 2020 survey updated TRCA ELC community data but was constrained due to access restrictions, most specifically access to the rail corridor. During subsequent site visits the ELC communities were refined as more vantage points or access was granted. Similarly,

the plant list within Appendix C was expanded specifically with respect to SAR included in the SAR Screening (Appendix E), Butternut trees of all sizes and any Provincially Rare S1, S2 and S3 vegetation communities that could contribute to the “Other Rare Vegetation Communities” significant wildlife habitat designation (Appendix D).

3.2.1.1 *Wildlife*

A desktop screening for potential SAR, SAR habitat, significant wildlife habitat or other potential wildlife habitat was completed.

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.

3.2.1.1.1 *Surveys*

Additional targeted wildlife surveys occurred in 2020. Protocols that were followed during these surveys include the following:

- Raptor Stick Nest Search/Bat Snag Survey - Currently there is no provincial or federal nest search protocol, given the size of the area and the timing 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 involved viewing trees > 10 cm diameter from ground to canopy.
- Three Breeding Bird Surveys – Standardized surveys using Ontario Breeding Bird Atlas (OBBA) Guide for Participants.

3.2.1.2 *Species at Risk*

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.

During the 2020 field investigations, SAR were noted if encountered with the following specific protocols or survey methods completed to satisfy MECP:

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

3.2.1.3 *Significant Wildlife Habitat*

A Significant Wildlife Habitat (SWH) Assessment Table is provided in Appendix D of this report and is based on the records reviews, requested information, and site investigations completed to date. Determination of SWH is broadly categorized and described in the NHRM (MNR,

2010) and the Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000). 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); and
5. Animal Movement Corridors.

SWH was evaluated based on the information collected to date from the 2020 field investigations, as well as site-specific attributes within the Study Area using Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (MNR, January 2015). Results of the SWH screening can be found in Appendix D with the requirements of SWH evaluation covered by the previously noted field surveys.

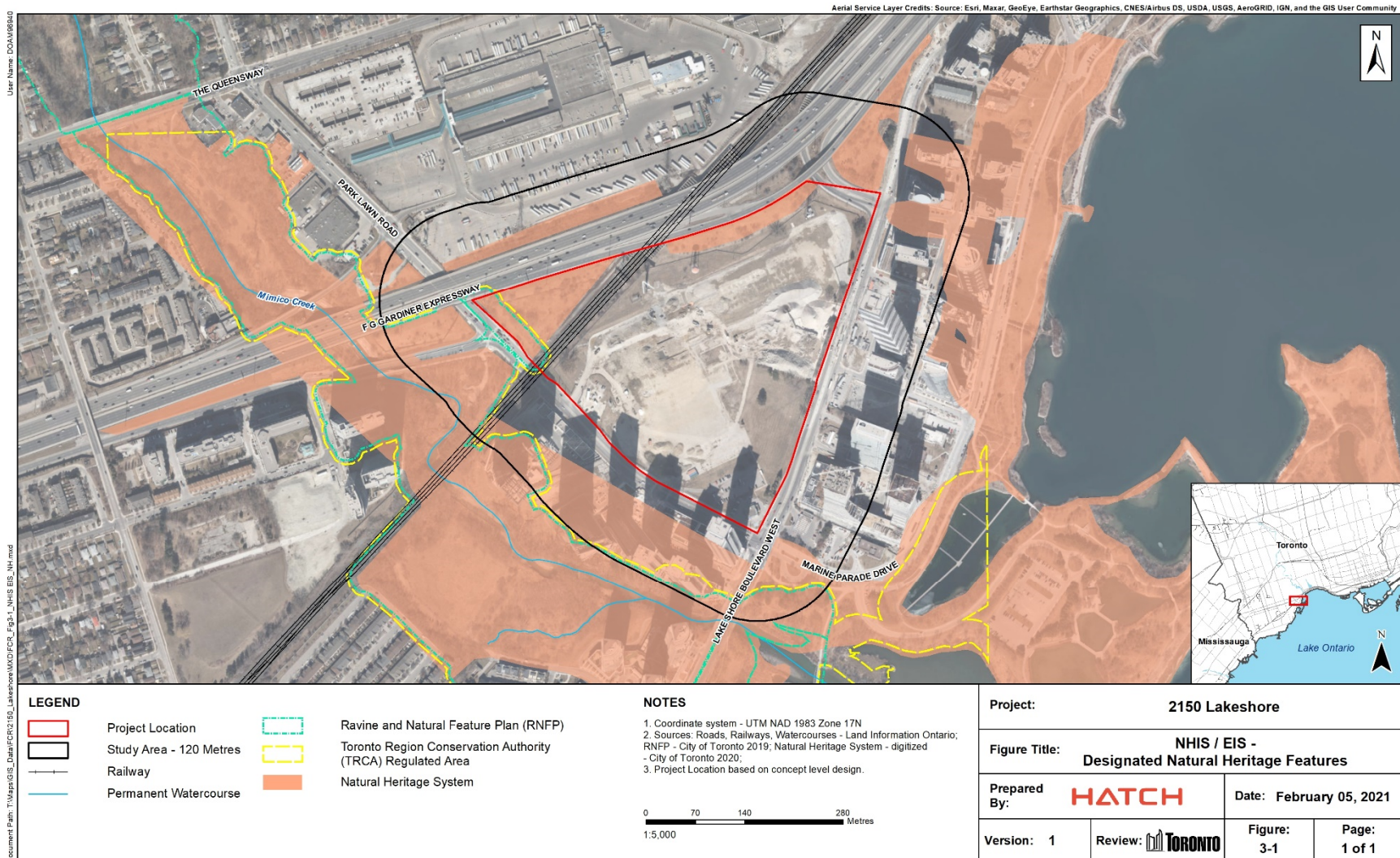


Figure 3-1: Designated Natural Heritage Features

4. Existing Conditions

4.1 Physiography and Topography

4.1.1 *Soils, Landforms, and Surficial Geology*

Several geotechnical investigations have occurred within the property area. The following section primarily uses geotechnical investigations performed by Geo-Canada Ltd in 2004 and Conestoga-Rovers and Associates (CRA) in 2013. An additional investigation was carried out by Golder Associates Ltd in 2015 and technical memorandum in 2019.

The 2150 Lake Shore Boulevard West property currently consists of a 10.9 ha parcel of vacant land in the southwestern area of the City of Toronto. The area is zoned for residential, commercial and industrial use. The property is bounded by Park Lawn Road to the west, Lake Shore Boulevard West to the south and east and the Canadian National Railway mainline to the north. The former site building was originally used to store ammunition for World War II and then converted to a manufacturing facility of baked goods and other food products in the mid-1940s. Demolition of the former building was completed in 2018.

The subsurface conditions at the site consist of a 100 mm to 150 mm thick layer of asphalt that was encountered in the parking areas and driveways in some of the boreholes/monitoring wells which in turn was directly underlain by a non-cohesive (granular fill) layer. The granular fill appeared to be comprised of various layers of grey/brown sand and gravel with trace to some silt. The thickness of the granular fill layer ranged from approximately 0.3 m to 0.7 m. Cohesive fill materials were encountered directly underlying the granular fill layers to a depth of about 1.4 m and 2.1 m below existing ground surface. The cohesive fill materials typically consisted of silty clay with varying amounts of sand and gravel. A deposit of sandy silty clay till was encountered directly below the silty clay fill and the granular fill materials in all boreholes. This till deposit extended to depths of about 4.9 m to 6.5 m below ground surface. In general, the till deposit was brown in color becoming grey with depth and contained some to trace amounts of sand and gravel. Directly underlying the fill materials in some of the boreholes is a deposit of silty clay to clayey silt. The silty clay to clayey silt material was brown but became grey in color at depth and extended to about 4.7 m to 5.5 m below ground surface. In general, the slightly cohesive deposit contained varying amounts of sand silt, with frequent sand seams noted.

Bedrock was encountered at depths ranging from 4.9 meters below ground surface to 6.1 meters below ground surface. Visual examination of the recovered rock cores indicates that the rock belongs to the Georgian Bay Formation, which consist of highly/completely weathered to fresh, grey to occasionally dark grey, fine to very fine-grained fissile shale, with occasional fresh, grey, fine grained calcareous siltstone and limestone layers. Based Unconfined Compressive Strength (USC) test results of rock samples at depths between 7.1 to 12.0 m below ground surface, the unconfined strength of the test rock samples varied from 28.9 MPa to 108.9 MPa. The tested samples could be described as 'Medium Strong' rock when subject to vertical loading in accordance with the International Society of Rock Mechanics (ISRM) classification

Groundwater conditions at the site were measured from nine wells installed as part of the site investigation previously completed by CRA. The 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. The groundwater levels at the site are anticipated to fluctuate with seasonal variations in precipitation and runoff.

Areas of Potential Environmental Concern are referenced in Section 3.1 of the Phase Two Conceptual Site Model technical memorandum by Golder Associates dated July 12, 2019. Based on findings reported in the Golder Technical Memorandum, pre-remediation soil parameter exceedances to MECP Table 3 were encountered in Metals and Hydride Forming Metals, Petroleum Hydrocarbons (PHC), Benzene, Volatile Organic Compounds (VOCs), Petroleum, Polycyclic Aromatic Hydrocarbons (PAH) and other regulated parameters including Sodium Absorption Ratio (SAR) and Electrical Conductivity (EC) were recorded in soil samples. Site remediation was carried out in March and August 2018 and included the removal of on-site abandoned Underground Storage Tanks (USTs) and the remediation of impacted soil and groundwater in the areas of the USTs and at the location of two former on-site gasoline USTs. Post-remediation results indicate exceedances in PHCs, PAHs, Benzene, Metals, Sodium Absorption Ratio (SAR) and electrical conductivity (EC) parameters. Additional site investigations for the purpose of delineating the extent of contaminants is recommended in the Golder memorandum.

4.1.2 Hydrological or Hydrogeological Resources

4.1.2.1 Surface Water

There are no watercourses or water-bodies present with 30 m of the site, however Mimico Creek does encroach the northwest corner of the Study Area. One small cattail marsh has formed at the mouth of a drainage culvert which encroaches the Study Area. The wetland is approximately 305 m² and is situated northwest of the rail corridor / Park Lawn Road junction. Park Lawn Road separates the Project Location from Mimico Creek and the risk for physical impacts is considered very low. However, should stormwater discharge from this project alter the amount, duration or frequency of water discharged by the culvert, the changes in flow may impact this wetland.

4.1.2.2 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).

Based on findings reported in the Golder Technical Memorandum, pre-remediation groundwater parameter exceedances in PHC and VOC were also recorded in groundwater samples collected within the property. As mentioned above in Section 4.1.1, additional site

investigations for the purpose of delineating the extent of contaminants is recommended in the Golder memorandum.

4.2 Vegetation

4.2.1 Ecological Land Classification

A portion of the Study Area had been previously mapped by the TRCA using a modified ELC coding scheme that provides greater detail in cultural landscapes than the provincial ELC Vegetation Type List (Lee 2008). Hatch used the TRCA ELC mapping of the Ravine Natural Heritage Features adjacent to Mimico Creek as a basis from which to update the 2150 Lakeshore Road ELC Study Area map.

Using updated imagery and field work, the pre-existing TRCA ELC assessment of the Study Area was refined and, additional areas mapped (Figure 4-1). The site consists of 24 identifiable ELC polygons (hereafter referred to as “Units”) comprised of 12 different ecosite types. For each ecosite (referred to as Community Code in Table 4-2) the conservation status rank was identified, including TRCA score range (criteria found in Table 4-1), L-rank and subsequent level of conservation concern in Toronto Region (Table 4-2) (TRCA, 2016)

Table 4-1: Assignment of Local Ranks (L-ranks) for Vegetation Communities

Total of Scores	L-rank	Level of Conservation Concern in Toronto region
1 - 2.5	L5	Generally secure; not of conservation concern unless it contains sensitive species or other features such as old growth; contributes to natural cover.
3 - 4.5	L4	Generally secure in rural matrix; of conservation concern in the urban matrix.
5 - 6	L3	Of regional concern; restricted in occurrence and/or requires specific site conditions; generally, occurs in natural rather than cultural areas.
6.5 - 8	L2	Of regional concern; typically occurs in less-disturbed natural areas and under highly specific site conditions; at risk of decline/disappearance from the region.
8.5 - 10	L1	Of high level of concern in TRCA jurisdiction due to rarity, stringent habitat needs, and/or threat to habitat.
n/a	L+	Community defined by alien species (e.g., Scots pine plantation, buckthorn thicket). Contributes to natural cover.
n/a	n/a	Community designation too broad or vague to score (not a currently recognized Vegetation Type).

Table 4-2: ELC Communities within the Study Area and Assigned TRCA L-Rank.

Community Name	Community Code	L-Rank
Exotic Cultural Thicket	CUT1-c	L+
Transportation	CV1-1	N/A
Exotic Cool Season Grass Old Field Meadow.	CUM1-b	L+
Anthropogenic Sand / Gravel Barren	SBO2	L4
Fresh-Moist Manitoba Maple Lowland Deciduous Forest	FOD-7a	L5
High Density Residential	CVR-2	N/A

Community Name	Community Code	L-Rank
Native Deciduous Cultural Savannah	CUS1-A1	L5
Treed Hedgerow	CUH1-A	L5
Broad-Leaved Cattail Mineral Shallow Marsh	MAS2-1A	L4
Native Deciduous Cultural Woodland	CUW1-A3	L5
Turbid Open Aquatic	OA01-T	L+
Austrian Pine Coniferous Plantation	CUP3-b	L+

4.2.1.1 **Exotic Cool Season Grass Old Field Meadow (CUM1-b), Units 11, 16, 18, 9**

Unit 11 is one of several CUM1-b ecosites in the Study Area that was the historically maintained lawn around the perimeter of the Mr. Christie factory. The present “lawn” is maintained by periodic maintenance with many weedy herbaceous species found within. Native and exotic deciduous species occur along the periphery and within several small fenced areas that house electrical works, signage etc. Species within the ecosite include: Kentucky Bluegrass (*Poa pretense*), Phragmites (*Phragmites australis*), Common Mullein (*Verbascum thapsus*), Dog Strangling Vine (*Vincetoxicum rossicum*) Garlic Mustard (*Alliaria petiolate*) Common Burdock (*Arctium minus*), Common Dandelion (*Taxacum officinale*), Crown Vetch (*Securigera varia*), Wild Carrot (*Daucus carota*), Broad-leaved Plantain (*Plantago major*). Manitoba Maple (*Acer negundo*), Cottonwood (*Populus deltoides*), Trembling Aspen (*Populus tremuloides*), Staghorn Sumac (*Rhus typhinus*), Pussy Willow (*Salix discolor*), Common Buckthorn (*Rhamnus cathartica*), Red Osier Dogwood (*Cornus stolonifera*), Forsythia (*Forsythia spp.*), and Tatarian Honeysuckle (*Lonicera tatarica*).

Unit 16 is located in the southern portion of the Project Location adjacent to Lake Shore Boulevard and is similar to Unit 11 with the addition of a small grove of mature Red Maple (*Acer rubrum*).

Unit 18 is located in the western portion of the Project Location adjacent to Park Lawn Road. This area contains the remnants of old lawn and weedy species are found in a low area holding moisture and standing water.

Unit 9 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, consisting of asphalt, medium sands, coarse stone and cobble.

4.2.1.2 **Treed Hedgerow (CUH1-A), Units 14, 15:**

Unit 14 represents the sparse tree cover along the eastern boundary of the Study Area at the edge of the historical lawn and, adjacent to Lakeshore Boulevard. The trees are primarily non-

native Austrian pine (*Pinus nigra*) and Norway Spruce (*Picea abies*). Unit 15 is located 30 m south of Unit 14 and consists of similar species.

4.2.1.3 **Exotic Cultural Thicket (CUT1-c) Units 5, 4, 21, 23:**

Unit 4 is a perched triangular thicket found immediately east of Park Lawn Road, south of the Gardiner Expressway and north of the rail corridor. Preliminary species list includes: Kentucky bluegrass (*Poa pratensis*), Multiflora rose (*Rosa multiflora*), Common Mullein (*Verbascum thapsus*), Dog Strangling Vine (*Cynanchum rossicum*), Garlic Mustard (*Alliaria petiolate*) Phragmites (*Phragmites australis*), Common Burdock (*Arctium minus*), Common Dandelion (*Taraxacum officinale*), Common Milkweed (*Asclepias syriaca*), Elecampane (*Inula helenium*), Wild Carrot (*Daucus carota*), Broad-leaved Plantain (*Plantago major*). Manitoba Maple (*Acer negundo*), Eastern Cottonwood (*Populus deltoides*), Trembling Aspen (*Populus tremuloides*), Black Walnut (*Juglans nigra*), Staghorn Sumac (*Rhus typhina*), Pussy Willow (*Salix discolor*), Common Buckthorn (*Rhamnus cathartica*), Red Osier Dogwood (*Cornus sericea*), Riverbank Grape (*Vitis riparia*), Virginia Creeper (*Parthenocissus quinquefolia*), and Teasel (*Dipsacus fullonum*). Predominant shrubs species present are Russian Olive (*Eleagnus angustifolia*) and Sweet-Brier (*Rosa rubiginosa*).

Unit 5 is located west of Park Lawn Road and between the Gardiner Expressway and the Gardiner Expressway off-ramp. 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*), Red Cedar (*Juniperus virginiana*) and smaller specimens of tree species. The ground cover is weedy, with mostly non-native grasses, e.g. Smooth Brome (*Bromus inermis*) and noxious weeds.

Unit 21 is a cultural thicket located within the hydro corridor immediately north of the Gardiner Expressway. This area was not accessed during the site investigations, therefore ELC coding was completed using aerial imagery and viewing with binoculars. This site has transformed from a cultural meadow to a thicket of mostly non-native shrubs such as Common Buckthorn (*Rhamnus cathartica*), Tatarian Honeysuckle (*Lonicera tatarica*), and small Manitoba Maples (*Acer negundo*). Wild Grape (*Vitis vinifera*) is also present.

Unit 23 is located immediately north of the Gardiner Expressway in the northwest corner of the Study Area. This area was not surveyed at the time of the site investigations due to access restrictions, however was coded using aerial imagery.

4.2.1.4 **Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FOD7-a) – Unit 6**

Unit 6 was originally mapped by TRCA as two separate ecosites, a cultural thicket and a cultural meadow. The Unit is located on the east side of Mimico Creek at the north end of the Study Area. This area is no longer distinguishable as separate entities; as with several early successional sites, the area has transitioned into a young, forested ecosite with Manitoba Maple (*Acer negundo*) as a dominant tree. The area is situated immediately south of the Gardiner Expressway off-ramp and west of Park Lawn Road.

Other species recorded by Hatch and TRCA include Black Locust (*Robinia pseudoacacia*), Basswood (*Tilia americana*), Black Ash (*Fraxinus nigra*), Green Ash (*Fraxinus pennsylvanica*), Tatarian Honeysuckle (*Lonicera tatarica*), Riverbank Grape (*Vitis riparia*), Choke Cherry (*Prunus virginiana*), Willow (*Salix spp.*) as well as groundcover species including Reed Canary Grass (*Phalaris arundinacea*), Dog Violet (*Viola adunca*), Siberian Squill (*Scilla siberica*), Garlic Mustard (*Allium petiolata*), Hedge Parsely (*Torilis japonica*), and Canada Goldenrod (*Solidago altissima*). Hybrid Cattail (*Typha x glauca*) can be found in wet pockets. The site is highly disturbed with trails, garbage and evidence of past inhabitation composed of crude shelters and furniture.

4.2.1.5 **Broad-leaved Cattail Mineral Shallow Marsh (MAS2-1A) – Unit 7:**

Unit 7 is situated east of Mimico Creek and north of the rail corridor. The ecosite is maintained by water discharged to the area from an underground drainage or storm water pipe. The pipe mouth extends into the Manitoba Maple woodland and the drainage water has created a small (5 m²) vernal pool (which would increase in size substantially with rain and remains wet throughout summer conditions). Surrounding the pool is a small marsh dominated by Hybrid Cattail (*Typha x glauca*) and a few other wetland species, including Jewelweed (*Impatiens capensis*) and Red-Osier Dogwood (*Cornus sericea*). Soils are mineral with a shallow organic layer. The polygon is well below the normal ELC 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.

4.2.1.6 **Native Deciduous Successional Woodland (CUW1-A3) – Units 2, 12**

Unit 2 is located between the Gardiner Expressway and the eastbound onramp, west of Lake Shore Boulevard. A small meadow is present within the centre of the ecosite, surrounded by a successional woodland comprised of Trembling Aspen (*Populus tremuloides*) codominant with other native species: Black Walnut (*Juglans nigra*), White Spruce (*Picea glauca*), and Willow species (*Salix spp.*). Other species included American Elm (*Ulmus Americana*), Freeman's Maple (*Acer freemanii*), Austrian Pine (*Pinus nigra*), Ginko Biloba (*Ginko biloba*), Common Apple (*Malus domestica*), Red Cedar (*Juniperus virginiana*), Little-Leaf Linden (*Tilia cordata*), White Birch (*Betula papyrifera*), English Oak (*Quercus robur*) and Manitoba Maple (*Acer negundo*), Riverbank Grape (*Vitis riparia*), Staghorn Sumac (*Rhus typhina*), Tatarian Honeysuckle (*Lonicera tatarica*), Gray Dogwood (*Cornus racemose*), Red-Osier Dogwood (*Cornus sericea*), Rose species (*Rosa spp*) and Black Elderberry (*Sambucus nigra*). Groundcover was predominantly composed of grass species and a variety of herbaceous forbs including Garlic Mustard (*Alliaria petiolate*), Black Medic (*Medicago lupulina*), Crown Vetch (*Securigera varia*), Wild Carrot (*Daucus carota*), Annual Sow Thistle (*Sonchus oleraceus*), and Teasel (*Dipsacus*).

Unit 12 is situated between Mimico Creek and Park Lawn Road, immediately north of the rail corridor. The ecosite is more elevated and drier than the adjacent Manitoba Maple lowland deciduous polygon to the north. Mineral Cultural Woodlands are typically dominated by scattered or patches of open grown trees. Species recorded by Hatch and TRCA include Cottonwood (*Populus deltoides*), Hybrid Willows (*Salix spp*), Manitoba Maple (*Acer negundo*),

Choke Cherry (*Prunus virginiana*), Wild Carrot (*Daucus carota*), various grasses, Tall Goldenrod (*Solidago altissima*), Canada Thistle (*Cirsium arvense*) and White Sweet-clover (*Melilotus alba*).

4.2.1.7 **Transportation Corridor (CV1-1) – Unit 13, 19, 22**

Unit 13 represents both the Lakeshore West rail corridor and all roads within the Study Area. The rail corridor was not assessed due to corridor access restrictions. Vegetation along the periphery of this unit is captured in the descriptions of adjacent units.

Unit 19 is located in the south corner of the Project Location and consists of the parking lot for the Bank of Montreal, as well as a construction site parking lot.

Unit 22 is a parking lot of the Ontario Food Terminal located to the north of the hydro corridor adjacent to the westbound lanes of the Gardiner Expressway. This area was not accessed and was delineated using aerial imagery.

4.2.1.8 **Anthropogenic Sand / Gravel Barren (SBO2) – Unit 17**

Unit 17 represents the area occupied by the former Mr. Christie Cookie Factory. Soil conditions consisting of primarily sands and gravels were present in the footprint of the now demolished factory. Cobble, brick, and crushed concrete were also visible throughout the site. Vegetation cover is sparse and composed of weedy species such as Chicory (*Cichorium intybus*) and Phragmites (*Phragmites australis*).

4.2.1.9 **High Density Residential (CVR-2), Unit 3, 8, 10**

Unit 3, 8 and 10 represent condominium buildings located within the Study Area. Some small areas of commercial properties are scattered throughout the developments.

4.2.1.10 **Native Deciduous Cultural Savannah (CUS1-A1), Unit 1**

Unit 1 is located in the previously disturbed area between the Gardiner Expressway and the associated eastbound offramp in the northwest corner of the Study Area. This area was not accessed at the time of the site investigations due to safety concerns, therefore was coded using binoculars and aerial imagery.

4.2.1.11 **Turbid Open Aquatic (OAO1-T) – Unit 24**

This polygon represents the small portion of Mimico Creek that overlaps the Study Area. The creek is channelized in several areas and the banks stabilized with concrete and riprap. Other sections of the stream are more naturalized and provide wildlife habitat. Riparian areas are highly disturbed with weedy vegetation but have remnants of native flora. Walking trails and debris are common along both sides of the creek.

4.2.1.12 **Austrian Pine Coniferous Plantation (CUP3-b) – Unit 20**

Unit 20 polygon situated in the southwest corner of the Study Area, southwest of the intersection of Lake Shore Boulevard West and Marine Parade Drive. The unit is part of a constructed berm that provides a physical barrier between the road and the natural areas along Mimico Creek. TRCA had previously identified the polygon as an Ash-Conifer Mixed Plantation (CUP2-G), however it is currently composed of ornamental landscape plantings with dominant trees being Austrian pine (*Pinus nigra*) and some White Pine (*Pinus strobus*). Other trees

include Black Locust (*Robinia pseudoacacia*), Hybrid Willow (*Salix spp.*), Green Ash (*Fraxinus pennsylvanica*) and Manitoba maple (*Acer negundo*). A sparse shrubby understory of Choke Cherry (*Prunus virginiana*), Tatarian Honeysuckle (*Lonicera tatarica*), Rose spp. (*Rosa spp.*), Common Buckthorn (*Rhamnus cathartica*), and seedlings and saplings of Black Locust (*Robinia pseudoacacia*) are found throughout the polygon. The ground cover is predominantly Grass (*Poa.spp.*) with weedy species such as Garlic Mustard (*Alliaria petiolata*), Common Burdock (*Arctium minus*), Common Dandelion (*Taraxacum officinale*) and Wild Carrot (*Daucus carota*).

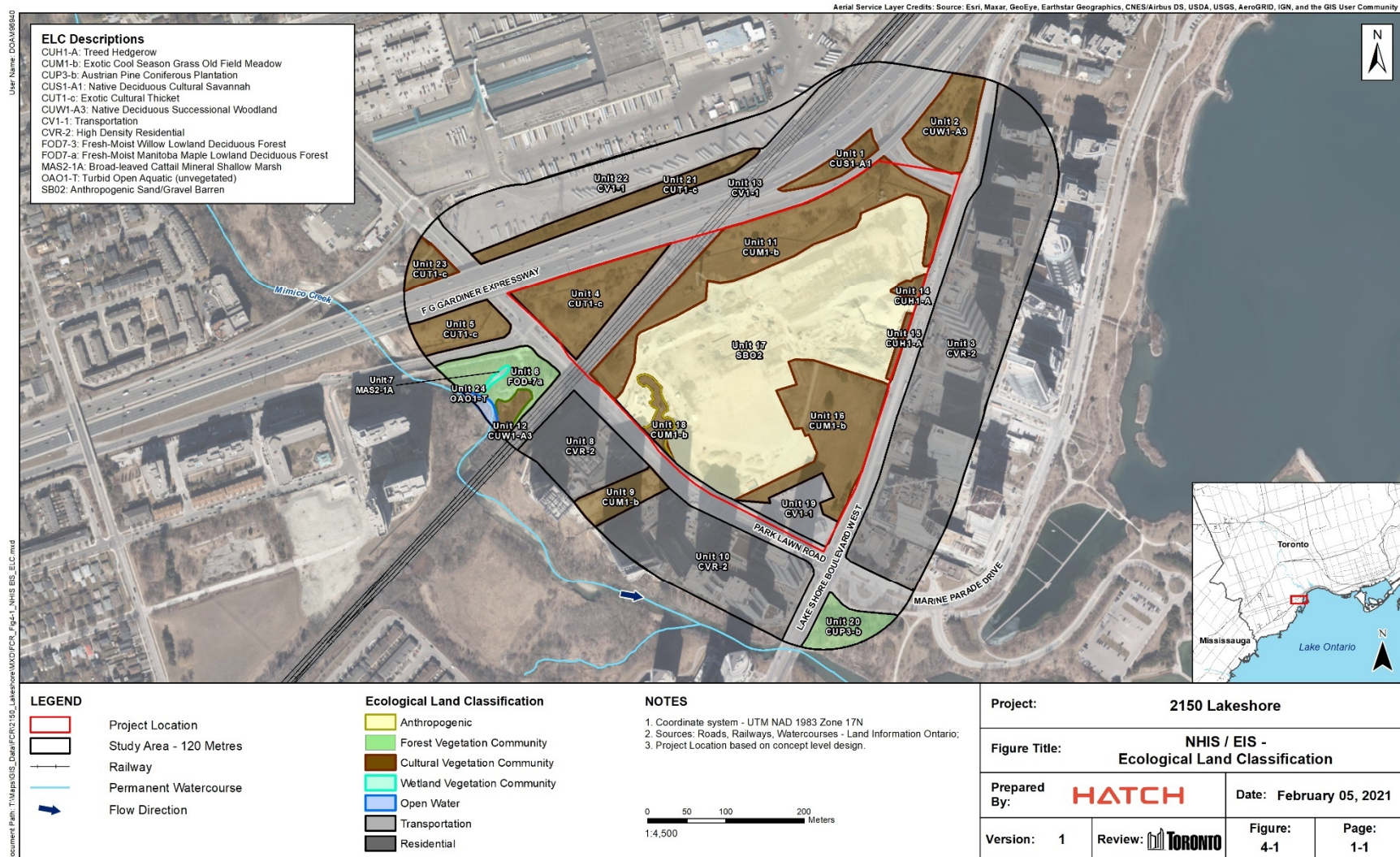


Figure 4-1: Ecological Land Classification

4.2.2 Butternut Survey

Arborist surveys were conducted on April 16, April 20, June 2 and June 3, 2020 to inform the Tree Inventory Plan (separate from this NHIS/EIS). At the time of the arborist surveys, a certified arborist surveyed for Butternut species throughout the vicinity of the Project Location. Additionally, Hatch biologists with ample experience with identifying Butternut were on site for an additional day to inventory the Study Area. No Butternut were identified within the Study Area.

4.2.3 Flora

TRCA assigns an L-Rank to species within the Toronto Region in order to quantify the species level of conservation concern. Table 4-3 highlights the TRCA's Flora Score range, associated L-Rank and a description of the level of conservation concern (TRCA, 2016).

Table 4-3: Assignment of Local Ranks (L-ranks) for Flora Species

Total of Scores	L-Rank	Level of Conservation Concern in Toronto Region
2 - 10	L5	Able to withstand high levels of disturbance; generally secure throughout the jurisdiction, including the urban matrix. May be of very localized concern in highly degraded areas.
11 - 13	L4	Able to withstand some disturbance; generally secure in rural matrix; of concern in urban matrix.
14 - 16	L3	Able to withstand minor disturbance; generally secure in natural matrix; considered to be of regional concern.
17 - 18	L2	Unable to withstand disturbance; some criteria are very limiting factors; generally, occur in high-quality natural areas, in natural matrix; probably rare in the TRCA jurisdiction; of concern regionally.
19 - 20	L1	Unable to withstand disturbance; many criteria are limiting factors; generally, occur in high-quality natural areas in natural matrix; almost certainly rare in the TRCA jurisdiction; of concern regionally.
Not linked to rank but generally high	LX	Extirpated from our region with remote chance of rediscovery. Presumably highly sensitive.
Not scored until assessed	LH	Hybrid between two native species; not scored; a hybrid that is highly stable and behaves like a species (e.g., <i>Equisetum x nelsonii</i>) is not given this designation, but is scored and ranked.
Not scored	L+	Exotic; not native to the 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.

Species lists to date are a compilation of Hatch field work conducted in 2020 and prior TRCA documentation. In total, 134 species of flora were recorded within the Study Area (Appendix C). Species assigned a TRCA L-Rank of L4, L3, L2 or L1 are shown below in Table 4-4. No SAR plants or vegetation communities were identified in the Study Area.

Table 4-4: Flora Species Identified within the Study Area that have an L1-L4 TRCA L-Rank

Common Name	Scientific Name	TRCA L-Rank (TRCA, 2016)
Black Willow	<i>Salix nigra</i>	L3
White Spruce	<i>Picea glauca</i>	L3
Black Ash	<i>Fraxinus nigra</i>	L4
Black-Eyed Susan	<i>Rudbeckia hirta</i>	L4
Freeman's Maple	<i>Acer freemanii</i>	L4
Pussy Willow	<i>Salix discolor</i>	L4
Red Maple	<i>Acer rubrum</i>	L4
Red Oak	<i>Quercus rubra</i>	L4
Softstem Bulrush	<i>Schoenoplectus tabernaemontani</i>	L4
White Birch	<i>Betula papyrifera</i>	L4
White Pine	<i>Pinus strobus</i>	L4
Wild Columbine	<i>Aquilegia canadensis</i>	L4

4.3 Birds

The Ontario Breeding Bird Atlas (OBBA) was consulted during the desktop review to identify species that have the potential to be found within the Study Area. A total of 111 species were recorded in the OBBA databases for square 17PJ23. A full list of birds recorded in the desktop review can be found in Appendix A. Table 4-5 lists species confirmed within the Study Area.

Table 4-5: Confirmed Bird Species within the Study Area

Common Name	Scientific Name	L-Rank (TRCA, 2016)
American Crow	<i>Corvus brachyrhynchos</i>	L5
American Goldfinch	<i>Spinus tristis</i>	L5
American Robin	<i>Turdus migratorius</i>	L5
Baltimore Oriole	<i>Icterus galbula</i>	L5
Bank Swallow	<i>Riparia riparia</i>	L3
Barn Swallow	<i>Hirundo rustica</i>	L4
Belted Kingfisher	<i>Megaceryle alcyon</i>	L4
Black-crowned Night heron	<i>Nycticorax nycticorax</i>	L3
Blue Jay	<i>Cyanocitta cristata</i>	L5
Brown Creeper	<i>Certhia americana</i>	L3
Brown-headed Cowbird	<i>Molothrus ater</i>	L5
Common Grackle	<i>Quiscalus quiscula</i>	L5
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	L2
Downy Woodpecker	<i>Picoides pubescens</i>	L5
Eastern Phoebe	<i>Sayornis phoebe</i>	L5
European Starling	<i>Sturnus vulgaris</i>	L+
Great Blue Heron	<i>Ardea herodias</i>	L3

Common Name	Scientific Name	L-Rank (TRCA, 2016)
Golden-crowned Kinglet	<i>Regulus satrapa</i>	L3
Grey Catbird	<i>Dumetella carolinensis</i>	L4
Hairy Woodpecker	<i>Leuconotopicus villosus</i>	L4
House Finch	<i>Haemorhous mexicanus</i>	L+
House Sparrow	<i>Passer domesticus</i>	L+
Killdeer	<i>Charadrius vociferus</i>	L4
Mallard	<i>Anas platyrhynchos</i>	L4
Mourning Dove	<i>Zenaida macroura</i>	L5
Northern Cardinal	<i>Cardinalis cardinalis</i>	L5
Northern Flicker	<i>Colaptes auratus</i>	L4
Northern Mockingbird	<i>Mimus polyglottos</i>	L5
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	L4
Red-tailed Hawk	<i>Buteo jamaicensis</i>	L5
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	L5
Rock Pigeon	<i>Columba livia</i>	L+
Ring-billed Gull	<i>Larus delawarensis</i>	L4
Savannah Sparrow	<i>Passerculus sandwichensis</i>	L4
Song Sparrow	<i>Melospiza melodia</i>	L5
Spotted Sandpiper	<i>Actitis macularius</i>	L4
Swainson's Thrush	<i>Catharus ustulatus</i>	N/A
Tree Swallow	<i>Tachycineta bicolor</i>	L4
Warbling Vireo	<i>Vireo gilvus</i>	L5
White-Throated Sparrow	<i>Zonotrichia albicollis</i>	L3
Willow Flycatcher	<i>Empidonax traillii</i>	L4
Yellow Warbler	<i>Setophaga petechia</i>	L5

In total, 42 species of birds were confirmed to be inhabiting or utilizing the Study Area during the site investigations. Of the species observed, 17 are ranked L5 (secure), 13 are ranked L4 (conservation concern in the urban matrix), six are ranked L3 (regional conservation concern), one is ranked L2 (regional and local conservation concern), and four are L+ (non-native). Locations of the breeding bird surveys can be found in Figure 4-2.

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. Additionally, the cultural woodlands and forests within the Study Area have the potential to provide habitat for a combination of woodland birds and those birds well adapted to the urban matrix within the Study Area. Lastly, numerous nesting killdeer were observed during site investigations within the footprint of the former Mr.

Christie Cookie Factory (Unit 17). Subsequent investigations noted the presence of killdeer fledglings throughout the area.

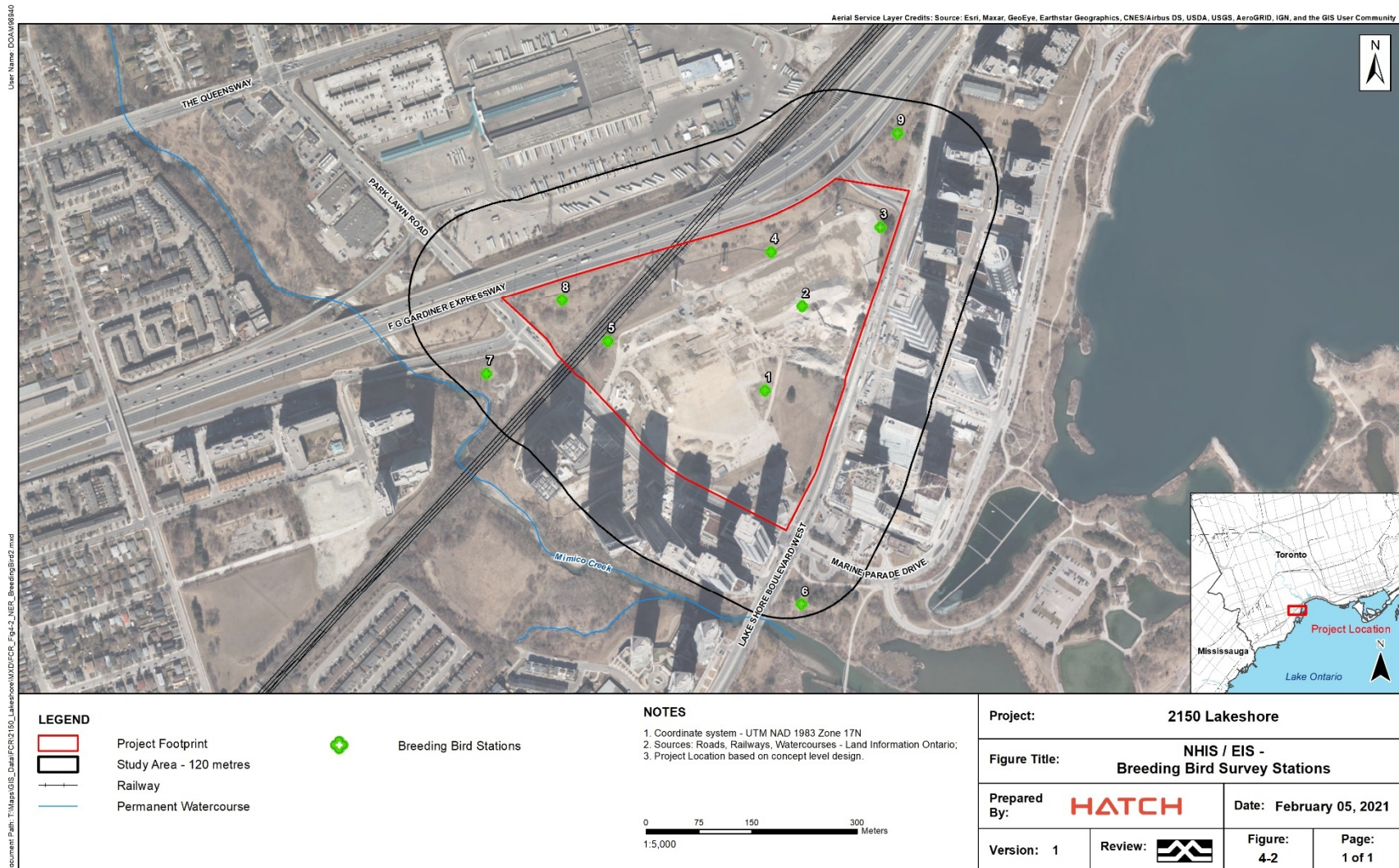


Figure 4-2: Breeding Bird Survey Locations

4.3.1 *At Risk Breeding Birds*

A review of the OBBA for square 17PJ23 resulted in records of ten SAR. One species record (Least Bittern) was also recorded within the 1km x 1km square (17PJ2230) within the NHIC database. A total of, eleven SAR birds were identified within the 10 km square overlapping the Study Area, three of which have a very low potential to occur, four with a low potential to occur, and two with a moderate to high potential to occur. Two SAR were also confirmed on site during field investigations (Table 4-6).

Table 4-6: SAR Bird Records within 10 km Square 17PJ23

Common Name	Scientific Name	ESA 2007 Status	Habitat in Ontario ¹	Likelihood to inhabit the Study Area
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Barn Swallows forage in open areas including suburban parks agricultural fields, beaches, and over open water such as lakes, ponds and coastal waters. Breeding habitat must include open areas for foraging, structures or cliffs to build nests on, and a source of mud such as a riverbank to provide the material for building nests.	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 the Study Area.
Bank Swallow	<i>Riparia riparia</i>	Threatened	Bank Swallows live in low areas along rivers, streams, coasts, and reservoirs. Their territories usually include vertical cliffs or banks where they nest in colonies.	Confirmed - Foraging was observed throughout the Study Area in suitable foraging habitat over fields and open aquatic features such as Mimico Creek; there is a low potential for nesting habitat along the creek, however candidate nesting habitat is present along the western bank of Mimico Creek immediately south of the Study Area.
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Bobolinks breed in open areas, preferring large fields with a mixture of grasses and broad-leaved plants like legumes and dandelions. They are considered area-sensitive and require patches > 5 ha.	Very Low – Meadows and grasslands do not meet the size requirements for habitat
Chimney Swift	<i>Chaetura pelagica</i>	Threatened	Chimney Swifts breed in urban and suburban habitats. They are most common in areas with a large concentration of chimneys for nest sites and roosts. In rural areas they may still nest in hollow trees, tree cavities, or caves. Chimney Swifts forage mostly over open terrain but also over forests, ponds, and residential areas.	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..

¹ Habitat descriptions obtained from the Cornell Lab of Ornithology: All About Birds website (The Cornell Lab, 2020)

Common Name	Scientific Name	ESA 2007 Status	Habitat in Ontario ¹	Likelihood to inhabit the Study Area
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	Common Nighthawks nest in both rural and urban habitats including coastal dunes and beaches, logged forest, recently burned forest, woodland clearings, prairies, plains, grasslands, open forests, and rock outcrops. They also nest on flat gravel rooftops. During migration they use farmlands, river valleys, marshes, coastal dunes, and open woodlands.	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 Meadowlark	<i>Sturnella magna</i>	Threatened	Eastern Meadowlarks are most common in native grasslands and prairies, but they also occur in pastures, hayfields, agricultural fields, airports, and other grassy areas as long as they have about six acres in which to establish a territory.	Very Low – Meadows and grasslands do not meet the size requirements for Eastern Meadowlark habitat.
Eastern Wood-Pewee	<i>Contopus virens</i>	Special Concern	Eastern Wood-Pewees breed in nearly any type of wooded habitat including mature woodlands, urban shade trees, roadsides, woodlots, and orchards. They prefer deciduous forest but also live in hardwood-conifers.	Low – Potential for foraging and nesting within cultural woodland and forest communities, however no individuals were observed during field investigations.
Least Bittern	<i>Ixobrychus exilis</i>	Threatened	Associated with open woodland and woodland edges; areas typically have many dead trees used for nesting and perching. Least Bitterns in Ontario nest in freshwater and brackish marshes with tall aquatic vegetation such as cattails and other reeds and rushes, preferentially in places interspersed with patches of open water and small stands of woody vegetation.	Very Low –very low potential to occur in the small cattail marsh within the Study Area.
Peregrine Falcon	<i>Falco peregrinus</i>	Special Concern	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	Moderate – Potential for foraging throughout Study Area. Some suitable nesting habitat on taller buildings in the vicinity of the project, however no

Common Name	Scientific Name	ESA 2007 Status	Habitat in Ontario ¹	Likelihood to inhabit the Study Area
			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.	individuals were observed during field investigations.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Special Concern	Red-headed Woodpeckers breed in deciduous woodlands with oak or beech, groves of dead or dying trees, river bottoms, burned areas, recent clearings, beaver swamps, orchards, parks, farmland, grasslands with scattered trees, forest edges, and roadsides. During the start of the breeding season they move from forest interiors to forest edges or disturbed areas. Wherever they breed, dead (or partially dead) trees for nest cavities are an important part of their habitat.	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>	Special Concern	Wood Thrushes breed throughout mature deciduous and mixed forests most commonly those with American beech, red maple, eastern hemlock, flowering dogwood, American hornbeam, oaks, or pines. They nest somewhat less successfully in fragmented forests and even suburban parks where there are enough large trees for a territory. Ideal habitat includes trees over 50 feet tall, a moderate understory of saplings and shrubs, an open floor with moist soil and decaying leaf litter, and water nearby.	Low – Potential for foraging and nesting in cultural woodland and forest communities, however no individuals were observed during field investigations.

Bank Swallows were observed during field investigations flying over the Study Area exhibiting foraging behavior. A small section of the western Mimico Creek bank was identified as candidate habitat due to the steep, highly eroded, sandy banks and presence of nesting holes, however this area is over 70 m west of the Study Area. Further studies confirmed that the nesting holes were being utilized by Kingfishers in the area. Bank Swallow 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 10 m west 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 were 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 were 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 were 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 *Fish and Wildlife Conservation Act (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 were 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 were observed during field investigations. This species and its habitat is not protected by the ESA. The species is protected under the MBCA.

4.4 Herpetofauna

The Herps of Ontario iNaturalist database (previously Ontario Herp Atlas) was consulted during the desktop review in order to identify species that have the potential to be found within the Study Area. A total of 11 species were recorded in square 17PJ23 (Appendix A), of which three are listed as SAR in the ESA (2007) and are discussed further in Section 4.4.1.

No herpetofauna species were recorded during field investigations in 2020. Despite the presence of a small cattail marsh located within the Study Area, the area was considered poor quality habitat with a limited potential for anurans to utilize this area. Given the abundance of better quality habitat within other areas of Mimico Creek (including the very high quality habitat located south of the Study Area at the mouth of Mimico Creek near Lake Ontario), there is limited potential for herpetofauna to be utilizing the Study Area.

4.4.1 At Risk Herpetofauna

A review of the 'Herps of Ontario' database for square 17PJ23 resulted in records for three SAR. One species record (Northern Map Turtle) was also recorded within the 1km x 1km square (17PJ2230) within the NHIC database. In total, four SAR were identified within the 10 km square overlapping the Study Area, three of which have a low potential to occur, and one with a moderate potential to occur (Table 4-7).

Table 4-7: SAR Herpetofauna Recorded within Square 17PJ23

Common Name	Scientific Name	ESA 2007 Status	Habitat in Ontario	Likelihood to Inhabit the Study Area
Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened	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.
Eastern Milksnake	<i>Lampropeltis triangulum</i>	Special Concern	Typically inhabits human-made structures. Rotting logs or the foundations of buildings 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.
Northern Map Turtle	<i>Graptemys geographica</i>	Special Concern	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
Snapping Turtle	<i>Chelydra serpentina</i>	Special Concern	Typically can be found in shallow waters with soft mud and excess 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.

Blanding's Turtle have a low potential to be found within Mimico Creek 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 150m southwest of the Study Area. No Blanding's Turtles were 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, however Eastern Milksnake were not observed during field investigations. This species and its habitat are not protected by the ESA.

There is a moderate potential for Northern Map Turtle to forage or bask within the Study Area. The moderate designation is likely conservative and 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 were 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 the species to utilize the cattail marsh and Mimico Creek within the Study Area. No Snapping Turtles were observed during field investigations. This species and its habitat are not protected by the ESA.

4.5 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). Various 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.

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.

4.6 Butterflies

In total, 96 butterfly species were recorded within the 10km x 10km OBA square 17PJ23. A comprehensive list of species recorded within the OBA full list of the 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 4.6.1.

No targeted surveys for butterflies were conducted, various butterfly species were incidentally recorded throughout the Study Area, including Black Swallowtail (*Papilio polyxenes*), Eastern Swallowtail (*Papilio glaucus*) and Monarch (*Danaus plexippus*).

4.6.1 At Risk Butterflies

A review of the OBA for square 17PJ23 resulted in records of three SAR, one of which has a very low potential to occur and one with a low potential to occur. Additionally, one species (Monarch) has been confirmed on the site during the 2020 field investigations (Table 4-8).

Table 4-8: SAR Butterflies Recorded within Square 17PJ23

Common Name	Scientific Name	ESA 2007 Status	Habitat in Ontario	Likelihood to Inhabit the Study Area
Karner Blue	<i>Lycaeides melissa samuelis</i>	Extirpated	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 in initial vegetation inventory
Monarch	<i>Danaus plexippus</i>	Special Concern	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.
Mottled Duskywing	<i>Erynnis martialis</i>	Endangered	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 plant species associated with Mottled Duskywing habitat or individuals of the species were observed.

4.7 Significant Wildlife Habitat

To evaluate the potential for SWH within the Study Area, ELC designations were compared to the Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (MNRF, 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, two Candidate SWHs required field surveys 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 4-9.

Table 4-9: Candidate Significant Wildlife Habitat identified using Ecological Land Classification within the Study Area

Candidate Significant Wildlife Habitat	TRCA Identified Ecosite	Potential within Study Area	Rationale
Reptile Hibernaculum	All except OAO1-T and CVR-2	Moderate	Exposed limestone and shale along the creek and rail corridor indicate a moderate probability of suitable conditions for snake hibernacula on the Study Area.
Special Concern and Rare Wildlife Species	All	Moderate	A wide variety of habitats are present within the Study Area; Special Concern species were recorded within one km of the Study Area.

4.8 Landscape Connectivity

Mimico Creek and the adjacent riparian areas as identified in the Ravine and Natural Heritage Feature Plan provide important and significant connectivity of wildlife habitats through the Study Area. Beyond this, there is little landscape connectivity between the Project Location and the surrounding habitat as it is bordered by Park Lawn Road, Lake Shore Boulevard and the Gardiner Expressway. The Project Location is also bisected by the Lakeshore West rail corridor, further fragmenting any habitat within the site.

4.9 Significant Features

One small wetland exists within the Study Area on the west side of Park Lawn Road, however it is not expected to be significant due the size (~300 m²). Furthermore, the closest Provincially Significant Wetland (PSW) to the Study Area is located approximately 1 km to the northeast (Lower Humber River Wetland Complex).

No ANSI's are located within the Study area. The closest ANSI is located approximately 1.8 km to the northeast (High Park Oak Woodlands).

The area north of the rail corridor falls within a NHS as shown within the City of Toronto Interactive Map. Another small area along the northern fence line within the 2150 Lakeshore property is also considered part of the NHS. The areas have been designated as an NHS as part of the larger NHS surrounding Mimico Creek and its associated valley lands.

5. Proposed Works

The Master Plan details areas where parks, structures and roads are currently conceptualized. As no detailed design has started, the impact analysis in Section 6 was completed under the assumption that all areas within the Project Location will be disturbed.

6. Impact Assessment and Mitigation

An Impact Assessment was conducted to identify any potential effects from the project 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.

6.1 Soils, Landforms, and Surficial Geology

6.1.1.1 *Potential Impacts*

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 6.2. 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.

As the entire Project Location is expected to be cleared and grubbed, all existing surface fill materials within the footprint of the 2150 Site, as well as soils near the surface in the periphery areas are to be disturbed and/or removed. In select areas where large building developments and underground parking lots are proposed, deeper soils are expected to be excavated.

6.1.1.2 *Mitigation Measures*

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

- 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 should be defined prior to construction, if required (e.g., change in construction disturbance area, final staging areas).
- A Soil Management Plan (SMP) 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).
- 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 in order to outline the specific mitigation required at various locations within the Study Area.

- ESC measures will be monitoring during construction. If the ESC or dewatering measures are not functioning properly during construction, 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.
- When feasible, 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).

6.2 Hydrological or Hydrogeological Resources

6.2.1 Surface Water

6.2.1.1 Potential Impacts

Impacts to surface water quality is expected to be minimal given the absence of surface waters within the Project Location. No impacts to the west side of Park Lawn Road are expected from Project construction or operation. Additional studies are being concurrently undertaken to

address the impacts to Mimico Creek from the proposed Park Lawn GO Station; these impacts are out of the scope of this Project.

Although direct impacts to Mimico Creek are not expected, if site run-off is not properly addressed, there is the potential to negatively impact Mimico Creek water quality. 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, 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.

6.2.1.2 *Mitigation Measures*

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

- Mitigation measures for ESC, bank stability and spills included in Section 6.1.1.2 will reduce impacts to hydrological features and aquatic habitat on site. A detailed ESC Plan should be created in order to outline the specific mitigation required at various locations within the Study Area.
- ESC measures will be monitoring during construction. If the ESC or dewatering measures are not functioning properly during construction, no further work in the affected areas will occur until the problem is addressed.
- 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.

6.2.2 *Groundwater*

6.2.2.1 *Potential Impacts*

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.

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 uptake from a singular project or industry can lead to shortages or disruptions in groundwater levels for others.

Additionally, the increase of hardened surfaces within the Study Area from the proposed development can lead to a reduction of infiltration capacity in the area. A stormwater management plan will be developed to mitigate the impacts of the increase to hardened surfaces in the area.

6.2.2.1.1 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 6.1.1.2 will be sufficient to mitigate any potential contamination of groundwater. A more detailed ESC Management Plan should be prepared in order to outline the specific mitigation required at various locations within the Study Area.
- ESC measures will be monitoring during construction. If the ESC or dewatering measures are not functioning properly during construction, no further work in the affected areas will occur until the problem is addressed.
- A site specific Dewatering Management Plan shall be followed in order to determine groundwater levels and aquifer recharge rates to mitigate any impacts to groundwater quantity.
- Stormwater management activities within the Study Area will be designed to meet the standards set forth in the Green Development Standard (Toronto, 2019).
- 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.
- Any discharge from dewatering to a sewer will be discharged subject to a City of Toronto Discharge Agreement and follow the Toronto Sewer Use By-law.

6.3 Terrestrial Vegetation

6.3.1 *Potential Impacts*

All lands within the Project Location are expected to be cleared and grubbed during construction.

Table 6-1 indicates the amount of each ELC area to be cleared within the project area and the TRCA L-rank for each vegetation community. As indicated by the TRCA L-rank, the site consists primarily of non-sensitive and disturbed habitats, or communities dominated by exotic species. Of the five communities that will be impacted from construction, one is designated as L5, two are designated as non-native, one is a transportation corridor (parking lot) and considered previously disturbed, and one is designated as L4. The L4 Anthropogenic Sand/Gravel Barren (SBO2) represents the area containing fill materials located in the footprint of the former Mr. Christie factory and is considered generally secure in rural matrix and of conservation concern in the urban matrix. The Project Location is considered part of the urban matrix and as such represents a loss of 7.50 ha of SB02 community. The total ELC Area within TRCA for SBO2 is only 2.4 ha, however this is consistent with TRCA ELC investigations being focussed in areas that have not been previously disturbed.

Table 6-1: ELC Overall Impacts

Community Name	ELC Code	L-Rank	Area to be Cleared (ha)
Treed Hedgerow	CUH1-A	L5	0.15
Exotic Cool Season Grass Old Field Meadow.	CUM1-b	L+	4.20
Anthropogenic Sand / Gravel Barren	SBO2	L4	7.50
Exotic Cultural Thicket	CUT1-c	L+	1.14
Transportation	CV1-1	N/A	1.65

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 development, 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 habitat diversity within the city, or the province. Although the impacts are considered minor, appropriate mitigation measures have been developed in order to reduce negative impacts to vegetation within the Study Area.

The Study Area hosts a number of invasive species likely 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.

In total, 13 species that are locally or regionally significant as defined by the TRCA and/or the City of Toronto are expected to be impacted by construction activities. Of the 13 species, 11 are considered L4 (conservation concern in urban environments) and 2 are L3 (regional conservation concern).

6.3.2 **Mitigation Measures**

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

- 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 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 off-site disposal).
- In accordance with the SMP, topsoil will be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species through preservation of the existing seed bank.
- Where revegetation is required, a native seed mix, which does not contain invasive species, will be used. Species outlined in Table 4-4 (L4 and L3 species) should be incorporated into the seed mix where possible.
- 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.
- If extensive invasion of non-native species is identified as a result of the Project, contingency measures may include an applicable herbicide application. A herbicide application plan will be developed as required and submitted to the TRCA for review.
- A 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 process.
- Any herbicide applications to clear vegetation within the corridor ROW will be applied in accordance with industry BMPs and regulations including TRCA requirements.

If herbicides are applied, only staff certified in their application will undertake the work. Herbicides will not be applied on windy days when there is greater potential for drift to adjacent natural areas.

- Any tree clearing or limb trimming will be limited to meet necessary safety clearances.
- Trees will be trimmed by a Qualified Professional to limit tree damage.
- A Tree Inventory Plan (under separate cover) has been prepared for the Project; recommendations proposed will inform any required compensation and mitigation measures for tree species, including those listed as L4 to L3.

6.4 Birds

6.4.1 *Potential Impacts*

Construction activities and pre-construction activities include the clearing and grubbing of land surrounding the proposed development. As many migratory birds were confirmed to reside or utilize the Study Area, tree clearing has the potential to result in the destruction of nesting habitat. Clearing and grubbing will result in a loss of up to 12.99 ha of terrestrial vegetation communities and will impact a total of 14.42 ha including the transportation corridors. 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. Though habitat fragmentation could result from the proposed activities, it should be noted that the site is already heavily fragmented by the various rail and vehicle travel corridors within the Study Area.

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.

6.4.1.1 *Potential Impacts to Species At Risk Birds*

Construction is limited to east of Park Lawn Road and will not directly impact the Mimico Creek valley, therefore, construction is unlikely to reduce the valley's function as foraging habitat for Bank Swallow.

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 10 m west of the Study Area boundary 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, since construction will occur east of Park Lawn Road, it 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.

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 below for situations where nesting habitat or an individual is found within the Study Area prior to construction.

6.4.2 *Mitigation Measures*

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

- A Wildlife Management Plan shall be developed and followed accordingly.
- Vegetation will be removed outside of the breeding bird window between September 1 and March 31 of any given year to minimize impacts to breeding birds (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.
- 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.
- 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.
- The Project construction (including pre-construction land clearing) should 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.
- 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 monitor. 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 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.

6.5 Herpetofauna

6.5.1 *Potential Impacts*

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 low since there is no construction occurring within the Mimico Creek valley.

6.5.1.1 *Potential Impacts to Species at Risk Herpetofauna*

6.5.1.1.1 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 area falls outside of the Study Area.

6.5.2 *Mitigation*

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

- A Wildlife Management Plan shall be developed and followed accordingly.
- The site shall be swept prior to each day to ensure no herpetofauna are found within the construction limits.

- Exclusionary fencing shall be installed to eliminate access to the Project Location in advance of construction to prevent reptiles and amphibians from entering the site.
- Workers shall be provided with training on safe handling procedures for relocating wildlife from the construction site.
- 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

6.6 Mammals

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.

6.6.1.1 *Potential Impacts to Species at Risk Mammals*

6.6.1.1.1 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 Location would result in the removal of five potential snags outlined in Section 4.5. A large majority of the snags, including the highest quality snags, are located outside of the Project Location and are not expected to be impacted, therefore it is anticipated that bats would use these if habitat within the Project Location was removed. If impacts to SAR bats and their habitat cannot be avoided, future consultation with the MECP will determine compensation is required (Ministry of Natural Resources, 2007).

6.6.2 *Mitigation*

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

- A Wildlife Management Plan shall be developed during detailed design and followed accordingly.
- The site shall be swept prior to each day to ensure no mammals are found within the construction limits.
- Exclusionary fencing shall be installed to eliminate access to the Project Location in advance of construction to prevent some mammals from entering the site.
- Workers shall be provided with training on safe handling procedures for relocating wildlife from the construction site.

- 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.

6.7 Butterflies

6.7.1 *Potential Impacts*

Impacts to butterflies from the proposed works are considered low due to the lack of abundant habitat found within the site. Some scattered individuals of milkweed were identified throughout the Study Area in the various cultural meadows and thickets. Monarchs (Special Concern) were observed throughout the 2020 field investigations around the areas containing milkweed.

6.7.2 *Mitigation*

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

- Where revegetation is required, a native seed mix, which does not contain invasive species, will be used. A seed mix including Common Milkweed, such as CVC 7 - Upland Native Meadow Mix (Ontario Seed Company) is recommended, or an approved equivalent.

6.7.3 *Significant Wildlife Habitat*

6.7.4 *Potential Impacts*

6.7.4.1 *Reptile Hibernaculum*

No reptiles were 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 not expected since construction will be occurring east of Park Lawn Road and will not occur in the Mimico Creek valley.

6.7.4.2 *Special Concern and Rare Wildlife Species*

Seven species listed as Special Concern were identified as having potential to inhabit the Study Area (Appendix E). Over the course of field investigations conducted to date, no species listed as Special Concern were observed within the area with the exception of Monarch. Although only one Special Concern species was observed, there is still a potential for Special Concern species to utilize the Study Area due to the presence of several cultural woodland communities and meadows that may provide foraging habitat for the species. However, impacts to these species are expected to be insignificant due to the lack of criteria that would classify the Project Location as supporting species/habitats of conservation concern as outlined in Appendix Q of the Significant Wildlife Habitat Technical Guide (Ministry of Natural Resources, 2000). Criteria used to identify these areas 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. The proposed Project also 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 and vehicles as the area contains four active tracks with trains speeds up to 80 km/h and a number of busy road corridors. The majority of the Study Area does not contain fencing or barriers between the rail corridor, the roads, and the naturalized areas, therefore it is assumed that species within the area are well adapted to trains and other vehicles. Due to the high level of tolerance to trains and other vehicles, along with the lack of Special Concern species observed within the Study Area, impacts from potential collisions are considered insignificant on special concern species

6.7.5 *Mitigation Measures*

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

- A Wildlife Management Plan shall be developed and followed accordingly.
- Mitigation measures listed in Section 6.4, 6.5, and 6.6, shall be followed to mitigate any impacts during construction for wildlife within the Study Area

6.8 **Landscape Connectivity**

6.8.1 *Potential Impacts*

As there is little habitat connectivity within the Study Area, minimal impacts to connectivity are expected from the development. As the development will likely result in increased traffic on both Park Lawn Road and Lake Shore Boulevard, any species attempting to cross these roads will have an increased risk of mortality. As very few species are anticipated to utilize the Project Location apart from birds, there is not expected to be a significant number of individuals crossing the roads.

6.9 **Significant Features**

6.9.1 *Potential Impacts*

Areas to the west of Park Lawn Road are not expected to be impacted from the proposed construction activities as there is no proposed construction proposed. Areas that were given a NHS designation east of Park Lawn Road described in Section 4.8 will be impacted from the proposed development. Areas that have been designated as part of the NHS will undergo clearing and grubbing within the Project Location. As the NHS areas contain poor quality habitat and are highly fragmented from the rest of the NHS by highways, roads and the rail corridor, no significant impacts to the NHS as a whole are expected.

6.9.2 *Mitigation Measures*

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 6.3 regarding tree vegetation removal and invasive species management shall be followed to mitigate impacts to the ravine system; and
- Mitigation measures developed to minimize impacts from erosion and sediment outlined in Section 6.1 shall be followed in order to mitigate impacts to the ravine system.

7. Conclusion

In total, five site visits were conducted throughout the spring/summer of 2020 to inform the contents of this NHIS/EIS.

Based on the desktop review and site investigations, the area south of the rail corridor is considered poor quality habitat for most species of wildlife due to the large amount of previously disturbed area present within the site, the previous land uses of the property (industrial), as well as the limited landscape connectivity due to the high traffic roads surrounding the site. Due to the poor quality habitat in this area, the risk for impacts from the proposed development is very low.

The property north of the rail corridor provides slightly higher habitat quality due to the presence of vegetation, however the area is still considered poor quality habitat due to the limited habitat connectivity and minimal tree cover.

Although some wildlife species may utilize habitats found within the Project Location, the habitat is commonly found within areas adjacent to the Study Area and as a result, the loss of poor quality habitat is unlikely to result in significant impacts to these species as they will likely move to other habitats. Additionally, no significant impacts from the clearing of the NHS system east of Park Lawn Road are expected.

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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>Polioptila 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 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>			

Common Name	Scientific Name	SARO	COSEWIC	SARA
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>			
Pipevine Swallowtail	<i>Battus philenor</i>			
Zebra Swallowtail	<i>Eurytides marcellus</i>			
Black Swallowtail	<i>Papilio polyxenes</i>			
Eastern Giant Swallowtail	<i>Papilio cressphontes</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>			

Common Name	Scientific Name	SARO	COSEWIC	SARA
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 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 lygdamus</i>			
Karner Blue	<i>Plebejus melissa samuelis</i>	EXP	EXP	EXP
American Snout	<i>Libytheana carinenta</i>			
Variegated Fritillary	<i>Euptoieta claudia</i>			
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>Aglaia milberti</i>			
American Lady	<i>Vanessa virginiensis</i>			
Painted Lady	<i>Vanessa cardui</i>			
Red Admiral	<i>Vanessa atalanta</i>			

Common Name	Scientific Name	SARO	COSEWIC	SARA
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 17), April 17, 2020



Photograph B-2: View of grassed area within Mr. Christie site looking south (Unit 18), April 17, 2020



Photograph B-3: View of the grassed area at Mr. Christie site looking east (Unit 11), April 17, 2020



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



Photograph B-5: View of the small cattail marsh looking north (Unit 7), April 17, 2020



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



Photograph B-7: View of Mimico Creek looking north (Unit 24), April 17, 2020



Photograph B-8: View of the parking lot within the 2150 Lake Shore site looking west (Unit 19), April 17, 2020



Photograph B-9: View of 2150 Lake Shore site looking west (Unit 17), April 17, 2020



Photograph B-10: View of a treed hedgerow along the fence line of 2150 Lake Shore looking northeast (Unit 14), April 17, 2020



Photograph B-11: View of a treed hedgerow along the fence line of 2150 Lake Shore looking northeast (Unit 15), April 17, 2020



Photograph B-12: View of the open grass area of 2150 Lake Shore looking southwest (Unit 16), April 17, 2020



Photograph B-13: View of the conifer plantation on the corner of Park Lawn Road and Lake Shore Boulevard looking northeast (Unit 20), April 17, 2020



Photograph B-14: View of the cultural woodland on the southern railway embankment looking northeast (Unit 12), April 17, 2020

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	-	-	-	-	L+	-	I
American Elm	<i>Ulmus Americana</i>	3	-3	G5	S5	-	-	-	X	L5	-	N
Annual Sow Thistle	<i>Sonchus oleraceus</i>	*	-3	GNR	SNA	-	-	-	X	L+	-	I
Austrian Pine	<i>Pinus nigra</i>	*	5	GNR	SNA	-	-	-	-	L+	-	I
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 Elderberry	<i>Sambucus nigra</i>	*	-3	G5	SNA	-	-	-	U	L5	-	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	G5	SNA	-	-	-	X	L+	-	I
Black Swallowwort	<i>Vincetoxicum nigrum</i>	*	5	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 ³	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

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
Bull Thistle	<i>Cirsium vulgare</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Canada Fleabane	<i>Conyza 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
Chicory	<i>Cichorium intybus</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Choke Cherry	<i>Prunus virginiana</i>	2	1	G5TQ?	S5	-	-	-	X	L5	-	N
Coltsfoot	<i>Tussilago farfara</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
Common Apple	<i>Malus domestica</i>	*	5	G5	SNA	-	-	-	X	L+	-	I
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 Wintercress	<i>Barbarea vulgaris</i>	*	0	GNR	SNA	-	-	-	X	L+	-	I
Bachelor's Button	<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 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

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Day Lily	<i>Heemerocallis fulva</i>	*	5	GNA	SNA	-	-	-	X	L+	-	I
Dog Strangling Vine	<i>Cynanchum rossicum</i>	*	5	GNR	SE5	-	-	-	X	L+	-	I
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
English Oak	<i>Quercus robur</i>	*	5	GNR	SNA	-	-	-	-	L+	-	I
European Mountain Ash	<i>Sorbus aucuparia</i>	*	5	G5	SNA	-	-	-	X	L+	-	I
Evening Primrose	<i>Oenothera biennis</i>	0	3	G5	S5	-	-	-	U	L5	-	N
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
Forsythia	<i>Forsythia spp.</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Freeman's Maple	<i>Acer freemanii</i>	6	-5	GNR	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
Ginkgo Biloba	<i>Ginkgo biloba</i>	-	-	-	-	-	-	-	-	-	-	I
Goat's Beard	<i>Tragopogon dubius</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Gray Dogwood	<i>Cornus racemosa</i>	2	0	G5	S5	-	-	-	X	L5	-	N
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

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Herb Robert	<i>Geranium robertianum</i>	2	3	G5	S5	-	-	-	X	L+?	-	I
Hispid Buttercup	<i>Ranunculus hispidus</i>	8	0	G5	S3	-	-	-	E	LX	-	N
Hybrid Cattail	<i>Typha glauca</i>	1	-5	G5	S5	-	-	-	X	L+	-	I
Japanese Knotweed	<i>Reynoutria japonica</i> var. <i>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
Little-Leaf Linden	<i>Tilia cordata</i>	*	5	GNR	SNA	-	-	-	-	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
Norway Spruce	<i>Picea abies</i>	*	5	G5	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

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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 Cedar	<i>Juniperus virginiana</i>	4	3	G5	S5	-	-	-	R ¹	L5	-	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
Riverbank Grape	<i>Vitis riparia</i>	0	0	G5	S5	-	-	-	X	L5	-	N
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
Small Forget-Me-Not	<i>Myosotis sylvatica</i>	*	5	G5	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
Spiny-Leaved Sow-Thistle	<i>Sonchus asper</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
St. John's Wort	<i>Hypericum perforatum</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
Staghorn Sumac	<i>Rhus typhina</i>	1	5	G5	S5	-	-	-	X	L5	-	N
Star of Bethlehem	<i>Ornithogalum umbellatum</i>	*	3	G3G5	SNA	-	-	-	X	L+	-	I

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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
Sweet-White Clover	<i>Melilotus albus</i>	*	3	G5	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
Tatarian 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?	-	-	-	-	L5	-	N
Wayfaring Tree	<i>Viburnum lantana</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I
White Ash	<i>Fraxinus americana</i>	4	3	G5	S4	-	-	-	X	L5	-	N
White Birch	<i>Betula papyrifera</i>	2	3	G5	S5	-	-	-	X	L4	-	N
White Clover	<i>Trifolium repens</i>	*	3	GNR	SNA	-	-	-	X	L+	-	I
White Pine	<i>Pinus strobus</i>	4	3	G5	S5	-	-	-	X	L4	-	N
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 officinallis</i>	*	3	G5?	SNA	-	-	-	X	L+	-	I
Wild Carrot	<i>Daucus Carota</i>	*	5	GNR	SNA	-	-	-	X	L+	-	I

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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
Willow	<i>Salix spp.</i>	*	*	GNA	SNA	-	-	-	*	*	-	*
Yarrow	<i>Achillea millefolium</i>	*	3	G5	SNA	-	-	-	X	L+	-	I

Appendix D

SWH 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 (e.g., 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 MIST^{cxl}Index #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^{cxl}The combined area of the ELC ecosites and a 100m radius area is the SWH^{cxlvi}Wetland area and shorelines associated with sites identified within the SWHTG^{cxlvi} Appendix Kcxl 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^{cxl} 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 AreaNo 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 Area 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, cxī, cxviii}<i>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH</i> <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 five over-wintering Midland Painted Turtles is significant^īOne or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant^īThe 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 Areas)	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 OxygenWetland present is poor quality overwintering habitat

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)	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} . <ul style="list-style-type: none">SWH MIST^{cxlix} Index #28 provides development effects and mitigation measures for turtle wintering habitat	<ul style="list-style-type: none">None 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)ⁱ<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 SWHⁱSWH MIST^{cxlix} Index #13 provides development effects and mitigation measures for snake hibernacula	<p>Studies did not confirm the presence 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 habitat significant. An identified colony can be very</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 the following ecosites: CUM1 CUT1</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 AuthoritiesOntario Breeding Bird AtlasBird Studies Canada; NatureCounts http://www.birdscanada.org/birdmon/	<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 breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for	<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 areaNo areas with exposed soil banks, undisturbed or naturally eroding

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
important to local populations. All swallow population are declining in Ontario ^{ccxix} .		CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	<ul style="list-style-type: none">Field Naturalist Clubs	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">None of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</p> <p><u>Rationale:</u> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually</p>	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 2¹ 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>
<p>Colonially-Nesting Bird Breeding Habitat (Ground)</p> <p><u>Rationale:</u> Colonies are important to local bird population, typically sites are only known colony in area and are used annually</p>	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; MAS1-3; CUM CUT CUS	<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 for Wind Power Projects”^{ccxi}SWH MIST^{cxix}Index #6 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 areaNo islands or peninsulas associated with open water or in marshy areasNone 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	
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, xlii}.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^{†cxlix}. 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">Bird Studies CanadaOntario NatureLocal birders and field naturalist clubOntario Important Bird Areas (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
Deer Winter Congregation Areas <u>Rationale:</u>	White-tailed Deer	All Forested Ecosites with these ELC Community Series;	<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	Studies confirm: <ul style="list-style-type: none">Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF ^{cxlviii}	No suitable candidate habitat is present.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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} .		FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50ha may also be used.	<p>large numbers in suitable woodlands</p> <ul style="list-style-type: none">Large 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[Ⓔ] <p><u>Information Sources</u></p> <ul style="list-style-type: none"><i>MNRF District Offices</i><i>LIO/NRVIS</i>	<ul style="list-style-type: none">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^íStudies 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	<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 <p>Conclusion: no candidate SWH or confirmed SWH is present</p>

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	
Cliffs and Talus Slopes <u>Rationale:</u> Cliffs and Talus Slopes are extremely rare habitats in	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"><i>The Niagara Escarpment Commission has detailed information on location of these habitats</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

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Ontario.			<ul style="list-style-type: none">• OMNRF Districts• Natural Heritage Information Centre (NHIC) has location information available on their website• Field Naturalist Clubs• Conservation Authorities		present within study area. Conclusion: no candidate SWH or confirmed SWH is present.
Sand Barren Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	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%.	A sand barren area >0.5ha in size[Ⓔ] <u>Information Sources</u> <ul style="list-style-type: none">• OMNRF Districts• Natural Heritage Information Centre (NHIC) has location information available on their website• Field Naturalist Clubs• Conservation Authorities	<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)^l.• SWH MIST^{cxlix} Index #20 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.
Alvar Rationale: Alvars are extremely rare habitats in Ecos-region 7E.	ALO1 ALS1 ALT1 CUM2 CUS2 CUT2-1 CUW2 FOC1 FOC2 <u>Five Alvar Indicator Species:</u> 1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum These indicator species are very specific to Alvars within Ecoregion 7E ^{Ⓒxlix}	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 barren with a less than 60% tree cover ^{lxxviii} .	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. ^{Ⓒxcix} <u>Information Sources</u> <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,cxlix} 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	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.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
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 mapping• OMNRF Districts• Field Naturalist Clubs• Conservation Authorities• Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations• Municipal 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 SWH• Determine 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 website• OMNRF Districts• Field Naturalists Clubs• Conservation 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 SWH• Site 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 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">• OMNRF Districts• Natural Heritage Information Centre (NHIC) has location information available on their website• Field Naturalists Clubs• Conservation Authorities	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 SWH• Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)• SWHDSS^{cxlix} Index #19 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.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Other Rare Vegetation Communities</p> <p><u>Rationale:</u> Plant communities that often contain rare species which depend on the habitat for survival.</p>	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.	<p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M ^{cxlviii}</p> <p>The OMNRF/NHIC will have up to date listing for rare vegetation communities.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none">Natural Heritage Information Centre (NHIC) has location information available on their websiteOMNRF DistrictsField Naturalists ClubsConservation Authorities	<p>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG^{cxlviii}</p> <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	<p>No rare vegetation communities were identified during surveys.</p> <p>Conclusion: No candidate SWH or confirmed SWH is present.</p>

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^Í, or;Presence of 10 or more nesting pairs for listed species including Mallards^Í.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) <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 area <p>Conclusion: no candidate SWH or confirmed SWH is present</p>																		

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	
<p>Woodland Raptor Nesting Habitat</p> <p>Rationale: Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.</p>	<p>Barred Owl Broad-winged Hawk</p> <p>Cooper’s Hawk</p> <p>Northern Goshawk</p> <p>Red-shouldered Hawk Sharp-shinned Hawk</p>	<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 stick nests were observed during field investigationsNo natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitatNone of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</p>
<p>Turtle Nesting Areas</p> <p>Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p>Midland Painted Turtle</p> <p>Special Concern Species: Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) ^{cxlviii} or within the following ELC Ecosites: BOO1 FEO1 MAS1 MAS2 MAS3 SAF1 SAM1 SAS1</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 banksDue to the poor quality of habitat it is unlikely to support an

Specialized Wildlife Habitat	Wildlife Species	Candidate Significant Wildlife Habitat (SWH)		Confirmed SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<div>substrate for nesting turtles (well-drained sands and fine gravels)</div> <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	<div>area of habitat</div> <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	<div>abundance of turtles that would nest of the marginal banks</div> <div>Conclusion: no candidate SWH or confirmed SWH is present</div>
<div>Seeps and Springs</div> <div>Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</div>	<div>Ruffed Grouse</div> <div>Salamander spp.</div> <div>Spruce Grouse</div> <div>White-tailed Deer</div> <div>Wild Turkey</div>	<div>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.</div>	<div>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system ^{cxvii, cxlix}.</div> <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}. <div>Information Sources:</div> <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	<div>Field Studies confirm:</div> <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	<div>No suitable candidate habitat is present.</div> <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 <div>Conclusion: no candidate SWH or confirmed SWH is present</div>
<div>Amphibian Breeding Habitat (Woodland)</div> <div>Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations</div>	<div>Blue-spotted Salamander</div> <div>Eastern Newt</div> <div>Gray Treefrog</div> <div>Spotted Salamander</div> <div>Spring Peeper</div> <div>Western Chorus Frog</div> <div>Wood Frog</div>	<div>All Ecosites associated with these ELC Community Series; FOC FOD FOM SWC SWD SWM</div> <div>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</div>	<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} <div>Information Sources:</div> <ul style="list-style-type: none">Ontario Herpetofaunal Summary Atlas (or other similar atlases) for recordsLocal landowners may also provide assistance as they may hear spring-time choruses of amphibians on their propertyOMNRF Districts and wetland evaluationsField Naturalist clubsCanadian Wildlife Service Amphibian Road Call SurveyOntario Vernal Pool Association: http://www.ontariovernalpools.org	<div>Studies confirm;</div> <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 surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlandsThe habitat is the wetland area plus a 230m radius of woodland area ^{lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx, lxxi} . 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	<div>No suitable candidate habitat is present.</div> <ul style="list-style-type: none">One of the ELC ecosite codes present are within study area (FOD)One small cattail marsh present adjacent to a woodlandWetland does not meet the minimum size requirement of >500m² (about 25m diameter)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	
		amphibians			Conclusion: no candidate SWH or confirmed SWH is present
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 habitatsPresence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predatorsBullfrogs require permanent water bodies with abundant emergent vegetation Information Sources: <ul style="list-style-type: none">Ontario Herpetofaunal Summary Atlas (or other similar atlases)Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call CountOMNRF Districts and wetland evaluationsReports and other information available from Conservation Authorities	<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/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 SWHA 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 wetlandsIf a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table D-5 of this ScheduleSWH MIST ^{cxlix} Index #15 provides development effects and mitigation measures	<p>No suitable candidate habitat is present.</p> <ul style="list-style-type: none">Two of the ELC ecosite codes are present within study area (MA, OA)No Wetlands >500m²None of the listed species were recorded Conclusion: no candidate SWH or confirmed SWH is present
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 area sensitive interior forest song birds.	Blackburnian Warbler Black-throated Blue Warbler Black-throated Green Warbler Blue-headed Vireo Northern Parula Ovenbird Pileated Woodpecker Red-breasted Nuthatch Veery Scarlet Tanager Winter Wren Yellow-bellied Sapsucker Special Concern: Canada Warbler Cerulean Warbler	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, cli, clii, cliii, cliv, clv, clvi, clvii, clviii, clix}Interior forest habitat is at least 200m from forest edge habitat. ^{clxiv} Information Sources: <ul style="list-style-type: none">Local birder clubsCanadian Wildlife Service (CWS) for the location of forest bird monitoringBird 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	<p>Studies confirm:</p> <ul style="list-style-type: none">Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. [Ⓔ] <p>Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.[Ⓔ]</p> <ul style="list-style-type: none">Conduct field investigations 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 #34 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 >30 haNone of the listed species were recorded 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 (E). <p>Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH (E).</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 are present within study area (MA)None of the listed species were recorded <p>Conclusion: no candidate SWH or confirmed SWH is present</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 Agriculture• Local bird clubs• Ontario Breeding Bird Atlas• EIS 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.^Í• A field with 1 or more breeding Short-eared Owls is to be considered SWH• The area of SWH is the contiguous ELC ecosite field areas• Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories• Evaluation 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 area• No large grassland areas >30 ha• None 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 Agriculture• Local bird clubs• Ontario Breeding Bird Atlas• 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 1 of the indicator species and at least 2 of the common species.^Í• A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat.^Í• The area of the SWH is the contiguous ELC ecosite field/thicket area• Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories• Evaluation 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 >10ha• None 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 Ontario 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	Studies confirmed the presence of Special Concern and rare wildlife species within the Study Area <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 I.</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	<p>Bat Migratory Stopover Area</p> <p>Rationale: Stopover areas for long distance migrant bats are important during fall migration.</p> <p>Eastern Red Bat Hoary Bat Silver-haired Bat</p>	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 <p><u>Information Sources</u></p> <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	<p>Conclusion: Not applicable to the study area</p>

Appendix E

SAR 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 the Study Area.	Breeding Bird Survey #1, #2, #3 Nest Searches	Individuals observed foraging within Mimico Creek valley. Nesting activity not observed within Study Area.	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, 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 within Study Area.	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	N/A
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 Herpetofauna 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 Herpetofauna 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	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 Herpetofauna 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	Low - Mimico Creek and wetland not expected to be impacted by the Project.
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
Mammals								
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	Moderate – moderate potential to occur within forest communities and candidate snag trees	Bat Snag Survey	Three Candidate Snags identified for Northern Myotis and Little Brown Myotis	Vegetation clearing and site preparation within the Site would result in the removal of two potential snags. A large majority of the snags, including the highest quality

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
				typically occurs in caves and abandoned mines,				snags, are located outside of the Site and are not expected to be impacted, therefore it is anticipated that bats would use these if habitat within the project footprint was removed.
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			
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			
Tri-colored 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	No Candidate Snags identified for Tri-colored Bat	

Appendix F

Breeding Bird Survey Results

Table 1: Breeding Bird Survey Results

Species			Relative Abundance by Distance			Breeding Evidence	Notes
Code	Common Name	Scientific Name	0-100m	>100m	Total		
BB1 - May 28, 2020							
Start Time: 6:18, End Time: 6:28							
Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	1		1	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	1		1	H	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	2		2	S	
BB2 - May 28, 2020							
Start Time: 6:35, End Time: 7:45							
Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	2		2	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	2		2	P	
MALL	Mallard	<i>Anas platyrhynchos</i>	1		1	S	
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
BB3 – May 28, 2020							
Start Time: 6:51, End Time: 7:01							
Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
AMRO	American Robin	<i>Turdus migratorius</i>	2		2	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	1		1	X	
BANS	Bank Swallow	<i>Riparia riparia</i>	1		1	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
MODO	Mourning Dove	<i>Zenaida macroura</i>	2		2	P	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	2		2	S	
BB4 – 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	X	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
BB5 – 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	
BB6 – May 28, 2020							
Start Time: 8:15, End Time: 8:25							
Temperature: 19C, Wind Speed/Direction: 0, Cloud Cover: 90%, Precipitation: 0 mm							
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	
BARN	Barn Swallow	<i>Hirundo rustica</i>	2		2	X	Flyby
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	1		1	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	4		4	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
MALL	Mallard	<i>Anas platyrhynchos</i>	1		1	S	
BB7 – 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	
BB8 – 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>			0	S	
BB9 - May 21, 2019 Start Time: 9:45, End Time: 9:55 Temperature 9C, Wind Speed/Direction: 3 N, Cloud Cover: 60%, Precipitation: 0 mm							
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	2		2	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	2		2	S	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
BB1 - June 17, 2020 Start Time: 5:52, End Time: 6:02 Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	2		2	P	
EUST	European Starling	<i>Sturnus vulgaris</i>	40		40	X	Flyby ~ 40
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	X	Flyby
NOMO	Northern Mockingbird	<i>Mimus polyglottos</i>	1		1	S	
SAVS	Savannah Sparrow	<i>Passerculus sandwichensis</i>	1		1	S	
BB2 - June 17, 2020 Start Time: 6:06, End Time: 6:16 Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
EUST	European Starling	<i>Sturnus vulgaris</i>	20			X	Flyby ~ 20
RBGU	Ring-billed Gull	<i>Larus delawarensis</i>	1			X	Flyby
BANS	Bank Swallow	<i>Riparia riparia</i>	1			X	Flyby
SAVS	Savannah Sparrow	<i>Passerculus sandwichensis</i>	1		1	S	

RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	3		3	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
BB3 - June 17, 2020 Start Time: 6:19, End Time: 6:29 Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
KILL	Killdeer	<i>Charadrius vociferus</i>	1		1	H	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	20		20	X	Fledglings
MODO	Mourning Dove	<i>Zenaida macroura</i>	2		2	P	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	S	
BB4 - 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
BB5 - 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	
BB6 - June 17, 2020 Start Time: 7:15, End Time: 7:25							

Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
BANS	Bank Swallow	<i>Riparia riparia</i>	1		1	X	Flyby
EUST	European Starling	<i>Sturnus vulgaris</i>	2		2	X	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
WAVI	Warbling Vireo	<i>Vireo gilvus</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	10		10	X	
BB7 - 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	
BB8 - 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
BB9 - June 17, 2020							
Start Time: 7:45, End Time: 7:55							
Temperature: 15C, Wind Speed/Direction: 0, Cloud Cover: 0%, Precipitation: 0 mm							
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	1		1	S	
GRCA	Gray Catbird	<i>Dumetella carolinensis</i>	1		1	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	X	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	1		1	X	
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	

BB1 - July 9, 2020							
Start Time: 5:55, End Time: 6:05							
Temperature: 23C, Wind Speed/Direction: 2 NW, Cloud Cover: 0%, Precipitation: 0 mm							
KILL	Killdeer	<i>Charadrius vociferus</i>	4		4	H	Flyby
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	12		12	X	Fly Over
RBGU	Ring-billed Gull	<i>Larus delawarensis</i>	1		1	X	Fly Over
BB2 - July 9, 2020							
Start Time: 6:08, End Time: 6:18							
Temperature: 23C, Wind Speed/Direction: 2 NW, Cloud Cover: 0%, Precipitation: 0 mm							
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
KILL	Killdeer	<i>Charadrius vociferus</i>	2		2	H	Different from last
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	3		3	X	Flyby
BB3 - July 9, 2020							
Start Time: 6:22, End Time: 6:32							
Temperature: 23C, Wind Speed/Direction: 2 NW, Cloud Cover: 0%, Precipitation: 0 mm							
AMRO	American Robin	<i>Turdus migratorius</i>	1		1	S	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	2		2	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	3		3	X	Flyby
MODO	Mourning Dove	<i>Zenaida macroura</i>	2		2	H	
BB4 - 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
BB5 - 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	
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	
BB6 - July 9, 2020 Start Time: 7:57, End Time: 8:07 Temperature: 25C, Wind Speed/Direction: 1 NW, Cloud Cover: 0%, Precipitation: 0 mm							
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	8		8	S	
EUST	European Starling	<i>Sturnus vulgaris</i>	4		4	S	
AMRO	American Robin	<i>Turdus migratorius</i>	2		2	H	
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	X	Flyby
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
WAVI	Warbling Vireo	<i>Vireo gilvus</i>	1		1	S	
BB7 - 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	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	2		2	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
BB8 - 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
BB9 - July 9, 2020 Start Time: 7:25, End Time: 7:35							

Temperature: 23C, Wind Speed/Direction: 2 NW, Cloud Cover: 0%, Precipitation: 0 mm							
SOSP	Song Sparrow	<i>Melospiza melodia</i>	1		1	S	
HOSP	House Sparrow	<i>Passer domesticus</i>	1		1	H	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		1	X	
YEWA	Yellow Warbler	<i>Setophaga petechia</i>	2		2	S	
AMGO	American Goldfinch	<i>Spinus tristis</i>	1		1	S	
AMRO	American Robin	<i>Turdus migratorius</i>	2		2	S	
NOCA	Northern Cardinal	<i>Cardinalis cardinalis</i>	1		1	S	
MODO	Mourning Dove	<i>Zenaida macroura</i>	2		2	X	
RODO	Rock Dove	<i>Columba livia</i>	2		2	X	
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	1		1	S	

Appendix G

Bat Snag Survey Results

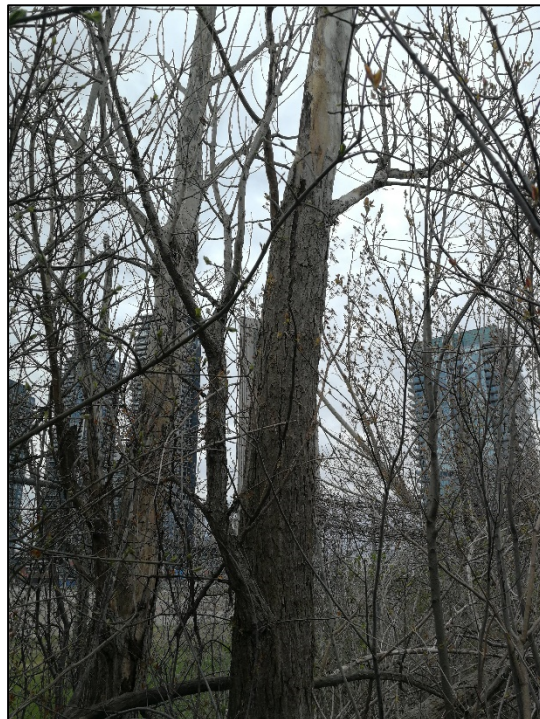
Table 1: Brown Myotis and Northern Myotis

Tree Number	Tree Species ID	Height Class	DBH (cm)	Decay Class	Tree Characteristics	Unit #	Unit Hectares	ELC Code	ELC Name	ELC Hectares
1	Eastern Cottonwood	2	34	3	Loose Bark Other Snag with 10m	Unit 6	4.80	CV1-1	Transportation	5.77
2	Eastern Cottonwood	2	36, 35	3	Loose Bark Other Snag with 10m	Unit 6	4.80	CV1-1	Transportation	5.77

Photos of Candidate Snags for Northern Myotis and Little Brown Myotis



Photograph B-3: Tree #1 looking east (Unit 6), April 29, 2020



Photograph B-4: Tree #2 looking southeast (Unit 6), April 29, 2020