

Appendix C

Natural Environment Assessment Report





KEN WHILLANS DRIVE EXTENSION NATURAL ENVIRONMENT ASSESSMENT

EXISTING CONDITIONS AND IMPACT ASSESSMENT

**Ken Whillans Drive Extension Municipal Class
Environmental Assessment Study**

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Acronyms

ANSI	Area of Natural and Scientific Interest
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DBFP	Downtown Brampton Flood Protection
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
ELC	Ecological Land Classification
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
LIO	Land Information Ontario
MBCA	Migratory Birds Convention Act
MCEA	Municipal Class Environmental Assessment
MECP	Ministry of Environment, Conservation and Parks
NDMNRF	Ministry of Northern Development, Mines, Natural Resources and Forestry (Formerly MNRF)
NEA	Natural Environment Assessment
NHA MaM	Natural Heritage Areas Make-a-Map
NHIC	Natural Heritage Information Centre
NHS	Natural Heritage System
OBBA	Ontario Breeding Bird Atlas
ORAA	Ontario Reptile and Amphibian Atlas
O. Reg.	Ontario Regulation
PPS	Provincial Policy Statement
ROW	Right-of-Way
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk in Ontario
SoCC	Species of Conservation Concern
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide
TMP	Transportation Master Plan
TRCA	Toronto Region Conservation Authority

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1. Introduction

1.1 Project Overview

Parsons was retained by the City of Brampton to complete a Schedule “B” Municipal Class Environmental Assessment (MCEA) to study an extension of Ken Whillans Drive south of Church Street East (“Project”). The proposed Ken Whillans Drive extension is recommended to be completed by 2021 in the City of Brampton’s (2015) Transportation Master Plan (TMP) to address the need for additional capacity and connectivity in the road network. In support of the MCEA, this Natural Environment Assessment (NEA) report has been prepared to document existing conditions, contribute to the evaluation of alternative solutions and design concepts, and identify environmental impacts and mitigation measures based on the preliminary design for the preferred solution.

1.2 Study Objectives

This NEA documents existing conditions within a 120 m radius of the Ken Whillans Drive extension EA study area. The study area and the 120 m adjacent lands are shown in **Appendix A, Figure 1**.

The scope of this report includes the following study objectives summarized below:

- Characterize existing conditions related to terrestrial and aquatic resources including identification of woodlots, vegetation communities, wetlands, watercourses, fish and wildlife habitat, and other designated areas such as Environmentally Sensitive / Significant Areas, and Areas of Natural Scientific Interest (ANSI’s);
- Species at risk (SAR) screening of terrestrial and aquatic resources;
- In-season field survey for flora, fauna, aquatic and terrestrial habitat delineation and classification;
- Assessment and documentation of flora, fauna, aquatic species and habitat, stream and valley corridors, natural heritage features and functions following the Ecological Land Classification (ELC) and significant wildlife habitat (SWH) technical guide (2000) and SWH Criteria Schedule for Ecoregion 7E (Ministry of Natural Resources and Forestry [MNRF], 2015a);
- Tree inventory and vegetation assessment to determine trees to be impacted and preserved; and
- Identify potential constraints and opportunities.

This NEA includes the results of the field investigations (e.g. botanical inventory, tree inventory, wetlands, ELC) which were completed on August 12, 2021 to capture the peak growing season and verify habitat potential for Species of Conservation Concern (SoCC) and SAR. The NEA also includes the impacts assessment of the preferred preliminary design concept as well as providing locations and descriptions of recommended environmental mitigation measures (e.g., plantings, monitoring etc.).

2. Regulatory Framework

2.1 Federal

2.1.1 FISHERIES ACT

The *Fisheries Act* sets out provisions to protect fish and fish habitat. In 2018, amendments were made to the act with the aim to provide for the sustainability, proper management and control of fisheries and to restore lost protections to ensure the conservation and protection of fish and fish habitat, including the prevention of pollution.

The *Fisheries Act* requires that projects avoid causing the death of fish and the harmful alteration, disruption or destruction of fish habitat unless authorized by the Minister of Fisheries and Oceans Canada (DFO) or a designated representative. As per amendments made to the *Fisheries Act* in 2018, proponent's have the responsibility to follow the measures to protect fish and fish habitat during the implementation of proposed projects in or near water to avoid potential impacts of the project resulting in the death of fish or the harmful alteration, disruption or destruction of fish habitat, as defined by The Act. Should the project activities follow the specific criteria outlined within the measures to protect fish and fish habitat, the project can proceed without DFO review. However, should the project activities not meet the DFO measures to protect fish and fish habitat criteria, the project may result in the death of fish or the harmful alteration, disruption or destruction of fish habitat and would require review by DFO under the *Fisheries Act*.

2.1.2 SPECIES AT RISK ACT, 2002

The federal *Species at Risk Act, 2002* (SARA) includes provisions for the protection of species that are classified as Extirpated, Endangered and Threatened in Schedule 1 of the Act. This includes protection to the species and their residence (e.g., nest, den), including critical habitat. Critical habitat is defined as those habitats necessary for the survival or recovery of a listed species, as identified in the recovery strategy or in an action plan for the species. While SARA applies to species on federal land, such as Canadian oceans and waterways, national parks, national wildlife areas, some migratory bird sanctuaries and First Nations reserve lands, it also applies to migratory birds protected under the MBCA and fish, anywhere they occur. Under section 73 of the Act, the competent minister may enter into an agreement or issue a permit authorizing an activity affecting a listed wildlife species, any part of its critical habitat, or the residences of its individuals and provided that the activity fall meets the following purposes:

1. The activity is scientific research relating to the conservation of the species and conducted by qualified persons
2. The activity benefits the species or is required to enhance its chance of survival in the wild; or
3. Affecting the species is incidental to the carrying out of the activity.

2.1.3 MIGRATORY BIRDS CONVENTION ACT, 1994

The *Migratory Birds Convention Act, 1994* (MBCA) and associated Regulations have the goal of ensuring the conservation of migratory bird populations by regulating potentially harmful human activities. Environment and Climate Change Canada administers the MBCA through the Migratory Birds Regulations and Migratory Birds Sanctuary Regulations. The MBCA protects migratory birds listed in the Act and applies to all lands in Canada regardless of ownership.

Section 12 of the MBCA prohibits capturing, killing, injuring, taking or disturbing of migratory birds, their eggs and nests listed in the Act. Aquatic and other habitats used by migratory birds is also protected in accordance with section 5 of the MBCA. This includes prohibitions on depositing (or allowing to be deposited) substances harmful to migratory birds, including in areas frequented by migratory birds, or that has the potential to enter waters where they occur.

Under section 5 of the MBCA, killing or harming listed migratory birds and/or disturbing or destroying their nests or eggs is prohibited without authorization. Compliance under the MBCA is typically mitigated through avoidance, such as adhering to timing windows for works that may impact species to occur outside of the active breeding window (e.g., April 1 – August 31), where feasible. Works can occur during the active period provided that the activities do not impact the

species. If activities are occurring in bird habitat during the breeding period, nest sweeps should be completed prior to any works to minimize risk of injury or incidental take. Permits are not issued for potential for incidental take except where there may be risk to human health and safety.

2.2 Provincial

2.2.1 ENDANGERED SPECIES ACT, 2007

The *Endangered Species Act, 2007* (ESA; Government of Ontario 2008) applies to species that are designated as Extirpated, Endangered or Threatened and listed on the Species at Risk in Ontario (SARO) List (Ontario Regulation [O.Reg.] 230/08). The ESA includes provisions to ensure protection to the species and their habitat. Species designated as Special Concern are not given species or habitat protection under the Act. General habitat protection applies to all Endangered and Threatened species with species-specific habitat protection also given to those species with regulated habitat, as identified in Ontario Regulation 242/08.

In order to balance protection and recovery goals with social and economic considerations, the ESA also gives the Minister of Environment, Conservation and Parks (MECP) the authority to issue permits or enter into agreements with proponents in order to authorize activities which would otherwise be prohibited by subsections 9(1) or 10(1) of The Act. The provisions under section 17 (2) of the ESA include the authorization of activities that would otherwise contravene the Act through the issuance of an Overall Benefit Permit as long as an overall benefit to the species in Ontario is provided. Ontario Regulation 242/08 also outlines various exemptions or agreements that may be employed under The Act, which are project or species-specific (Government of Ontario 2008). This may include registering the project activities and preparing a mitigation plan through a streamlined approval process.

2.2.2 PROVINCIAL POLICY STATEMENT, 2020

The Provincial Policy Statement, 2020 (PPS 2020) was issued under section 3 of the Planning Act; and came into effect May 1, 2020. The PPS 2020 provides the framework for provincial planning documents and regulating land use and development planning policies for specific geographic areas within Ontario.

There are a number of natural heritage provisions in section 2.1 of the PPS 2020. These provisions restrict development and site alteration in significant natural areas (e.g., woodlands, wetlands, significant wildlife habitat) unless it can be demonstrated that there will be no negative impacts on the features and ecological functions of those natural areas. Technical guidance for implementing the natural heritage policies of the PPS 2020 is found within the second edition of the Natural Heritage Reference Manual (MNRF, 2010). This manual recommends the approach and technical criteria for protecting natural heritage features and areas in Ontario.

Section 2.2 of the PPS 2020 requires planning to account for the quality and quantity of water at the watershed level and restricts development and site alteration “in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored”. This includes minimizing potential negative impacts on water resource systems and evaluating and preparing for impacts from a changing climate.

Section 6 of the PPS 2020 clarifies that development “means the creation of a new lot, change in land use, or the construction of buildings and structures requiring approval under the *Planning Act*, but does not include...activities that create or maintain *infrastructure* authorized under an environmental assessment process.”

2.2.3 GREENBELT ACT

The Greenbelt Plan (2017) derives its authority from the *Greenbelt Act, 2005* and sets out objectives and policies related to lands that are designated as Greenbelt Area (O. Reg. 59/05). The Greenbelt Area includes lands covered by the Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan, the Parkway Belt West Plan Area, lands designated as Urban River Valley and lands designated as Protected Countryside. The Plan contains policies related to each type of land designation and “informs decision-making to permanently protect the agricultural land base and the ecological and

hydrological features, areas and functions occurring on this landscape” (Section 1.4.1). The study area overlaps with the Etobicoke Creek watershed which is designated as an Urban River Valley within the Greenbelt. Only publicly owned lands (i.e. provincial, municipal, or local board owned lands, and lands owned by a conservation authority) are subject to the policies of the Urban River Valley designation. Section 6.2.3 states “All existing, expanded or new infrastructure which is subject to and approved under the Environmental Assessment Act, or which receives a similar approval, is permitted provided it supports the needs of adjacent settlement areas or serves the significant growth and economic development expected in southern Ontario and supports the goals and objectives of the Greenbelt Plan.”

2.2.4 CONSERVATION AUTHORITIES ACT

Section 28(1) of the *Conservation Authorities Act* (Government of Ontario 2018) empowers Conservation Authorities (Cas) with the ability to make regulations governing development that can have an impact to watercourses and water bodies, including wetlands. The study area is situated in the Etobicoke Creek watershed which is under the jurisdiction of Toronto Region Conservation Authority (TRCA) who administers O. Reg. 166/06: *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*. O. Reg. 166/06 includes provisions that prohibit or regulate development in river or stream valleys, wetlands, shorelines and hazardous lands. Works may be permitted if it can be demonstrated through appropriate technical studies and/or assessments that the activities will not have an adverse effect work on the regulated feature.

Most of the Project footprint and study area are within the Regulated Area (see **Appendix A, Figure 1**). Consultation with TRCA is recommended to discuss any permitting requirements for proposed works within the Regulated Area.

2.2.5 ENVIRONMENTAL ASSESSMENT ACT, 1990

The *Environmental Assessment Act* (1990) sets out a planning and decision-making process so that potential environmental effects are considered before a project begins in the province of Ontario. The Municipal Class Environmental Assessment Process is an approved process under the *Environmental Assessment Act* for municipal infrastructure projects.

2.3 Municipal

2.3.1 OFFICE CONSOLIDATION OF THE CITY OF BRAMPTON 2006 OFFICIAL PLAN, 2020

The City’s Consolidated Official Plan (2020) establishes a comprehensive framework to guide the City’s future growth and development. The objectives and policies of the Official Plan provide direction for the physical development and land-use decisions of the City, while having regard for relevant social, cultural, economic, and environmental matters.

The natural heritage designations, policies and permitted uses are provided in section 4.6.6 and identified on Schedule “D” of the Official Plan. Designated features that make up the Natural Heritage System (NHS) within the City of Brampton are:

- Valleylands and Watercourse Corridors¹
- Woodlands
- Wetlands (Provincially Significant Wetlands and Other Wetlands)
- Environmentally Sensitive/ Significant Areas
- Areas of Natural and Scientific Interest (ANSI)
- Fish and Wildlife Habitat
- Provincial Greenbelt Plan Natural system

¹ Valleylands and Watercourse Corridors is also identified as Valleylands/Watercourses Corridors on Schedule D. The term Valleylands and Watercourse Corridors will be used in this NEA.

Development may be permitted within the NHS in accordance with the land use designations shown on Schedule A – General Land Use Designations and subject to the general policies in Section 4.6.6 and specific policies in Sections 4.6.7 to 4.6.13. The study area overlaps with several features within the City of Brampton’s NHS, these features are designated as a Valleylands and Watercourse Corridors. Specific policies for the Valleylands and Watercourse Corridors designation are provided in Section 4.2.4.

This NEA is intended to meet the requirements of the Policies in the City’s Consolidated Official Plan (2020).

3. Study Approach

The Project included a background review and field investigations to verify presence/absence of natural heritage features within the study area. The following sections include a summary of information sources reviewed and field studies completed.

3.1 Background Review

The following sources were reviewed for information related to natural heritage features within the study area.

3.1.1 MINISTRY OF NORTHERN DEVELOPMENT, MINES, NATURAL RESOURCES AND FORESTRY

The following information sources from the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF, formerly MNRF) were reviewed:

- **Ministry of Northern Development, Mines, Natural Resources and Forestry Aurora District** – Information on natural heritage features within the study area was requested from the NDMNRF Aurora District by way of email, dated April 20, 2021. The responses from NDMNRF, as received on April 23, 2021 and April 26, 2021, are provided in **Appendix B**.
- **Land Information Ontario (LIO) Mapping** – LIO data is maintained by the NDMNRF and provides key provincial geospatial data about Ontario. Shapefiles obtained from the LIO open datasets were obtained and used to map the natural features within the study area (**Appendix A, Figure 1**).
- **Natural Heritage Areas Make a Map (NHA MaM)** – The NHA MaM is a web application that provides information on provincial parks, conservation reserves, and natural features (i.e., ANSIs, wetlands, woodlands, natural heritage systems related to provincial policy plan areas (e.g., Niagara Escarpment, Oak Ridges Moraine and Greenbelt Plans). The NHA MaM also provides Natural Heritage Information Centre (NHIC) data, which includes information on plant communities, wildlife concentration areas, natural areas, SoCC (i.e., rare species), and SAR. The NHIC data is organized into 1 km² map squares. The map squares that overlap the Project include 17NJ9937, 17NJ9938, 17PJ0037 and 17PJ0038. A list of species from the background review is provided in **Appendix C**.

3.1.2 MINISTRY OF ENVIRONMENT CONSERVATION AND PARKS

Project notification and a data request for information on SAR was sent to MECP on April 20, 2021. The response from MECP, as received on April 30, 2021, is provided in **Appendix B**. In addition to the SAR identified in the background review, the MECP also identified the occurrence of Butternut (*Juglans cinerea*) in and around the area and is also included in **Appendix C**.

3.1.3 CITY OF BRAMPTON OFFICIAL PLAN

The City of Brampton Consolidated Official Plan (2020) policies and schedules were reviewed for natural heritage features in the study area and associated applicable policies. Designated features identified in Schedule “D”: Natural Heritage Features and Areas are discussed in **Section 4.2**.

3.1.4 PUBLICLY AVAILABLE DATABASES

The following information sources from publicly available databases were reviewed:

- **Ontario Breeding Bird Atlas (OBBA)** – The OBBA (Bird Studies Canada *et al.*, 2006) was reviewed to determine which SAR have the potential to occur within the study area. The OBBA provides a list of bird species that have been observed within a 10 x 10 km² area during surveys completed between 1981 and 1985 and 2001 and 2005. SAR that were documented between 2001 and 2005 were considered as part of this background review. The OBBA map squares that overlap the Project are 17NJ93 and 17PJ03. A list of species from the background review is provided in **Appendix C**.

- **Ontario Reptile and Amphibian Atlas (ORAA)** – The ORAA (Ontario Nature, 2019) and interactive range maps were reviewed. The ORAA provides known ranges of reptiles and amphibian species in Ontario based on historic and current species occurrences. The information is displayed in 10 x 10 km² map squares. The ORAA map squares that overlap the Project are 17NJ93 and 17PJ03. A list of species from the background review is provided in **Appendix C**.
- **Ontario Butterfly Atlas (OBA)** – The OBA (Toronto Entomologists’ Association, 2019) was reviewed. The OBA provides known ranges of butterfly species in Ontario based on historic and current species occurrences. The information is displayed in 10 x 10 km² map squares. The OBA map squares that overlap the Project are 17NJ93 and 17PJ03. A list of species from the background review is provided in **Appendix C**.
- **iNaturalist** – The NHIC and Herps of Ontario projects on iNaturalist were reviewed for records of herpetofauna and SoCC and SAR flora and fauna within the study area (iNaturalist, 2021 and Ontario Nature, 2021). iNaturalist is a citizen scientist web application that provides up to date records of species. A list of species documented on iNaturalist within the study area is provided in **Appendix C**.
- **Atlas of the Mammals of Ontario** – The Atlas of the Mammals of Ontario (Dobbyn, 1994) was reviewed to determine which SAR have the potential to occur within the study area. A list of SAR documented from the atlas is provided in **Appendix C**.
- **Fisheries and Oceans Canada (DFO) Aquatic SAR Mapping** – Aquatic SAR mapping is made available by DFO through their online Aquatic SAR mapping tool. A review of the 2021 aquatic DFO mapping was completed to determine if SAR are present in the Etobicoke Creek within the study area.

3.1.5 DOWNTOWN BRAMPTON FLOOD PROTECTION ENVIRONMENTAL ASSESSMENT

The AECOM (2020) Downtown Brampton Flood Protection (DBFP) EA Environmental Study Report was reviewed for terrestrial resources (e.g. vegetation communities) and aquatic species and habitat present within and adjacent to the study area as well as surface water quality information for Etobicoke Creek.

3.2 Species at Risk Assessment

This report considers SAR as species classified as Extirpated, Endangered, or Threatened and protected under the *Endangered Species Act, 2007* (ESA) and/or *Species at Risk Act, 2002* (SARA). This includes:

- Provincially protected species on the Species at Risk in Ontario (SARO) List under O. Reg. 230/08.
- Federally listed migratory birds and fish on Schedule 1 of SARA; these species are protected anywhere they occur, including non-federal lands. All other federally listed species are generally² (except through an Order) only protected under SARA if they occur on federal lands.

In this report, rare species that are not considered SAR are identified as SoCC. Habitat for SoCC is discussed under SWH (see definition in **Section 3.3**) which is consistent with the definitions and protocols under MNR’s (2000) *Significant Wildlife Habitat Technical Guide* (SWHTG).

A screening of SAR records was undertaken to identify which of the reported species have the potential to occur within the study area. The screening identified potential species and spatial distributions collected through agency consultation and literature review. Available information regarding preferred habitat was compared to existing habitat identified within the study area during field assessments to determine if suitable habitat was present. An assessment of habitat potential for terrestrial and aquatic SAR within and adjacent to the study area is discussed further in **Section 4.8**.

² SARA can make a ministerial order to protect species and their critical habitat on non-federal lands that are not already subject to the provisions of the Act.

3.3 Significant Wildlife Habitat Assessment

The MNRF provides specific guidance on identifying and assessing wildlife habitat in the *SWH Criteria Schedules for Ecoregion 7E* (MNRF, 2015a). Other guidance documents used as part of the SWH assessment included the SWHTG (MNRF, 2000) and the MNRF (2010) *Natural Heritage Reference Manual*.

The MNRF recognizes five main categories of wildlife habitat, each with several wildlife habitat types. The general definitions of these habitat types are provided below:

- **Seasonal Concentration Areas of Animals** – defined as “areas where animals occur in relatively high densities for the species at specific periods in their life cycles and/or in particular seasons” and areas that are “localized and relatively small in relation to the area of habitat used at other times of the year” (MNRF, 2010).
- **Rare Vegetation Communities** – defined as “areas that contain a provincially rare vegetation community and areas that contain a vegetation community that is rare within the planning area” (MNRF, 2010).
- **Specialized Habitat for Wildlife** – defined as “areas that support wildlife species that have highly specific habitat requirements, areas with high species and community diversity, and areas that provide habitat that greatly enhances species’ survival” (MNRF, 2010).
- **Habitat for SoCC** – defined as “habitats of species that are designated at the national level as endangered or threatened by COSEWIC, which are not protected in regulation under Ontario’s ESA; habitats of species listed as special concern under the ESA on the SARO List (formerly referred to as “Vulnerable” in the SWHTG); and habitats of species that are rare or substantially declining or have a high percentage of their global population in Ontario” (MNRF, 2010). More specifically, SoCC include:
 - **globally rare species** – These species are assessed by NatureServe and assigned a global conservation status rank (G-rank) of G1 to G3.
 - **nationally rare species** – These species are assessed by COSEWIC as Extirpated, Endangered, Threatened, or Special Concern but not listed in SARA; species not protected under SARA including those designated as Special Concern on Schedule 1 (e.g., Monarch [*Danaus plexippus*]) or any of the listed species in Schedule 2 and Schedule 3; species on non-federal land listed on Schedule 1 of SARA, other than migratory birds and fish.
 - **provincially rare species** – These species are designated and assessed under two categories: species listed as Special Concern on the SARO list, and species that are assigned a provincial sub-national conservation status rank of S1 to S3. There are species that can be found in both categories.
 - **regionally or locally rare species** – These species are not assigned a formal designation, however, have been recognized as declining within a planning jurisdiction by government and/or non-government authorities.
 - **conservation priority species** – These include priority species that are recognized in government and/or non-government conservation plans and assigned a conservation objective.
- **Animal Movement Corridors** – defined as “elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another” (MNRF, 2000).

An assessment of candidate SWH was completed for the study area following the protocols established by MNRF. The SWH assessment was based on findings from the background review and field investigations and is discussed further in **Section 4.6**. As discussed in **Section 3.2**, SAR are excluded from the SWH process and are discussed independently in **Section 4.8**.

3.4 Field Investigations

Field investigations were completed to verify natural heritage features identified during the desktop study, including candidate SWH (including SoCC) and SAR habitat potential. Parsons completed field investigations on August 12, 2021, which included aquatic and terrestrial habitat characterization, tree inventory and assessment, botanical inventory, vegetation community categorization (ELC), and verifying any other natural heritage features identified from the background review. A photographic log is provided in **Appendix H**.

3.4.1 VEGETATION AND VEGETATION COMMUNITIES

The following sections include the methodology followed for completing the tree assessment, botanical inventory, invasive species mapping, and ELC (i.e., vegetation community characterization).

Tree Inventory and Assessment

The assessment of Alternative Solutions in the Municipal Class EA study identified that an extension of Ken Whillans Drive to the west to Nelson Street is the preferred alternative. A tree inventory was completed in an area that covers off a variety of potential road alignments and immediately adjacent lands (up to 6 m), referred to as the 'Tree Inventory Area' in this report (**Appendix A, Figure 3**).

Tree species, diameter at breast height (DBH), height, health, dripline, and other features were recorded. Trees to be impacted or preserved will be determined once the preferred preliminary design is chosen.

Botanical Inventory

A botanical inventory was completed within the study area, specifically in the Tree Inventory Area (**Appendix A, Figure 3**) and adjacent lands. The conservation status of plant species recorded in the study area was assessed to determine the presence of SoCC and SAR. A floristic quality assessment was also completed to determine the level of disturbance and overall quality of the vegetation / vegetation communities within the study area.

Ecological Land Classification

Vegetation communities were generally characterized following the first approximation of the *ELC System for Southern Ontario* (Lee *et al.*, 1998). The second approximation of ELC (Lee, 2008) was also used when there was no code available for a specific community type in the first approximation.

Prior to undertaking field surveys, vegetation communities were mapped through aerial photograph interpretation, with polygons delineated using ArcGIS at a scale of 1:5,000 and using NAD83 Universal Transverse Mercator coordinate system. Although the ELC protocol indicates a minimum size of 0.5 ha for mapping polygons, all communities regardless of size were identified to ensure a complete understanding of the environmental characteristics of the study area were captured. Vegetation communities were also mapped based on ELC provided in the DBFP EA (AECOM 2020) where the study areas overlapped, primarily around Etobicoke Creek.

The field inventories included verifying and refining the boundaries mapped during the desktop exercise. Additional data was also collected on disturbances and wildlife species present within each of the polygons that could be field verified. The vegetation communities were assessed to determine if candidate SWH is present (including rare vegetation community types).

3.4.2 WILDLIFE

Incidental and General Wildlife Habitat Observations

Field investigations included documenting incidental observations of wildlife and wildlife habitat features. This information was collected for use as part of the SWH and SAR habitat assessment. Wildlife habitat features that could be documented include, but were not limited to, rock piles, stick nests or other nests of wildlife, burrows, evidence of wildlife such as scat, tracks, predated nests, among others.

3.4.3 FISH AND FISH HABITAT

Aquatic Habitat Assessment

No watercourses were identified within 30 meters of the project area during background review. Etobicoke Creek flows adjacent to the project area approximately 65 m to the northwest. A general aquatic habitat assessment was completed by Parsons biologists on August 12, 2021 for Etobicoke Creek to confirm that existing conditions presented in the DBFP EA (AECOM, 2020) were still present. As the proposed Project works do not include in-water works and will occur 30 metres away from the watercourse, a detailed aquatic habitat assessment to identify and map fish habitat potential was not required.

Photographs were taken to document instream habitat and bank characteristics within Etobicoke Creek adjacent to the study area and are provided in **Appendix H**.

Fish Community

Sufficient fish community data was available during the background review for the Etobicoke Creek. Additionally, as no in-water works are proposed and the proposed Project works will occur further than 30 metres from the watercourse, fish community surveys were deemed not necessary during field investigations.

4. Existing Conditions

The study area is located in the City of Brampton and spans approximately 700 m through a developed urban area with maintained greenspace. The study area and its surrounding land use includes parkland associated with the Rosalea Park and the Etobicoke Creek recreational trail, residential neighbourhoods, commercial building, institutional buildings, and recreational use. Naturalized areas within the study area include riparian habitat surrounding the Etobicoke Creek, cultural meadows and woodlands that have potential to provide wildlife habitat for urban-tolerant species.

4.1 Physiography and Soil

The study area falls within the Peel Plain physiographic region (Chapman and Putnam, 1984), a relatively flat area situated in the central portion of the South Slope. This region consists of a thin layer of silt and clay lacustrine material deposited over till. Based on the soil composition, infiltration is low and groundwater recharge is limited as precipitation is lost through surface runoff or evaporation.

4.2 Designated Areas and Features

Designated Areas are defined by resource agencies, municipalities, the provincial and federal government and/or the public, through legislation, policies, or approved management plans, to have special or unique value. Such areas may have a variety of ecological, recreational, and/or aesthetic features and functions that are highly valued. This NEA considers designated areas to include NHSs, provincially significant ANSIs, national, provincial, municipal and/or conservation authority parks, conservation regulated areas and municipal environmental policy areas. The following sections include all of the designated areas identified within the study area.

4.2.1 URBAN RIVER VALLEY

The Greenbelt Area Designation dataset from MNRF as well as the City of Brampton Official Plan (2020) shows that a portion of the study area associated with Etobicoke Creek is within the Greenbelt System and is designated as Urban River Valley (**Appendix A, Figure 1**). Section 6 of the Greenbelt Plan (2017) outlines the policies related to the Urban River Valley designation. Policy 6.2.3 states that *“All existing, expanded or new infrastructure which is subject to and approved under the Environmental Assessment Act, or which receives a similar approval, is permitted provided it supports the needs of adjacent settlement areas or serves the significant growth and economic development expected in southern Ontario and supports the goals and objectives of the Greenbelt Plan.”*

4.2.2 TRCA REGULATED AREA

The TRCA Regulated Area extends within study area (**Appendix A, Figure 1**) which overlap areas associated with the Etobicoke Creek floodplain. Section 3(1) of O. Reg. 166/06 states that *“The Authority may grant permission for development in or on the”* TRCA Regulated Area *“if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development.”*

4.2.3 TRCA TARGET NATURAL HERITAGE SYSTEM

The TRCA target NHS occurs within the northern and eastern portions of the study area (**Appendix A, Figure 1**).

4.2.4 VALLEYLANDS AND WATERCOURSE CORRIDOR

Schedule “D” Natural Heritage Features and Areas of the City’s (2020) Official Plan shows the northeastern portion of the study area within a Valleylands and Watercourse Corridor associated with Etobicoke Creek (**Appendix A, Figure 1**). Policy 4.6.7.1 states that *“development and site alteration is generally not permitted within a valleyland or watercourse corridor unless it has been demonstrated that there will be no negative impact on the significant natural features and their functions in accordance with the required studies”*.

4.2.5 MUNICIPAL PARKS

Rosalea Park and the parklands associated with the Etobicoke Creek recreational trail occur within the study area. Section 4.7 of the City’s (2020) Official Plan outlines objectives related to the City’s recreational open space including public parkland. The preferred solution should “manage, restore and where possible, enhance recreational open space to support and link elements of the natural heritage system” (Section 4.7.i).

4.3 Vegetation and Vegetation Communities

4.3.1 TREE INVENTORY AND ASSESSMENT

A tree inventory and health assessment of all trees within the Tree Inventory Area was completed on August 12, 2021. A total of 150 trees including seven (7) groupings were documented within the Tree Inventory Area. A summary of the species and number of trees within each diameter range is provided in **Table 1** below. The full tree inventory and assessment is provided in **Appendix D** and are shown in **Appendix A, Figure 3**. Several invasive species identified by the Ontario Invasive Plant Council were documented throughout the Tree Inventory Area including Common Buckthorn (*Rhamnus cathartica*), Black Locust (*Robinia pseudoacacia*) and Norway Maple (*Acer plantinoides*) however are not listed under O. Reg. 354/16 under the *Invasive Species Act 2015*. Other non-native species including Manitoba Maple (*Acer negundo*) and Austrian Pine (*Pinus nigra*) were also documented within the Tree Inventory Area.

TABLE 1 – SUMMARY OF TREE INVENTORY AND ASSESSMENT

Species	Number of Trees in Trunk Diameter Ranges (DBH in cm)								TOTAL
	0-10	11-19	20-40	41-50	51-60	61-70	71-80	81-90	
American Elm	1								1
Austrian Pine			8	1					9
Black Locust						1			1
Common Buckthorn	~50								50
Hackberry	1	4							5
Honey-locust	4	2	1						7
Manitoba Maple	20	3	4						27
Maple species			1						1
Norway Maple	3		10	1	6	1			21
Oak species	1	1							2
Red Maple	11					1			12
Silver Maple					1			1	2
Walnut species	1								1
White Oak	1								1
White Spruce			6	4					10
TOTAL	93	10	30	6	7	3	0	1	150

4.3.2 BOTANICAL INVENTORY

A botanical inventory was completed for the Project within the Tree Inventory Area and is provided in **Appendix E**. A total of 42 species were documented, representing 20 families. Native species were dominant, representing 57% of the vegetation documented (see **Appendix E**). A floristic quality assessment was completed to assess the overall quality of communities based on species composition and their assigned coefficient of conservatism (CC). Each species is assigned a CC value based on their tolerance to disturbance and fidelity to a specific habitat type. The mean CC value was determined to be 3.3 which is indicative of species that are not habitat-specific and are typically associated with

disturbed sites; there were 13 species that are within this group, CC values from four (4) to six (6) are species that may be associated with a specific community and can tolerate moderate disturbances, of which, eight (8) species were documented within this group. There were also three (3) species with a CC value between seven (7) and eight (8) which are also associated with a specific community but at a later successional stage and have a minor tolerance to disturbance. There were no SAR plants confirmed within the study area and adjacent lands during the 2021 field investigations. Honey-locust (*Gleditsia triacanthos*) was observed within the study area and is considered a SoCC due to its provincially rare status, however, all Honey-locusts documented in the area were planted.

4.3.3 ECOLOGICAL LAND CLASSIFICATION

Vegetation communities that were previously documented within the study area in the DBFP EA Environment Study Report (AECOM 2020) and communities not previously identified by AECOM were assessed through interpretation of satellite imagery and were verified during field investigations. ELC for all vegetation communities within the study area and adjacent lands are summarized in **Table 2** below and shown on **Appendix A, Figure 2**.

TABLE 2 - VEGETATION COMMUNITIES

ELC Code	Community Type	Description/Comments
CONSTRUCTED COMMUNITIES		
CGL	Constructed Greenlands	Constructed greenlands are associated with human development and landscaping. This community includes lands such as manicured lawns and planted boulevards.
CGL_2	Constructed Greenlands – Parkland	Constructed greenlands are associated with human development and landscaping. This community includes parklands.
CVC	Commercial and Institutional	This community includes commercial and institutional properties and buildings.
CVI_1	Trail, Road	This community includes roads and trails.
CVR	Residential	This community includes residential developments.
TREED HEDGEROW COMMUNITIES		
CUH	Cultural Hedgerow	These communities are a cultural deciduous hedgerow based on a review of satellite imagery.
WOODLAND COMMUNITIES		
CUP1-3	Black Walnut Plantation	This community is a Black Walnut (<i>Juglans nigra</i>) plantation mapped by AECOM (2020) for the DBFP EA and is associated with the narrow woodland between Scott St and Etobicoke Creek.
CUW1	Cultural Woodland	This community was mapped by AECOM (2020) for the DBFP EA and is associated with the riparian habitat along Etobicoke Creek and is described as an exotic successional woodland.
FOD	Deciduous Forest	This community is a deciduous woodland based on a review of satellite imagery.
FOD7-1	Fresh-Moist White Elm Lowland Deciduous Forest	This community was mapped by AECOM (2020) for the DBFP EA as a FOD7 and is associated with the riparian habitat along Etobicoke Creek. 2021 Parsons field investigations observed that this community was dominated by American Elm (<i>Ulmus americana</i>) with Black Walnut, Crack Willow (<i>Salix x fragilis</i>), Weeping Willow (<i>Salix x sepulcralis</i>), Manitoba Maple and Norway Maple present.
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	These communities are deciduous woodlands mapped by AECOM (2020) for the DBFP EA, verified by Parsons in 2021, and are associated with the riparian habitat along Etobicoke Creek. These communities are dominated by Crack Willow and Weeping Willow with Black Walnut.
FOD7-4	Fresh-Moist Black Walnut Deciduous Forest	These communities are deciduous woodlands mapped by AECOM (2020) for the DBFP EA, verified by Parsons in 2021, and are associated with the wooded area west of Ken Whillans Drive and north of Church Street East. These communities are dominated by Black Walnut with American Elm, Red Oak (<i>Quercus rubra</i>) and Manitoba Maple.
FODM7-7	Fresh-Moist Manitoba Maple Lowland Deciduous Forest	This community was mapped by AECOM (2020) for the DBFP EA as a FOD7 and is associated with the small, wooded area west of Ken Whillans Drive and north of Church Street East. 2021 Parsons field investigations observed that this community was dominated by Manitoba Maple with Common Buckthorn.
OPEN AQUATIC COMMUNITIES		
OA01	Open Aquatic	This community is mapped by AECOM (2020) for the DBFP EA and is associated with Etobicoke Creek.

4.4 Significant Woodlands

Schedule “D” Natural Heritage Features and Areas of the City’s Consolidated Official Plan (2020) includes woodlands within the City’s NHS (see **Section 2.3.1**). These woodlands would be evaluated through the development review process. Policy 4.6.8 of the Official Plan (2020) states that “*prior to development, significant woodlands will be identified based on the direction contained in the Province’s Natural Heritage Manual, or municipal approaches that achieve or exceed the same objective. For woodlands in the Greenbelt, significant woodlands will be identified in accordance with the Greenbelt Technical manuals. Development and site alteration shall not be permitted in significant woodlands unless it can be demonstrated that there will be no negative impacts on these features or their ecological functions.*” As shown in **Appendix A, Figure 1**, none of the woodlands identified within Schedule “D” are located within the study area. There are other woodlands present within the study area not shown on Schedule “D”. Two of these woodlands are located within the Project footprint to the northwest and the southeast.

4.5 Significant Wetlands

The desktop and field study did not identify any provincially significant wetlands or other wetlands (i.e., evaluated or unevaluated) within the study area or adjacent lands. Email correspondence from Steve Varga, NDMNRF (see **Appendix B**), also confirmed that there are no mapped wetlands in the study area, although there is potential within the bottomlands along the Etobicoke Creek valley. The ELC from the DBPF EA Environmental Study Report included Etobicoke Creek and did not identify the presence of wetlands within the study area of this Project.

4.6 Significant Wildlife Habitat

All wildlife and vegetation communities documented during the desktop study and field investigations were assessed as part of the SWH screening. An assessment of candidate and confirmed SWH was completed following the *SWH Criteria Schedule for Ecoregion 7E* (MNRF, 2015a) and are summarized in **Table 3**, with the full evaluation, including SoCC screening, provided in **Appendix F**.

No candidate SWH types associated with specialized habitat for wildlife or rare vegetation communities were identified within the study area and adjacent lands. Seasonal concentration areas of animals (Bat maternity colonies), habitat for SoCC and animal movement corridors may be present and are primarily associated with the adjacent lands, specifically Etobicoke Creek. The woodlands that extend into the study area may provide habitat for bat maternity colonies and potentially SoCC. Reptile hibernaculum for snakes has the potential to occur throughout the study area and adjacent lands and is difficult to rule out as hibernaculum can be anywhere that provide subterranean access below the frost line. Due to the challenges in confirming this habitat type, mitigation measures will be provided should hibernaculum be discovered during construction.

TABLE 3 – SUMMARY OF CANDIDATE AND CONFIRMED SWH WITHIN THE STUDY AREA AND ADJACENT LANDS

SEASONAL CONCENTRATION AREAS OF ANIMALS					
N	Waterfowl Stopover and Staging Areas (Terrestrial)	N	Waterfowl Stopover and Staging Areas (Aquatic)	N	Shorebird Migratory Stopover Area
N	Bat Hibernacula	C	Bat Maternity Colonies	N	Turtle Wintering Areas
N	Colonially - Nesting Bird Breeding Habitat (Bank/Cliff)	N	Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	N	Colonially - Nesting Bird Breeding Habitat (Ground)
N	Landbird Migratory Stopover Areas	N	Deer Winter Congregation Areas		C Reptile Hibernaculum
					N Migratory Butterfly Stopover Areas
RARE VEGETATION COMMUNITY					
N	Cliffs and Talus Slopes	N	Sand Barren	N	Alvar
N	Savannah	N	Tallgrass Prairie	N	Other
					N Old Growth Forest

SPECIALIZED HABITAT FOR WILDLIFE							
N	Waterfowl Nesting Area	N	Bald Eagle and Osprey Nesting/Foraging/Perching	N	Woodland Raptor Nesting Habitat	N	Turtle Nesting Areas
N	Seeps and Springs	N	Amphibian Breeding Habitat (Woodland)	N	Amphibian Breeding Habitat (Wetland)	N	Woodland Area-sensitive Bird Breeding Habitat
HABITAT FOR SPECIES OF CONSERVATION CONCERN							
N	Marsh Bird Breeding Habitat	N	Open Country Bird Breeding Habitat	N	Shrub/Early Successional Bird Breeding Habitat	N	Terrestrial Crayfish
C	Special Concern and Rare Species (see Appendix F)						
ANIMAL MOVEMENT CORRIDORS							
C	Amphibian Movement Corridors						

Y = confirmed; C = candidate; N = no or unlikely

4.7 Fisheries and Aquatic Habitat

4.7.1 AQUATIC HABITAT

The only drainage feature identified in proximity to the study area which supports fish and provides fish habitat is Etobicoke Creek, which is located approximately 65 m northwest of the study area.

The study area and adjacent lands are located within the West Branch of the Etobicoke Creek watershed basin. The DBFP EA (AECOM, 2020), indicated that adjacent to the study area, Etobicoke Creek flows from a natural stream bed surrounded by forested communities to a concrete by-pass channel starting underneath the Church Street East bridge and terminating south of the GO rail outside of the study area, where it returns to a natural channel. Etobicoke Creek flows in a general southeast direction and is surrounded by multiple stressors from agricultural land use in the upstream and urbanized areas throughout and further downstream until it discharges into Lake Ontario. Surface water quality of the Etobicoke Creek is typical of urbanized areas due to the various factors contributing to the surface water, including fertilizer use by agriculture, wastewater from industrial and sewage treatment plants, urban run-off and road salting in the winter. Surface water quality data from the DBFP EA (AECOM, 2020) indicate high concentrations of chloride and phosphorus throughout all monitoring stations and occasional exceedances of metals, iron and cadmium. The DBFP EA (AECOM, 2020) also reported the presence of moss, filamentous and non-filamentous algae at both sampling sites (located upstream and downstream of the Ken Whillans Drive extension study area) that is likely attributed to larger sediment size and poorer water quality.

4.7.2 FISH COMMUNITY INVENTORY

As no in-water work is proposed and Etobicoke Creek more than 30 meters from the project area, no fish community sampling was undertaken as part of this study. Information obtained from NDMNRF, MECP, LIO database and the DBFP EA (AECOM, 2020) indicated that Etobicoke Creek supports a diverse warmwater fish community and also supports coolwater species.

NDMNRF provided the following list of species potentially present in the Etobicoke Creek within the study area: Blacknose Dace (*Rhinichthys atratulus*), Blacknose Shiner (*Notropis heterolepis*), Bluntnose Minnow (*Pimephales notatus*), Brook Stickleback (*Culaea inconstans*), Common Shiner (*Luxilus cornutus*), Creek Chub (*Semotilus atromaculatus*), Emerald Shiner (*Notropis atherinoides*), Fantail Darter (*Etheostoma flabellare*), Fathead Minnow (*Pimephales promelas*), Johnny Darter x Tessellated Darter (*Etheostoma nigrum* x *Etheostoma olmstedi*), Longnose Dace (*Rhinichthys cataractae*), Northern Hog Sucker (*Hypentelium nigricans*), Rainbow Darter (*Etheostoma caeruleum*), Rock Bass (*Ambloplites rupestris*), Spottail Shiner (*Notropis hudsonius*), and White Sucker (*Catostomus commersonii*).

The DBFP EA (AECOM, 2020) identified the following species within Etobicoke Creek during their sampling: Blacknose Dace, Common Shiner, Creek Chub, Johnny Darter, Rainbow Darter, Longnose Dace, Rock Bass, Spottail Shiner, White Sucker, Green Sunfish (*Lepomis cyanellus*), Bluntnose Minnow, Fathead Minnow, and Central Stoneroller (*Camptostoma anomalum*).

One aquatic SAR, Redside Dace (*Clinostomus elongatus*), was identified during the background review and is discussed further in Section 4.8.2.

4.8 Species at Risk

4.8.1 TERRESTRIAL SPECIES AT RISK

A SAR screening was completed to determine habitat potential for SAR to occur within the study area and/or adjacent lands based on findings from the background review and field investigations. The results of the screening are provided in Appendix G and summarized in Table 4.

Based on the results of the screening, 10 SAR have the potential to occur within the study area and/or the adjacent lands. Of these species, five have potential to be impacted, albeit low, including Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Tricolored Bat (*Perimyotis subflavus*) and Red-headed Woodpecker (*Melanerpes erythrocephalus*). The trees within Rosalea Park, as well as in woodlands in the adjacent lands may provide habitat for these species.

TABLE 4 - SUMMARY OF POTENTIAL TERRESTRIAL SPECIES AT RISK WITHIN THE STUDY AREA AND ADJACENT LANDS

	Species	SARA	ESA	Legal Protection	Assessment
MAMMALS	Eastern Small-footed Myotis (<i>Myotis leibii</i>)		END	ESA	Potential - All woodlands within the study area and adjacent lands have the potential to provide habitat for bats. Several potential snag trees were observed within the woodland communities along Etobicoke Creek. Maple and Oak trees were also observed within several woodlands as well as in the tree inventory area. However, no leaf clusters were observed within the Maples and Oaks documented within the Tree Inventory Area
	Little Brown Myotis (<i>Myotis lucifugus</i>)	END, Schedule 1	END	ESA	
	Northern Myotis (<i>Myotis septentrionalis</i>)	END, Schedule 1	END	ESA	
	Tricolored Bat (<i>Perimyotis subflavus</i>)	END, Schedule 1	END	ESA	
	Barn Swallow (<i>Hirundo rustica</i>)	THR, Schedule 1	THR	ESA, SARA, MBCA	Potential - All bridge, concrete culvert structures and buildings with suitable overhangs may provide suitable nesting habitat. There are buildings that provide nesting habitat potential within the study area and adjacent lands, however no nests were observed during 2021 field investigations. Foraging habitat may also be present within the study area although would not trigger any permitting requirements.
BIRDS	Chimney Swift (<i>Chaetura pelagica</i>)	THR, Schedule 1	THR	ESA, SARA, MBCA	Potential - All chimneys and bridges may provide habitat for this species. There are chimneys and bridges present within the study area and adjacent lands that provide nesting habitat potential. Foraging habitat may also be present within the study area although would not trigger any permitting requirements.
	Common Nighthawk (<i>Chordeiles minor</i>)	THR, Schedule 1	SC	SARA, MBCA	Potential - Flat top rooftops with pea gravels may provide habitat for this species. There are flat rooftops within the study area and adjacent lands.
	Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	THR, Schedule 1	END	ESA, SARA, MBCA	Potential - There are woodlands and parklands within the study area and adjacent lands that may provide suitable habitat for this species. This species was not observed during 2021 field investigations.
	Wood Thrush (<i>Hylocichla mustelina</i>)	THR, Schedule 1	SC	SARA, MBCA	Potential - There are woodlands within the study area and adjacent lands that may provide suitable habitat for this species.

	Species	SARA	ESA	Legal Protection	Assessment
PLANTS	Butternut (<i>Juglans cinerea</i>)	END, Schedule 1	END	ESA	Potential - The woodlands associated with Etobicoke Creek may provide suitable habitat for this species. Butternut was not observed present within the tree inventory area or study area during 2021 field investigations.

4.8.2 AQUATIC SPECIES AT RISK

Only one aquatic SAR was identified during the background review to potentially occur in the area. NHIC provides records of Redside Dace which occur within several 1 km² grid squares within the study area. Redside Dace is a freshwater fish species listed as ‘Endangered’ and protected provincially under the ESA and listed as ‘Endangered’ federally and protected on Schedule 1 of the SARA. Redside Dace prefer small streams and headwaters with a gravel bottom and overhanging vegetation (i.e. grasses and shrubs), and are usually found in slow-moving areas such as pools (MECP, 2021). Redside Dace was historically present within the Etobicoke Creek watershed however the recent COSEWIC Status Report (2018) indicates that the species was last captured in Etobicoke Creek in 1940 and there is strong evidence that the species is likely extirpated from the watershed.

5. Impact Assessment, Mitigation Measures and Opportunities

5.1 Impact Analysis Approach

The analysis of potential impacts was determined by reviewing the preliminary preferred design for the Ken Whillans Drive extension to determine the extent of the impacts on natural features within the study area. It should be noted that potential impacts associated with future staging areas have not yet been determined. The outcome of this analysis was based on the anticipated disturbances due to the construction and operation required to complete the Ken Whillans Drive extension to the west to Nelson Street.

Direct impacts that may occur due to the Project are those associated with the disruption or displacement of natural features caused by the undertaking or activity which may be temporary or permanent (i.e., increased footprint due to permanent infrastructure). Construction is expected to be limited to landscaped parkland (i.e. Constructed Green Lands) including the removal of planted park trees. Most direct impacts occur during the construction phase of a project and contain localized, negative effects that can be reduced through avoidance (as much as possible) and proper construction practices.

Indirect impacts may also occur due to the proposed works and are typically associated with changes in site conditions such as surface drainage, water quality/quantity, increased noise, etc. Most indirect impacts during the construction phase are temporary or can be reduced/avoided with the application of best management practices and mitigation measures. Following construction, there may be more long-term, indirect impacts while the site recovers, and successional vegetation growth takes place. Typically, after the site re-vegetates, there is either a neutral or positive impact due to the placement of intentional native plantings, improved sediment control and surface drainage runoff control. Proper design and best management practices can mitigate long-term effects.

The proposed works for the Project include vegetation removal, excavation, grading, paving and other associated construction activities. These activities are expected to result in disturbance and vegetation removal in the parkland, however, are unlikely to encroach natural features. The following sections detail the direct and indirect impacts associated with construction activities. Impact potential to candidate SWH and SAR is considered low as the proposed works are expected to be contained within built areas and the parkland.

5.2 Potential Impacts

5.2.1 DESIGNATED FEATURES

Designated features are present within the study area and adjacent lands and include Urban River Valley Greenbelt Area, a City of Brampton (2020) Valleylands and Watercourse Corridor, TRCA Regulated Area, and TRCA's target NHS. Most of the study area and the preliminary design falls within the TRCA Regulated Area (see **Appendix A, Figure 1**). The other designated areas and features within the adjacent lands and the study area and not expected to be impacted by the proposed works, as the preferred preliminary design extending into these features are contained within already paved/disturbed areas.

5.2.2 VEGETATION AND VEGETATION COMMUNITIES

The majority of the study area and adjacent lands consist of constructed communities and most of the greenspace is maintained parkland associated with Rosalea Park and the Etobicoke Creek recreational trail. Naturalized vegetation communities are primarily associated with Etobicoke Creek and the adjacent lands with fragmented or small deciduous woodlands also present within the study area, however these communities will not be impacted by the proposed works.

Based on the preliminary design, approximately 45 trees and shrubs will be injured or removed to facilitate the Ken Whillans Drive extension as summarized in **Table 5** below (see **Appendix A, Figure 3**). Most of the trees and shrubs impacted are within City of Brampton property associated with Rosalea Park and should be replaced post-construction as

per the City of Brampton’s (2018) Tableland Tree Assessment Guidelines. Of the seven (7) trees within private property associated with the adjacent YMCA, five (5) of these trees have a DBH greater than 30 cm (IDs 40, 46, 48, 49 and 82) and will require a tree removal permit prior to removal as per the City’s Tree Preservation By-law (see **Section 6.3**).

TABLE 5 – SUMMARY OF POTENTIAL TREE AND SHRUB IMPACTS

Location/ Ownership	Potential Impact	Trees/ Shrubs	Tree/ Group IDs	TOTAL
City of Brampton	Remove	2 Austrian Pine	50, 51	35 (10 trees & ~25 shrubs)
		2 Honey Locust	38, 39	
		3 Norway Maple	1, 36, 37	
		3 Red Maple	22, 30, 34	
		~25 Common Buckthorn	60 (partial)	
City of Brampton	Injure	2 Austrian Pine	53, 54	3
		1 Red Maple	33	
Private	Remove	6 Norway Maple	40*, 46*, 48*, 49*, 82*, 83	6
	Injure	1 White Spruce	46	1
TOTAL				45

* Trees within private property that have a DBH greater than 30cm

Additional potential impacts to vegetation and vegetation communities during construction include:

- Soil compaction which can affect growing conditions if replanting is proposed in those areas following construction.
- Injury to trees outside of the construction limits if the proposed works occur within the root zones.
- Damage to vegetation due to fugitive dust suppression, salt spray effects, sedimentation, and accidental spills (e.g., fuel, oil, other hazardous materials).
- Changes to community structure due to the introduction and spread of invasive species.
- Exposure of soils from vegetation clearing, grubbing and grading can result in sediment runoff discharging into nearby terrestrial and aquatic communities.

5.2.3 TERRESTRIAL WILDLIFE AND WILDLIFE HABITAT

The majority of wildlife habitat potential is found in the adjacent lands associated with Etobicoke Creek which contain several naturalized communities, including woodlands and designated features associated with the watercourse. These naturalized areas have the potential to support candidate SWH (including SoCC) and SAR. Etobicoke Creek also provides habitat for fish and aquatic species. Encroachment of these natural features is not expected; however, general impacts to wildlife that may occur due to Project activities include temporary loss, disturbance, and alteration of habitat; disruption and avoidance of habitat; and injury and incidental take.

Temporary Habitat Loss

All vegetated communities and some built areas provide generalized wildlife habitat primarily for common species typical of urban environments. The proposed works have the potential to result in temporary generalized wildlife habitat loss during construction, however permanent habitat loss is not anticipated.

Habitat Alteration, Disruption and Avoidance

The proposed works have the potential to result in habitat alteration, disruption and avoidance of habitat during construction and operation of the road extension. The following impacts are identified:

- Fugitive dust and salt spray which can affect the health of species.

- Construction activities, such as grading can alter community structure, affect species composition and habitat quality due to changes in moisture regime, flow volume, rates, and water quality if natural drainage pathways are not maintained.
- Construction noise, vibration and increased human presence can result in disruption and avoidance of habitat. While most wildlife that occurs in urban environments are likely adapted, to some extent, to anthropogenic disturbances, such as traffic noise, excess or prolonged disturbances can cause impacts beyond tolerance levels. Construction noise may result in habitat avoidance or disturbance to individuals where interference with vocalizations could disrupt breeding and other natural processes.
- Temporary loss of access to vegetation/structures currently being used for bird nesting or bat roosting (e.g., buildings, snag trees, etc.).

Injury and Incidental Take

The proposed works have the potential to result in injury and incidental take during construction and operation of the road extension. The following impacts are identified:

- Collisions with vehicles, machinery, or physical barriers may occur if wildlife are able to access the construction limits (e.g., improper design or installation of exclusionary measures). Bats may also be susceptible to injury and/or incidental take, particularly if trees are removed while being occupied.
- Light pollution, including temporary and permanent lighting may cause disorientation or attract birds and bats to the area due to increased foraging potential which may result in injury or incidental take of individuals through collisions with vehicles or physical barriers.
- Migratory birds' nests and eggs are susceptible to incidental take during construction activities, especially during vegetation removal.
- Increased noise or the proximity of workers could cause nesting birds to temporarily vacate or completely abandon a nest in progress.
- Reptile hibernaculum that is discovered during construction, particularly in areas where there are building foundations or the roots of trees as this habitat type can occur anywhere that provides subterranean access below the frost line.

5.2.4 SAR AND SAR HABITAT

The study area provides limited habitat for SAR which is primarily restricted to the parkland which may support Red-headed Woodpecker and the small deciduous woodlands which may provide habitat for SAR bats. There were no trees with cavities suitable for Red-headed Woodpecker nesting identified within the Tree Inventory Area therefore suitable breeding habitat is not anticipated to be impacted by the proposed works. Furthermore, the woodlands that may provide habitat for SAR bats will not be impacted based on the preliminary design. Although no leaf clusters were observed, there are three large Maple trees (DBH >50) in the eastern end of the Tree Inventory Area (IDs 42, 43 and 45) as shown on **Appendix A, Figure 3**. These trees are not anticipated to be impacted based on the current design, however, should be preserved if the proposed design changes. Impacts to SAR is limited to injury and/or incidental take (see **Section 5.2.3**) during construction works.

5.2.5 FISH AND FISH HABITAT

The study area is located in the West Branch of the Etobicoke Creek watershed basin. The only drainage feature identified within the study area that provides fish and aquatic habitat is the Etobicoke Creek, which transects the northern portion of the study area. Impacts to Etobicoke Creek are not expected based on the preliminary design as the Ken Whillans Drive extension Project is more than 30 m southwest of the top of bank. Furthermore, fish and aquatic habitat adjacent to the study area is limited as the creek flows through a trapezoidal concrete channel.

5.3 Mitigation Measures and Opportunities

The Ken Whillans Drive extension has the potential to impact terrestrial features within the study area and adjacent lands during construction as well as potential effects post construction. Industry best management practices and mitigation measures shall be implemented to avoid or reduce potential adverse impacts to the terrestrial environment. No sensitive features such as wetlands, woodlands, wildlife corridors, SWH, and SAR habitat are anticipated to be directly impacted by the proposed works however impacts to general wildlife and SAR may still occur. The mitigation measures provided below shall be implemented to reduce impacts. Opportunities to potentially create a net benefit are also provided below.

5.3.1 DESIGNATED FEATURES

- Avoid encroachment of designated features (e.g. Urban River Valley, TRCA's target NHS and etc.) wherever possible through design.

5.3.2 VEGETATION AND VEGETATION COMMUNITIES

The following mitigation measures and opportunities are provided to minimize potential impacts to vegetation and natural features in the study area and adjacent lands:

- Avoid encroachment of nearby woodlands and the removal of large native trees (e.g. tree IDs 42, 43 and 45) wherever possible through design.
- Staging areas shall be sited in built-up (e.g. developed) and disturbed areas to minimize impacts to natural features.
- Install surface protection measures to minimize soil compaction in areas where post-construction plantings are proposed.
- The boundaries of the project limits, and trees marked for removal or preservation shall be clearly marked in plans/drawings and in the field.
- Install tree protection fencing along the dripline to protect the root zone of trees adjacent to the work zone and project limits.
- In the case of unexpected vegetation removal or accidental damage to trees, vegetation shall be replaced and/or restored.
- Temporarily disturbed areas shall be restored and vegetated to pre-construction conditions or better. Vegetation plantings shall include seed mixes that are appropriate for the area, and include a mix of native species, including salt-tolerant varieties (as needed) that are appropriate to the site and conditions.
- Compensation as per the City's (2018) Tableland Tree Assessment Guidelines shall be followed. Five (5) trees larger than 15 cm DBH located within the City's property are identified to be removed. As such, 17 replacement trees will be planted or a Cash-in-Lieu rate option for compensation of \$500 per tree, \$8,500 total, will be paid to compensate for their removal.
- Maintaining and enhancing the naturalized buffer between the Ken Whillans Drive extension and Etobicoke Creek into the design is also recommended to slow potential runoff into the watercourse.

5.3.3 INVASIVE AND NOXIOUS SPECIES MANAGEMENT

- Develop and implement invasive species management measures that includes measures for the removal, storage, and treatment of invasive species if encountered. These measures shall follow guidance documents such as the Ontario Invasive Plant Council's (2020) Best Management Practices Series available online at <https://www.ontarioinvasiveplants.ca/resources/best-management-practices/>.
- Implement the *Clean Equipment Protocol for Industry* (Halloran et al., 2013) to minimize the introduction and spread of invasive species.
- Opportunities for enhancement in the study area include removal of non-native and/or invasive species, utilizing a native seed mix and native species for tree plantings, and restoration of disturbed areas with native species following construction.

5.3.4 EROSION AND SEDIMENT CONTROL

- Determine and implement Erosion and Sediment Control (ESC) measures prior to construction to prevent erosion and off-site sedimentation.
- Maintain vegetative buffers and retain natural vegetation to the extent feasible, to help control erosion.
- Timing of vegetation removal shall consider rainfall and other weather conditions that could increase the likelihood of erosion and sedimentation.
- Minimize the extent and duration of exposed soil and cover areas to suppress dust and prevent sedimentation due to wind and rainfall erosion.
- Re-vegetate disturbed areas as soon as possible to help re-stabilize soils. Vegetation plantings shall include a seed mix that is appropriate to the area and similar to or better than pre-construction conditions.
- Selection of ESC measures shall be appropriate for the site and extent of disturbance, and potential impacts to wildlife, such as entanglement. For example, measures that contain plastic or wire mesh or netting shall not be used.
- ESC measures shall be installed prior to vegetation removal and remain in place until vegetation has become established and soils re-stabilized.
- Remove non-biodegradable ESC materials, where approved, once site is stabilized.
- ESC measures shall be inspected to confirm they are installed in accordance with manufacturer's instructions and maintained to ensure controls are working effectively and per design.

5.3.5 EARTH AND EXCESS MATERIAL, WASTE, REFUELING, SPILLS

- If feasible, avoid storing stockpiles of soil or vegetation on site as wildlife may be attracted to these areas.
- Develop and implement a Spill Prevention and Response Contingency Plan that includes measures for preventing, addressing, and reporting potential spills, in accordance with all applicable regulations, permits, and guidelines. Report any spills to the MECP Spills Action Centre hotline (1-800-268-6060).
- Spill kits shall always be kept on-site and accessible at all times. Equipment shall be maintained to be free of fluid leaks.
- All on-site materials shall be self-contained, maintained according to manufacturer's instructions, and disposed of appropriately to prevent entry of deleterious substances into the natural environment. Stockpiles, on-site hazardous materials, vehicle maintenance and refueling activities shall not be placed or occur within 30 m of a watercourse (i.e. Etobicoke Creek).

5.3.6 TERRESTRIAL WILDLIFE (INCLUDING SAR) AND WILDLIFE HABITAT

Wildlife (Including SAR) and Wildlife Habitat

- Time vegetation removal to occur outside the active season for birds and bats.
 - Birds: April 1 to August 31 (active season)
 - Bats: April 1 to September 30 (active season)

- Restrict construction activities to work areas and demarcate construction boundaries to prevent off-site encroachment.
- Direct artificial light away from natural areas to minimize disturbance to wildlife habitat.
- Avoid idling and ensure construction vehicles and machinery are kept in good repair.
- Where feasible, minimize the extent and duration of construction noise and lighting during sensitive seasons and to daylight hours.
- Additional surveys or consultation with the MECP to determine permitting requirements may be required if a potential snag tree that was not assessed needs to be removed.

Migratory Birds

- If vegetation removal or other activities that could impact birds is required during the active breeding period, prior to undertaking the proposed works a search for nests shall be completed by staff trained in conducting nest sweeps.
- Nest searches shall be completed within 48 hours or immediately prior to the proposed works.
- If an active nest is found within the work area at any time (including times outside of the typical nesting season), construction in the vicinity must cease until the young birds have fledged or the nest is otherwise abandoned.
- A setback from the nest (e.g., 30 m) shall be identified by a Qualified Biologist and the area demarcated to ensure work does not occur within the setback limits.

Wildlife Encounters, Safe Handling and Relocation

- Conduct daily visual inspections for wildlife prior to the start of construction. If wildlife are encountered during construction, whenever possible, work shall be temporarily suspended until the species is out of harm's way. If relocation is necessary, a Qualified Biologist shall be contacted, and the species shall be handled and transported following the MNRF (2015b) Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders. All injured wildlife (SAR or non-SAR) shall be transported to an authorized wildlife rehabilitator.
- Wildlife shall not be harmed or harassed.
- Any SAR observed must be reported to MECP within 24 hours.

5.3.7 FISH AND FISH HABITAT

- Implementation of ESC measures and appropriate measures to contain all construction material and debris within the construction footprint (see **Sections 5.3.4 and 5.3.5**) is expected to minimize risk of off-site impacts to fish and fish habitat.
- Potential drainage pathways of road salt to Etobicoke Creek should be considered in the design process to reduce further stressors on the aquatic environment as this area is of poorer water quality which is typical of urbanized areas.

5.3.8 ENVIRONMENTAL TRAINING AND MONITORING

- Workers shall be educated on the key environmental aspects of the project, including wildlife protocols in the case of potential wildlife encounters (including SAR) on the work site, ESC measures, the Spill Prevention and Response Contingency Plan, invasive and noxious species management, recognizing demarcations of trees marked for preservation in the work zone and other environmental plans/protocols developed for the project.
- Monitoring shall occur to ensure mitigation and contingency measures are implemented and performance objectives are being met.
- Environmental monitoring during construction shall include, but not be limited to, monitoring activities to ensure spills and sediment releases are prevented or addressed quickly and effectively. ESC measures shall be checked daily and before, during, and after major rain events (>10 mm) to ensure it is installed and functioning properly. Any deficiencies shall be repaired immediately. A construction monitoring log shall be maintained to ensure any deficiencies and corrective actions are documented.

6. Permits, Authorizations and Approvals

6.1 Endangered Species Act, MECP

Potential habitat for SAR is present for terrestrial species, including SAR bats and Red-headed Woodpecker. Impact potential of SAR bats is considered unlikely or low as the Project is not anticipated to encroach on natural areas and no potential snag trees were documented within the Tree Inventory Area. However, if there are potential snag trees or trees with cavities that were not assessed that need to be removed, then additional studies and consultation with the MECP may be required to determine permitting needs. Impact potential of Red-headed Woodpecker is also unlikely or low as no trees with cavities suitable for nesting were documented within the Tree Inventory Area. Therefore, a permit under the ESA is not anticipated for the Project.

6.2 Conservation Authorities Act, TRCA

Since the Project falls within TRCA Regulated Area (see **Appendix A, Figure 1**), consultation with TRCA is required to discuss potential impacts, mitigation and permitting requirements pertaining to works occurring within the Regulated Area.

6.3 Tree Preservation By-law and Park Lands By-law, City of Brampton

The tree inventory and assessment documented a total of 150 trees, most of which were non-native and/or invasive species. Native species documented included several large (DBH>50) Red and Silver Maples that are recommended to be preserved. Based on the preliminary design, 20 trees and a portion of a Common Buckthorn grouping (~25 shrubs) will be removed or injured to facilitate the Ken Whillans Drive extension.

The City of Brampton regulates the injury and removal of trees with a DBH of 30 centimetres (cm) or greater on privately owned lands through the Tree Preservation By-law 317-2012 (City of Brampton, 2012) and the injury and removal of trees of any size on municipal parkland through the Park Lands By-law 161-83 (City of Brampton, 1983). Tree Removal permits from the City for the trees within private property and a DBH larger than 30 cm (providing landowners consent is received) and within parkland will be required prior to injury or removal. Fees associated with tree removal permits are waived for Capital Improvement Projects. The City may require an arborist report be prepared in support of a permit application.

As five (5) trees larger than 15 cm DBH are identified for removal from within the City's property, 17 replacement plantings or a Cash-in-Lieu rate option for compensation of \$500 per tree, \$8,500 total, is required as per the City's (2018) Tableland Tree Assessment Guidelines. Compensation plantings are recommended to occur within Rosalea Park.

7. References

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APPENDIX A

(PROJECT MAPS)

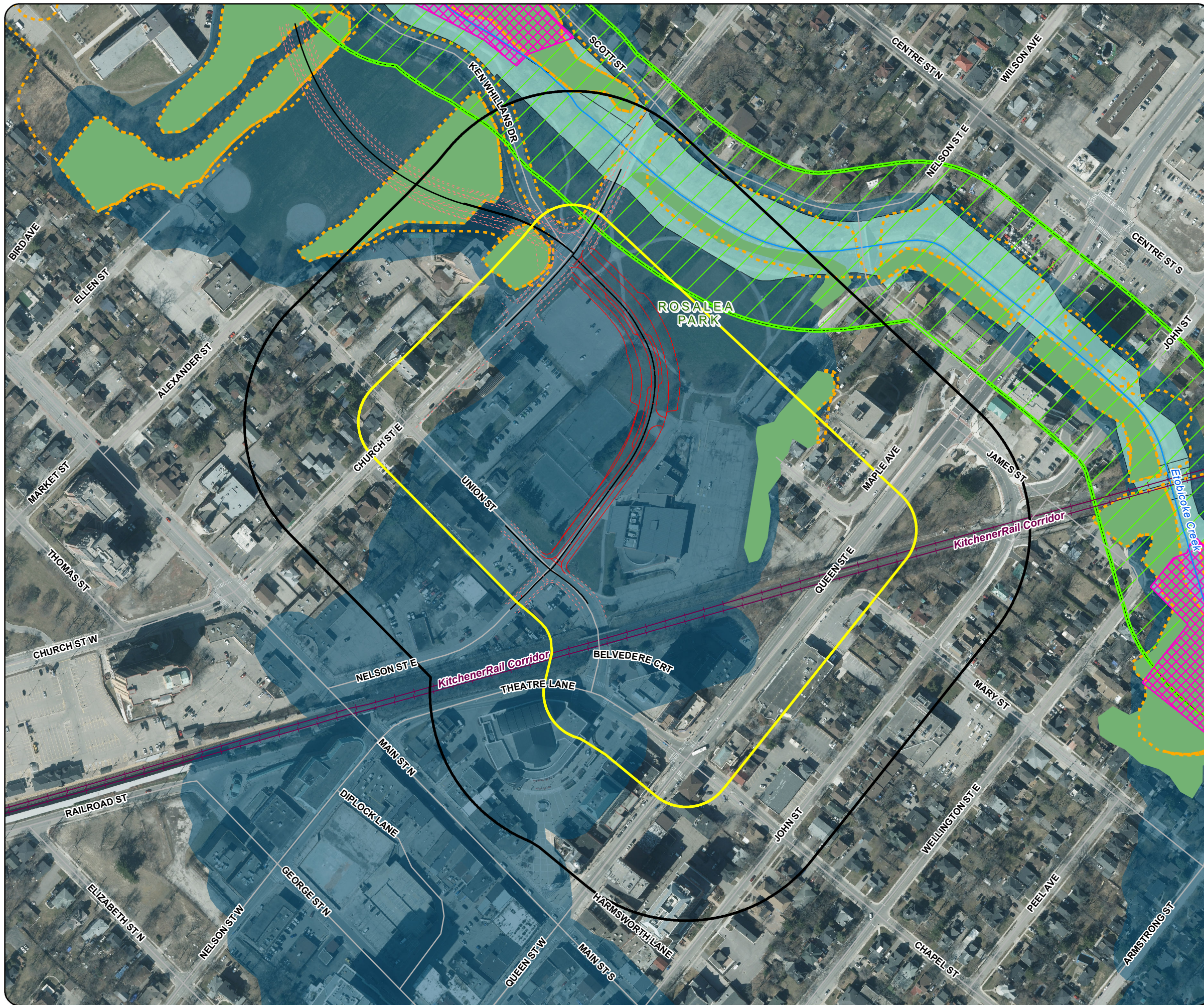
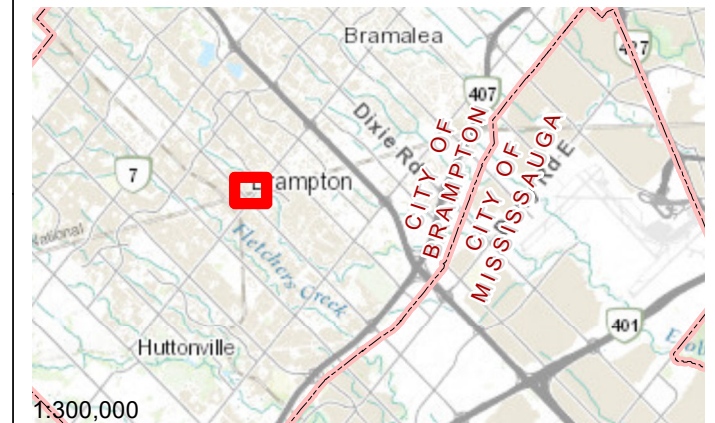


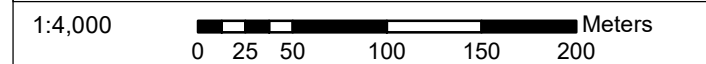
FIGURE 1
Project Overview and Designated Features

LOCATION MAP



LEGEND

- Road
- +— Rail
- Watercourse
- Preliminary Design
- - - Existing or Design Under Separate Scope
- New Road Alignment
- Study Area
- ▭ Adjacent Lands (120 m)
- ▭ Municipality
- - - Target Natural Heritage System (TRCA)
- ▭ Greenbelt Area - Urban River Valley
- ▭ Woodland (City of Brampton)
- ▭ Woodland (LIO)
- ▭ TRCA Regulated Area
- ▭ Valleyland/ Watercourse Corridor (City of Brampton)



DATA SOURCES: Parsons; Ontario Ministry of Natural Resources and Forestry; Toronto Region Conservation Authority (TRCA); City of Brampton; Ontario Ministry of Transportation; ESRI; Land Information Ontario (LIO)

Ken Whillans Drive Extension Natural Environment Assessment

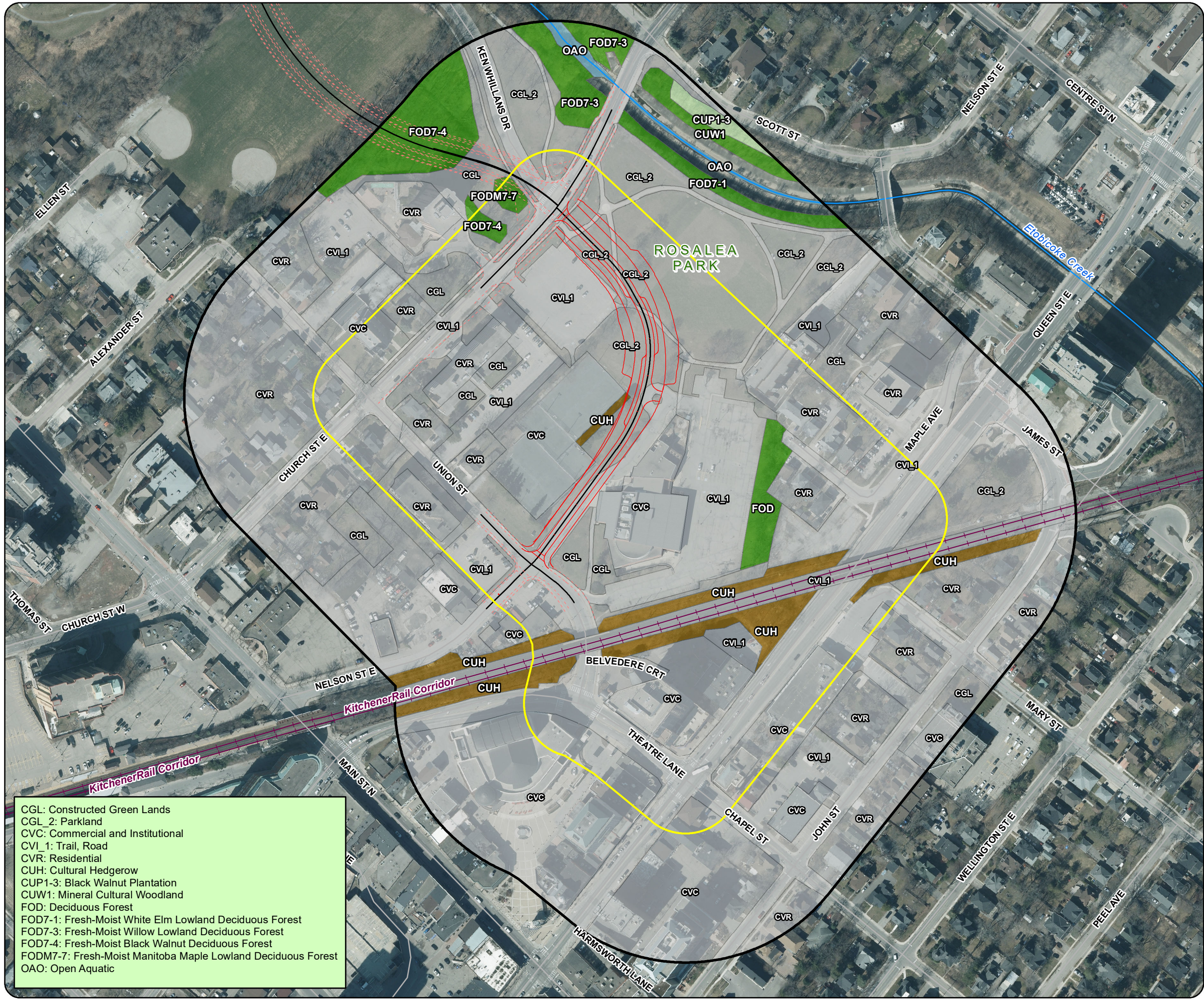
Existing Conditions and Impacts Assessment
Ken Whillans Drive from Church Street E to Union Street/ Nelson Street E,
City of Brampton

CONTRACT NO:
2020-193

DATE:
2/18/2022

DRAFT BY:
A.V.

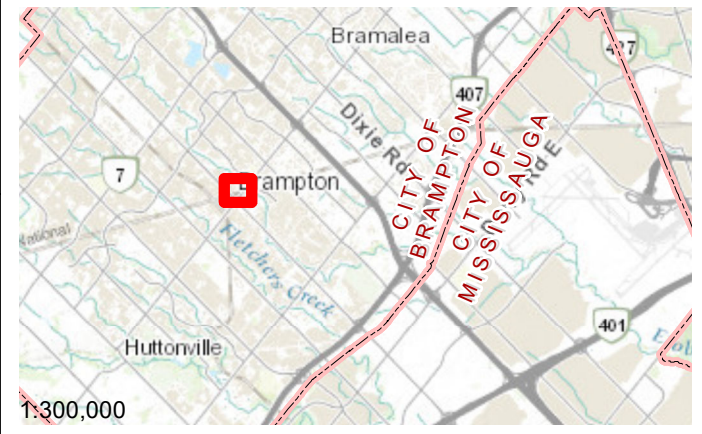




CGL: Constructed Green Lands
 CGL_2: Parkland
 CVC: Commercial and Institutional
 CVL_1: Trail, Road
 CVR: Residential
 CUH: Cultural Hedgerow
 CUP1-3: Black Walnut Plantation
 CUW1: Mineral Cultural Woodland
 FOD: Deciduous Forest
 FOD7-1: Fresh-Moist White Elm Lowland Deciduous Forest
 FOD7-3: Fresh-Moist Willow Lowland Deciduous Forest
 FOD7-4: Fresh-Moist Black Walnut Deciduous Forest
 FODM7-7: Fresh-Moist Manitoba Maple Lowland Deciduous Forest
 OAO: Open Aquatic

FIGURE 2
Ecological Land Classification (ELC)

LOCATION MAP



LEGEND

- Road
- +— Rail
- Watercourse
- Preliminary Design
- - - Existing or Design Under Separate Scope
- New Road Alignment
- Study Area
- Adjacent Lands (120 m)
- Municipality

Ecological Land Classification (ELC)

- Constructed
- Hedgerow
- Open Aquatic
- Plantation
- Woodland

1:3,500 Meters

DATA SOURCES: Parsons (2021); AECOM (2020); Ontario Ministry of Natural Resources and Forestry; Toronto Region Conservation Authority (TRCA); City of Brampton; Ontario Ministry of Transportation; ESRI; Land Information Ontario (LIO)

Ken Whillans Drive Extension Natural Environment Assessment
 Existing Conditions and Impacts Assessment
 Ken Whillans Drive from Church Street E to Union Street/ Nelson Street E,
 City of Brampton

CONTRACT NO: 2020-193	DATE: 2/18/2022	DRAFT BY: A.V.
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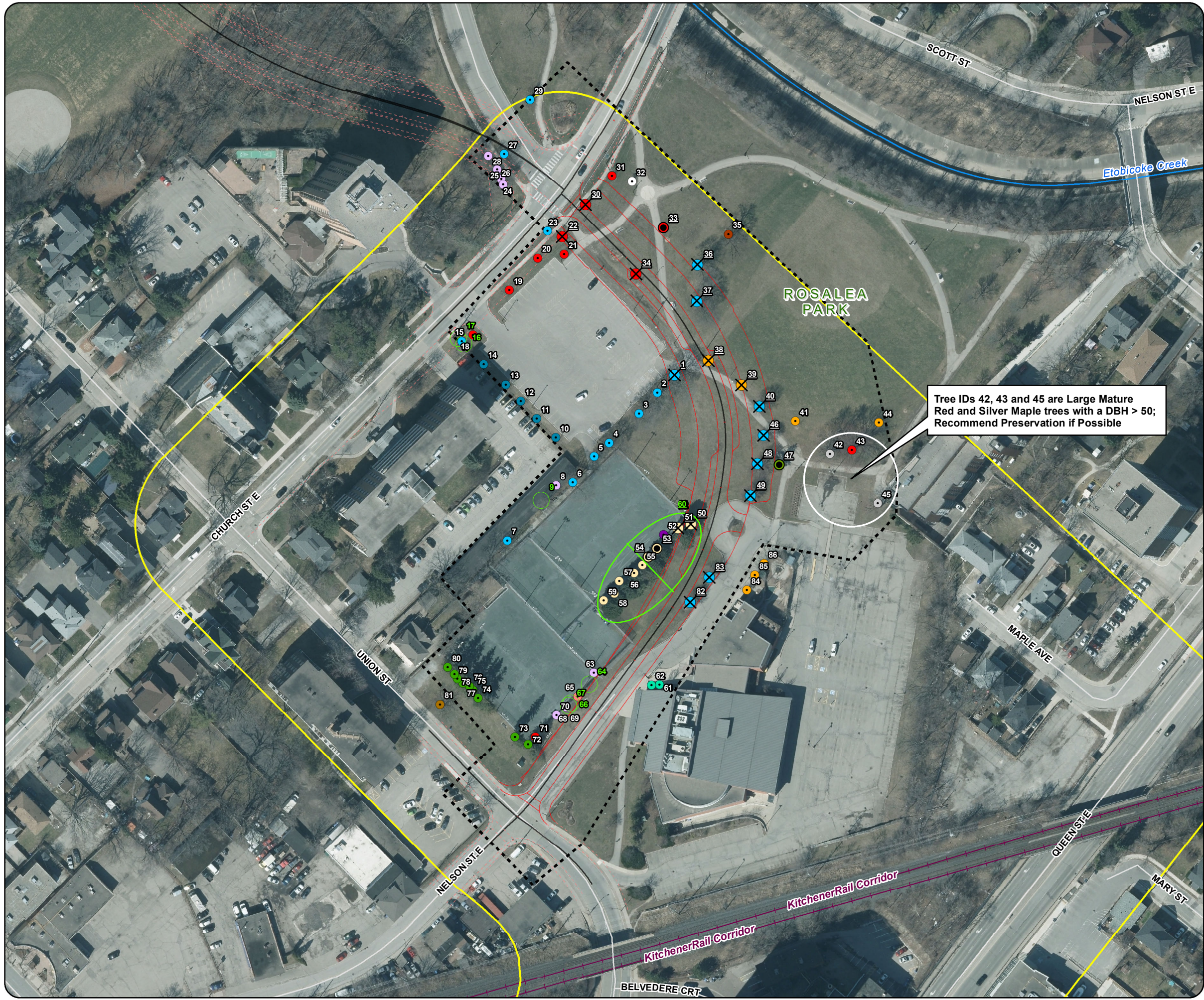
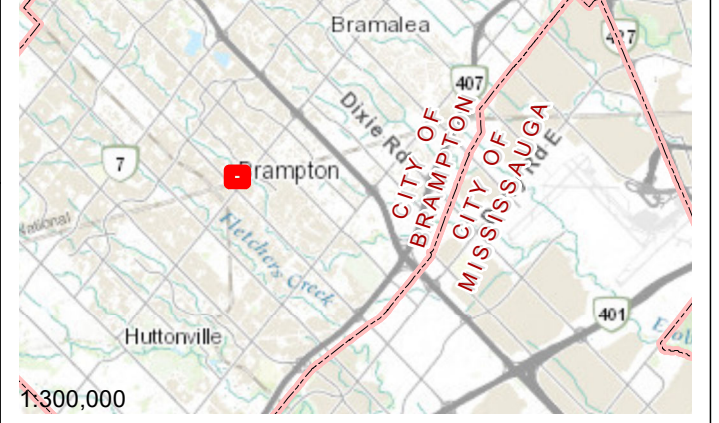


FIGURE 3
Tree Inventory and Assessment

LOCATION MAP



LEGEND

- Road
- Existing or Design Under Separate Scope
- Rail
- New Road Alignment
- Watercourse
- Tree Inventory Area
- Study Area
- Municipality
- Preliminary Design

Tree Inventory (Potential Impact)

- American Elm (None)
- Austrian Pine (None)
- Austrian Pine (Injure)
- ✕ Austrian Pine (Remove)
- Black Locust (None)
- Hackberry (None)
- Honey Locust (None)
- ✕ Honey Locust (Remove)
- Manitoba Maple (None)
- Maple Sp. (None)
- Norway Maple (None)
- ✕ Norway Maple (Remove)
- Oak sp. (None)
- Red Maple (None)
- Red Maple (Injure)
- ✕ Red Maple (Remove)
- Silver Maple (None)
- Walnut sp. (None)
- White Oak (None)
- White Spruce (None)
- White Spruce (Injure)
- Grouping (No Impact)
- Grouping (Partially Remove)

*NOTE: Potential impacts to trees were determined based on preliminary design (as of February 11, 2022). Potential impacts may change with updates to the design.



DATA SOURCES: Parsons (2021); AECOM (2020); Ontario Ministry of Natural Resources and Forestry; Toronto Region Conservation Authority (TRCA); City of Brampton; Ontario Ministry of Transportation; ESRI; Land Information Ontario (LIO)

Ken Whillans Drive Extension Natural Environment Assessment
Existing Conditions and Impacts Assessment
Ken Whillans Drive from Church Street E to Union Street/ Nelson Street E, City of Brampton

CONTRACT NO: 2020-193	DATE: 2/18/2022	DRAFT BY: A.V.
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APPENDIX B

(AGENCY CONSULTATION)

From: [Snell, Shamus \(MECP\)](#)
To: [Vaskeviciute, Austeja](#)
Cc: [Chan, Salina](#); [MacVeigh, Brydon](#)
Subject: [EXTERNAL] MECP SARB Review: Information Request Ken Whillans Drive Extension
Date: Friday, April 30, 2021 1:43:08 PM
Attachments: [image001.png](#)

Hi Austeja,

The Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) has conducted review of the Ken Whillans Drive Extension location, and the areas adjacent to them for Species at Risk (SAR) occurrences and have detected the following SAR occurrences in addition to confirming the SAR occurrences already identified in the consolidated list.

- Butternut (*Juglans cinerea*).

While this review represents MECP's best currently available information, it is important to note that a lack of information for a site does not mean that SAR or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in areas not previously surveyed. On-site assessments will need to be conducted to better verify site conditions, identify and confirm presence of SAR and/or their habitats.

Should vegetation removal be required as part of the proposed project, MECP recommends that a qualified biologist with botany expertise be retained to survey for SAR plants and to conduct habitat studies for the remaining species.

The Natural Heritage Information Center (NHIC) can provide location and observation specific information as requested below. The consultant must be able to demonstrate a need to know and must complete data sensitivity training and obtaining a Sensitive Data User Licence. For more information on this please visit NHIC website at: www.ontario.ca/page/get-natural-heritage-information [ontario.ca].

It is the responsibility of the proponent to ensure that SAR are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the proposed activities to be carried out on the site. If the proposed activities can not avoid impacting protected species and their habitats then the proponent will need to apply for a authorization under the Endangered Species Act (ESA).

Regards,

Shamus Snell

A/ Management Biologist
Species at Risk Branch
Ministry of the Environment, Conservation and Parks
Email: shamus.snell@ontario.ca

From: Vaskeviciute, Austeja <Austeja.Vaskeviciute@parsons.com>
Sent: April 20, 2021 11:08 AM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Chan, Salina <Salina.Chan@parsons.com>; MacVeigh, Brydon <Brydon.MacVeigh@parsons.com>
Subject: City of Brampton - Ken Whillans Drive Extension MCEA - SAR Info Request

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good morning,

Parsons has been retained by the Corporation of the City of Brampton to undertake a Schedule “B” Municipal Class Environmental Assessment (MCEA) for the Ken Whillans Drive Extension (south of Church Street E). Design of the extension has not yet been determined, however will likely be extending through Rosalea Park and then southwest bound towards Nelson Street E. The attached study area map shows the approximate potential Project limits (including alternative route) plus a 120 m buffer near the intersection of Church Street E and Union Street in the City of Brampton. Approximate UTM: 17T 600030 E 4838129 N.

Parsons is required to complete natural environment assessments to inform the decision making process to identify the preferred alternative and to identify required permits and approvals for the project. A list of Species at Risk (SAR) identified during the background review is summarized in the attached species list. SAR include species identified as Extirpated, Endangered, or Threatened and listed on the Species at Risk in Ontario list in Ontario Regulation 230/08 under the *Endangered Species Act, 2007*. Species listed as Special Concern under the ESA are also included on this list.

To facilitate the completion of the MCEA study, Parsons is reaching out to obtain background information and/or data that MECP may have related to the study area. Please review and confirm the information compiled from online data sources in the attached species list and provide any additional SAR. Parsons is requesting any additional information pertaining to SAR and/or habitat, including species, locations, observation dates, and community information.

If you have any questions, please feel free to contact me.

Many thanks,
Austeja

Austeja Vaskeviciute, BSc.
Terrestrial Biologist
1393 North Service Road East, Suite 103, Oakville ON, L6H 1A7
austeja.vaskeviciute@parsons.com
Mobile: (437) 227-3728

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Background Review

Species		SAR Status		Conservation Rank and Rarity Status					Sources
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	Local Rarity Rank ²	
AMPHIBIANS									
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END, Schedule 1	END	END	G4	S2		L1	ORAA
REPTILES									
Snapping Turtle	<i>Chelydra serpentina</i>	SC, Schedule 1	SC	SC	G5	S3		L3	ORAA, iNaturalist
MAMMALS									
Eastern Small-footed Myotis	<i>Myotis leibii</i>		END		G4	S2S3			AMO
Little Brown Myotis	<i>Myotis lucifugus</i>	END, Schedule 1	END	END	G3	S4		L4	AMO
Northern Myotis	<i>Myotis septentrionalis</i>	END, Schedule 1	END	END	G1G2	S3			AMO
Tricolored Bat	<i>Perimyotis subflavus</i>	END, Schedule 1	END	END	G2G3	S3?			AMO
BIRDS									
Bank Swallow	<i>Riparia riparia</i>	THR, Schedule 1	THR	THR	G5	S4B	Increase	L3	OBBA
Barn Swallow	<i>Hirundo rustica</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L4	OBBA
Bobolink	<i>Dolichonyx oryzivorus</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L2	OBBA
Chimney Swift	<i>Chaetura pelagica</i>	THR, Schedule 1	THR	THR	G4G5	S4B, S4N	Recovery Objective	L4	OBBA
Common Nighthawk	<i>Chordeiles minor</i>	THR, Schedule 1	SC	SC	G5	S4B	Recovery Objective	L3	OBBA
Eastern Meadowlark	<i>Stumella magna</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L3	OBBA; NHIC
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L2	OBBA
Eastern Wood-Pewee	<i>Contopus virens</i>	SC, Schedule 1	SC	SC	G5	S4B	Increase	L4	OBBA; NHIC; eBird
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR, Schedule 1	SC	THR	G4	S4B	Recovery Objective	L2	eBird
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	THR, Schedule 1	SC	END	G5	S4B	Recovery Objective	LX	OBBA
Wood Thrush	<i>Hylocichla mustelina</i>	THR, Schedule 1	SC	THR	G4	S4B	Maintain Current	L3	OBBA; eBird
INVERTEBRATES									
Monarch	<i>Danaus plexippus</i>	SC, Schedule 1	SC	END	G4	S2N, S4B			OBA
FISH									
Redside Dace	<i>Clinostomus elongatus</i>		END	END	G3G4	S2			NHIC

Definitions, Acronyms and Symbols

Species of Conservation Concern (SoCC)

Species at Risk (SAR)

ORAA and OBBA 10km² Map Squares: 17NJ93; 17PJ03

NHIC 1km² Map Squares: 17NJ9937; 17NJ9938; 17PJ0037 & 17PJ0038

Global G-rank

- G1:** Critically Imperiled (at very high risk of extinction)
- G2:** Imperiled (at high risk of extinction)
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- G4:** Apparently Secure (Uncommon but not rare)
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- S1:** Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)
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- S3:** Vulnerable (i.e. 20-80 occurrences in the nation and/or province)
- S4:** Apparently Secure (uncommon, but not rare in the nation and/or province)
- S5:** Secure (common, widespread and abundant in the nation and/or province)
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- SHB:** Breeding is not confirmed in Ontario
- S#S#:** Range Rank (range of uncertainty about the status of the species or community)
- S#?:** Rank is Uncertain
- S?:** Not Ranked Yet
- B:** Breeding migrants/vagrants
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COSEWIC: Committee on the Status of Endangered Wildlife in Canada

ESA: Endangered Species Act

SARA: Species at Risk Act

SARO: Species at Risk in Ontario

SARA or ESA designation

EXT - Extinct

Local Rarity (TRCA)²

- L1:** Species of Regional Conservation Concern (regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts)
- L2:** Species of Regional Conservation Concern (somewhat more abundant and generally slightly less sensitive than L1 species)
- L3:** Species of Regional Conservation Concern (generally less sensitive and more abundant than L1 and L2 ranked species)
- L4:** Species of Urban Concern (occur throughout the region but could show declines if urban impacts are not mitigated effectively)
- L5:** Species that are considered secure throughout the region
- L+:** Introduced species (not native to the Toronto region)

Species		SAR Status		Conservation Rank and Rarity Status				Sources
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	

END - Endangered

THR - Threatened

SC - Special Concern

NAR - Not at Risk

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

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

L+?: Species is probably introduced

Conservation Priorities¹

Recovery Objective - Species at Risk

Increase - Population in decline

Maintain Current - Appears to be stable or increasing

References / Sources

1 - Bird Conservation Strategy for Bird Conservation Region (BCR) 13 in Ontario Region: Lower Great Lakes/St. Lawrence Plain (Environment Canada 2014)

2 - Flora Species for the TRCA Jurisdiction (TRCA, 2019) & Fauna Ranks and Scores for the TRCA Jurisdiction (TRCA, 2019).

3 - NHIC - Natural Heritage Information Centre (NHIC) Make-a-map Tool (Ministry of Natural Resources and Forestry, 2021)

4 - iNaturalist website available online at <https://www.inaturalist.org/> (all projects searched, including NHIC Rare Species of Ontario and Herps of Ontario Projects).

5 - eBird website available online at <https://ebird.org/map/>

6 - ORAA - Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019)

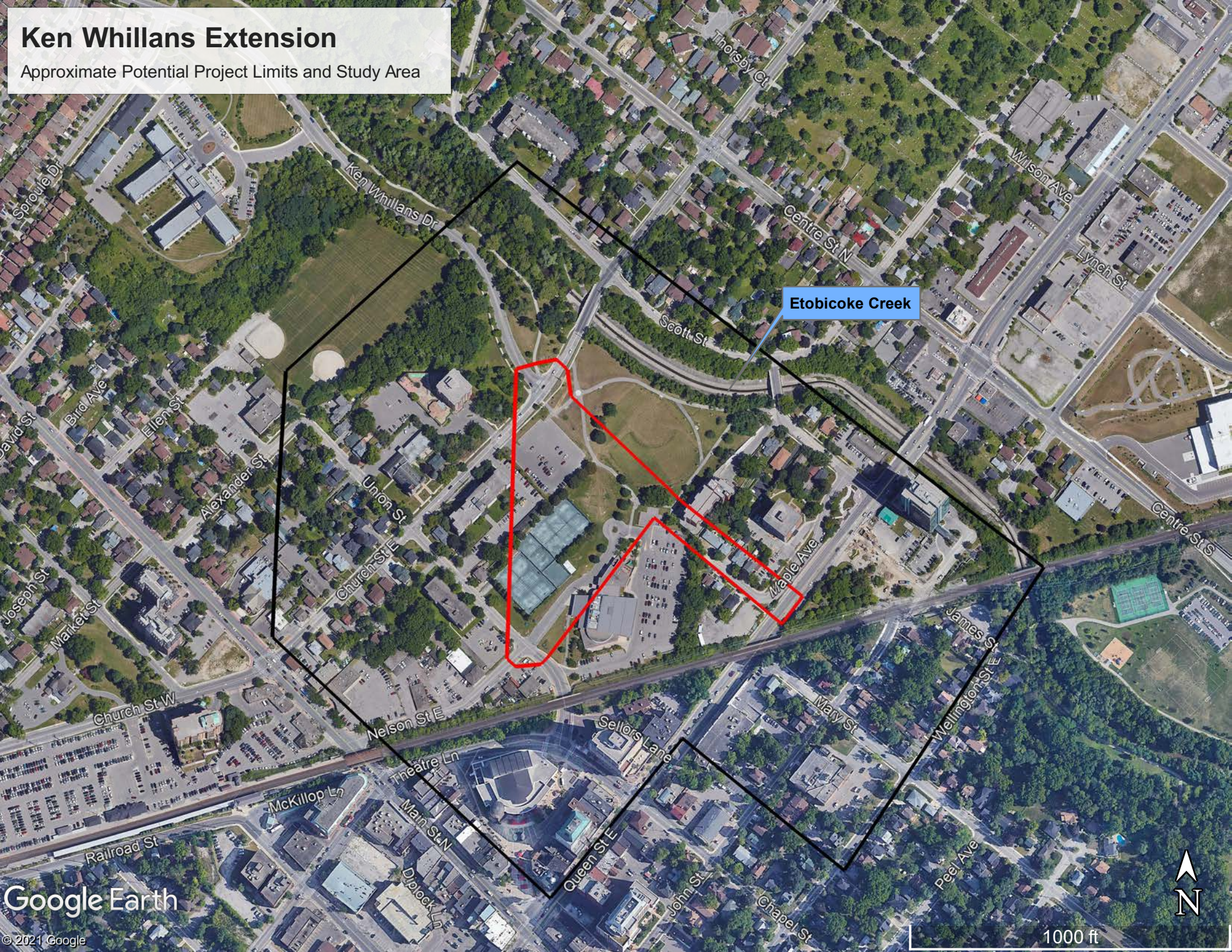
7 - OBBA - Ontario Breeding Bird Atlas (Bird Studies Canada, 2005)

8 - AMO - Atlas of the Mammals of Ontario (Dobbyn, 1994)

9 - OBA - Ontario Butterfly Atlas (Macnaughton et al., 2019)

Ken Whillans Extension

Approximate Potential Project Limits and Study Area



Etobicoke Creek



From: [Fortini, Natosha \(MNRF\)](#)
To: [Vaskeviciute, Austeja](#)
Cc: [Varga, Steve \(MNRF\)](#)
Subject: [EXTERNAL] RE: City of Brampton - Ken Whillans Drive Extension MCEA - Natural Environment Info Request
Date: Monday, April 26, 2021 12:08:44 PM
Attachments: [image002.png](#)
[image004.png](#)
[image003.png](#)

Hello Austeja,

This section of Etobicoke Creek is considered warm water and has a general timing window of July 1st – March 31st. Of course, this may be modified slightly by the planning authority who is reviewing and authorizing the project based on the scope of the works and site features, but this should give you a general idea. Species we have on records for your study area are:

Blacknose Dace, Blacknose Shiner, Bluntnose Minnow, Brook Stickleback, Common Shiner, Creek Chub, Emerald Shiner, Fantail Darter, Fathead Minnow, Johnny Darter x Tesselated Darter, Longnose Dace, Northern Hog Sucker, Rainbow Darter, Rock Bass, Spottail Shiner, White Sucker

To my knowledge, there isn't a Fisheries Management Plan for Etobicoke Creek but TRCA does have a Watershed Plan which may provide some localized knowledge on the area.

I do not have any information on Significant Wildlife Habitat within your study area. The local planning authority is responsible for delineating SWH based on the methodology outlined in the Significant Wildlife Habitat Technical Guide.

For information on species at risk, please contact MECP at SAROntario@ontario.ca.

Have a great week,

Natosha

Natosha Fortini

Management Biologist | Aurora District | Ontario Ministry of Natural Resources and Forestry | 50 Bloomington Rd. W., Aurora, ON, L4G 0L8 | P: 289-380-6181 | F: 905.713.7361 | natosha.fortini@ontario.ca



From: Varga, Steve (MNRF) <steve.varga@ontario.ca>
Sent: April 23, 2021 7:06 PM
To: Vaskeviciute, Austeja <Austeja.Vaskeviciute@parsons.com>
Cc: Fortini, Natosha (MNRF) <Natosha.Fortini@ontario.ca>
Subject: RE: City of Brampton - Ken Whillans Drive Extension MCEA - Natural Environment Info Request

Hi Teja

MNRF has not mapped any wetlands in the study area. In an examination of air-photos the only possibility for any wetlands in your study area are along the bottomlands of the Etobicoke Creek valley. The valley should be checked for wetlands in your field survey. Enclosed are suggested steps for doing a wetland boundary survey in case you come across a wetland.

All the best
Steve

Steve Varga

Management Biologist | Ontario Ministry of Natural Resources and Forestry | Aurora District Office
50 Bloomington Road, Aurora, Ontario, L4G 0L8 | Email: steve.varga@ontario.ca | Phone: 289-221-8157
For general inquiries, please contact the Aurora District line at 905-713-7400



From: Scientific Collection Permits Aurora (MNRF) <scp.aurora@ontario.ca>
Sent: Friday, April 23, 2021 1:49 PM
To: Fortini, Natosha (MNRF) <Natosha.Fortini@ontario.ca>
Cc: Varga, Steve (MNRF) <steve.varga@ontario.ca>
Subject: FW: City of Brampton - Ken Whillans Drive Extension MCEA - Natural Environment Info Request

Hi Natosha and Steve,

See email below looking for fisheries info and wetlands info. They have already checked out the Natural Heritage Guide online.

Thanks!

Karen

From: Vaskeviciute, Austeja <Austeja.Vaskeviciute@parsons.com>
Sent: Tuesday, April 20, 2021 11:10 AM
To: Scientific Collection Permits Aurora (MNRF) <scp.aurora@ontario.ca>
Cc: Chan, Salina <Salina.Chan@parsons.com>; MacVeigh, Brydon <Brydon.MacVeigh@parsons.com>
Subject: City of Brampton - Ken Whillans Drive Extension MCEA - Natural Environment Info Request

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good morning,

Parsons has been retained by the Corporation of the City of Brampton to undertake a Schedule “B” Municipal Class Environmental Assessment (MCEA) for the Ken Whillans Drive Extension (south of Church Street E). Design of the extension has not yet been determined, however will likely be extending through Rosalea Park and then southwest bound towards Nelson Street E. The attached study area map shows the approximate potential Project limits (including alternative route) plus a 120 m buffer near the intersection of Church Street E and Union Street in the City of Brampton. Approximate UTM: 17T 600030 E 4838129 N. Parsons is required to complete natural environment assessments to inform the decision making process to identify the preferred alternative and to identify required permits and approvals for the project.

Please note, Parsons biologists have consulted available online data sources following guidance outlined within the *Natural Heritage Information Request Guide* including DFO Online SAR Mapping, NHIC, Ontario Breeding Bird Atlas, Ontario Butterfly Atlas and iNaturalist. The information collected is provided in the SAR and SoCC list.

Fisheries Information Request

We are requesting any available fisheries information including fish community, thermal regime, in-water timing windows and important habitat features for the watercourses listed below and shown on the attached map:

- Etobicoke Creek (UTM 17T 600067 E 4838270 N)

Terrestrial Sensitivities

We are requesting any available information MNRF can provide related to the features listed below.

- Significant Wildlife Habitat (SWH)
- Wetlands not available on LIO
- Species of Conservation Concern (SoCC) which may be present

Thank you in advance for your consideration of the request, should you have any questions or concerns please do not hesitate to contact me.

Many thanks,

Austeja Vaskeviciute, BSc.

Terrestrial Biologist

1393 North Service Road East, Suite 103, Oakville ON, L6H 1A7

austeja.vaskeviciute@parsons.com

Mobile: (437) 227-3728

[Parsons \[can01.safelinks.protection.outlook.com\]](#) / [LinkedIn](#)

[\[can01.safelinks.protection.outlook.com\]](#) / [Twitter](#)

[\[can01.safelinks.protection.outlook.com\]](#) / [Facebook](#)

[\[can01.safelinks.protection.outlook.com\]](#) / [Instagram \[can01.safelinks.protection.outlook.com\]](#)



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Background Review

Species		SAR Status		Conservation Rank and Rarity Status					Sources
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	Local Rarity Rank ²	
AMPHIBIANS									
American Bullfrog	<i>Lithobates catesbeianus</i>				G5	S4		L2	ORAA
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>				G5	S5		L3	ORAA
Gray Treefrog	<i>Hyla versicolor</i>				G5	S5		L2	ORAA
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END, Schedule 1	END	END	G4	S2		L1	ORAA
Northern Leopard Frog	<i>Rana pipiens</i>				G5	S5		L3	ORAA
Spring Peeper	<i>Pseudacris crucifer</i>				G5	S5		L2	ORAA
Wood Frog	<i>Rana sylvatica</i>				G5	S5		L2	ORAA
REPTILES									
Midland Painted Turtle	<i>Chrysemys picta marginata</i>			SC	G5T5	S4		L3	ORAA
Red-bellied Snake	<i>Storeria occipitomaculata</i>				G5	S5		L3	ORAA
Snapping Turtle	<i>Chelydra serpentina</i>	SC, Schedule 1	SC	SC	G5	S3		L3	ORAA, iNaturalist
MAMMALS									
Eastern Small-footed Myotis	<i>Myotis leibii</i>		END		G4	S2S3			AMO
Little Brown Myotis	<i>Myotis lucifugus</i>	END, Schedule 1	END	END	G3	S4		L4	AMO
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>				G5	S5		L3	AMO
Northern Myotis	<i>Myotis septentrionalis</i>	END, Schedule 1	END	END	G1G2	S3			AMO
Tricolored Bat	<i>Perimyotis subflavus</i>	END, Schedule 1	END	END	G2G3	S3?			AMO
BIRDS									
American Woodcock	<i>Scolopax minor</i>				G5	S4B	Increase	L3	OBBA
Bank Swallow	<i>Riparia riparia</i>	THR, Schedule 1	THR	THR	G5	S4B	Increase	L3	OBBA
Barn Swallow	<i>Hirundo rustica</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L4	OBBA
Belted Kingfisher	<i>Ceryle alcyon</i>				G5	S4B	Increase	L4	OBBA
Black-and-white Warbler	<i>Mniotilta varia</i>				G5	S4B		L2	OBBA; eBird
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>				G5	S5B	Increase	L3	OBBA
Blackburnian Warbler	<i>Setophaga fusca</i>				G5	S5B		L3	eBird
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>				G5	S5B		L3	eBird
Black-throated Green Warbler	<i>Setophaga virens</i>				G5	S5B		L3	eBird
Blue-winged Teal	<i>Anas discors</i>				G5	S4	Increase	L3	OBBA
Bobolink	<i>Dolichonyx oryzivorus</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L2	OBBA
Brown Creeper	<i>Certhia americana</i>				G5	S5B		L3	OBBA; eBird
Brown Thrasher	<i>Toxostoma rufum</i>				G5	S4B	Increase	L3	OBBA
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>				G5	S5B		L3	OBBA; eBird
Chimney Swift	<i>Chaetura pelagica</i>	THR, Schedule 1	THR	THR	G4G5	S4B, S4N	Recovery Objective	L4	OBBA
Common Merganser	<i>Mergus merganser</i>				G5	S5B, S5N	Maintain Current	L3	OBBA
Common Nighthawk	<i>Chordeiles minor</i>	THR, Schedule 1	SC	SC	G5	S4B	Recovery Objective	L3	OBBA
Eastern Kingbird	<i>Tyrannus tyrannus</i>				G5	S4B	Increase	L4	OBBA
Eastern Meadowlark	<i>Stumella magna</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L3	OBBA; NHIC
Eastern Screech-Owl	<i>Megascops asio</i>				G5	S4		L3	OBBA
Eastern Towhee	<i>Pipilo erythrophthalmus</i>				G5	S4B	Increase	L3	OBBA; eBird
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective	L2	OBBA
Eastern Wood-Pewee	<i>Contopus virens</i>	SC, Schedule 1	SC	SC	G5	S4B	Increase	L4	OBBA; NHIC; eBird
Field Sparrow	<i>Spizella pusilla</i>				G5	S4B	Increase	L3	OBBA
Golden-crowned Kinglet	<i>Regulus satrapa</i>				G5	S5B		L3	OBBA; eBird
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR, Schedule 1	SC	THR	G4	S4B	Recovery Objective	L2	eBird
Great Blue Heron	<i>Ardea herodias</i>				G5	S4	Maintain Current	L3	OBBA
Green Heron	<i>Butorides virescens</i>				G5	S4B	Increase	L4	OBBA
Hermit Thrush	<i>Catharus guttatus</i>				G5	S5B		L3	eBird
Hooded Merganser	<i>Lophodytes cucullatus</i>				G5	S5B, S5N		L3	OBBA
Hooded Warbler	<i>Setophaga citrina</i>				G5	S4B	Increase	L2	OBBA; eBird
Horned Lark	<i>Eremophila alpestris</i>				G5	S5B		L3	OBBA
Killdeer	<i>Charadrius vociferus</i>				G5	S5B, S5N	Increase	L4	OBBA
Magnolia Warbler	<i>Setophaga magnolia</i>				G5	S5B		L3	OBBA; eBird

Species		SAR Status		Conservation Rank and Rarity Status					Sources
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	Local Rarity Rank ²	
Mourning Warbler	<i>Geothlypis philadelphia</i>				G5	S4B		L3	OBBA
Nashville Warbler	<i>Oreothlypis ruficapilla</i>				G5	S5B		L3	OBBA
Northern Flicker	<i>Colaptes auratus</i>				G5	S4B	Increase	L4	OBBA; eBird
Northern Harrier	<i>Circus cyaneus</i>				G5	S4B		L2	OBBA; eBird
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>				G5	S4B	Increase	L4	OBBA; eBird
Ovenbird	<i>Seiurus aurocapilla</i>				G5	S4B		L2	OBBA
Pileated Woodpecker	<i>Dryocopus pileatus</i>				G5	S5		L3	OBBA
Purple Martin	<i>Progne subis</i>				G5	S4B	Increase	L4	OBBA
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	THR, Schedule 1	SC	END	G5	S4B	Recovery Objective	LX	OBBA
Ruffed Grouse	<i>Bonasa umbellus</i>				G5	S4		L3	OBBA
Savannah Sparrow	<i>Passerculus sandwichensis</i>				G5	S4B	Increase	L4	OBBA
Scarlet Tanager	<i>Piranga olivacea</i>				G5	S4B		L3	OBBA; eBird
Sedge Wren	<i>Cistothorus platensis</i>				G5	S4B		L3	OBBA
Sharp-shinned Hawk	<i>Accipiter striatus</i>				G5	S5		L3	OBBA
Sora	<i>Porzana carolina</i>				G5	S4B	Assess/Maintain	L3	OBBA
Spotted Sandpiper	<i>Actitis macularia</i>				G5	S5	Increase	L4	OBBA
Veery	<i>Catharus fuscescens</i>				G5	S4B		L2	OBBA
Vesper Sparrow	<i>Pooecetes gramineus</i>				G5	S4B	Increase	L3	OBBA
White-throated Sparrow	<i>Zonotrichia albicollis</i>				G5	S5B		L3	OBBA
Wild Turkey	<i>Meleagris gallopavo</i>				G5	S5		L3	OBBA
Winter Wren	<i>Troglodytes hiemalis</i>				G5	S5B		L3	OBBA
Wood Duck	<i>Aix sponsa</i>				G5	S5	Increase	L4	OBBA
Wood Thrush	<i>Hylocichla mustelina</i>	THR, Schedule 1	SC	THR	G4	S4B	Maintain Current	L3	OBBA; eBird
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>				G5	S5B		L3	OBBA
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>				G5	S4B		L3	OBBA
INVERTEBRATES									
American Bumble Bee	<i>Bombus pensylvanicus</i>			SC	G3G4	S3S4			NHIC
Monarch	<i>Danaus plexippus</i>	SC, Schedule 1	SC	END	G4	S2N, S4B			OBA
Northern Bush Katydid	<i>Scudderia septentrionalis</i>				G3?	S3?			NHIC
Ruddy Dagger Moth	<i>Acronicta rubricoma</i>				G4	S1?			NHIC
	<i>Lemmeria digitalis</i>				G4	S1?			NHIC
FISH									
Redside Dace	<i>Clinostomus elongatus</i>		END	END	G3G4	S2			NHIC

Definitions, Acronyms and Symbols

Species of Conservation Concern (SoCC)

Species at Risk (SAR)

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- GU:** Unrankable (currently unrankable due to lack of information)
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- B:** Breeding
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ORAA and OBBA 10km² Map Squares: 17NJ93; 17PJ03

NHIC 1km² Map Squares: 17NJ9937; 17NJ9938; 17PJ0037 & 17PJ0038

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- S1:** Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)
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- B:** Breeding migrants/vagrants
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Species		SAR Status		Conservation Rank and Rarity Status				Sources
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

ESA: Endangered Species Act

SARA: Species at Risk Act

SARO: Species at Risk in Ontario

SARA or ESA designation

EXT - Extinct

END - Endangered

THR - Threatened

SC - Special Concern

NAR - Not at Risk

Conservation Priorities¹

Recovery Objective - Species at Risk

Increase - Population in decline

Maintain Current - Appears to be stable or increasing

Assess/ Maintain - Monitoring data was insufficient to propose an objective

References / Sources

1 - Bird Conservation Strategy for Bird Conservation Region (BCR) 13 in Ontario Region: Lower Great Lakes/St. Lawrence Plain (Environment Canada 2014)

2 - Flora Species for the TRCA Jurisdiction (TRCA, 2019) & Fauna Ranks and Scores for the TRCA Jurisdiction (TRCA, 2019).

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Local Rarity (TRCA)²

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

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

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

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

L5: Species that are considered secure throughout the region

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

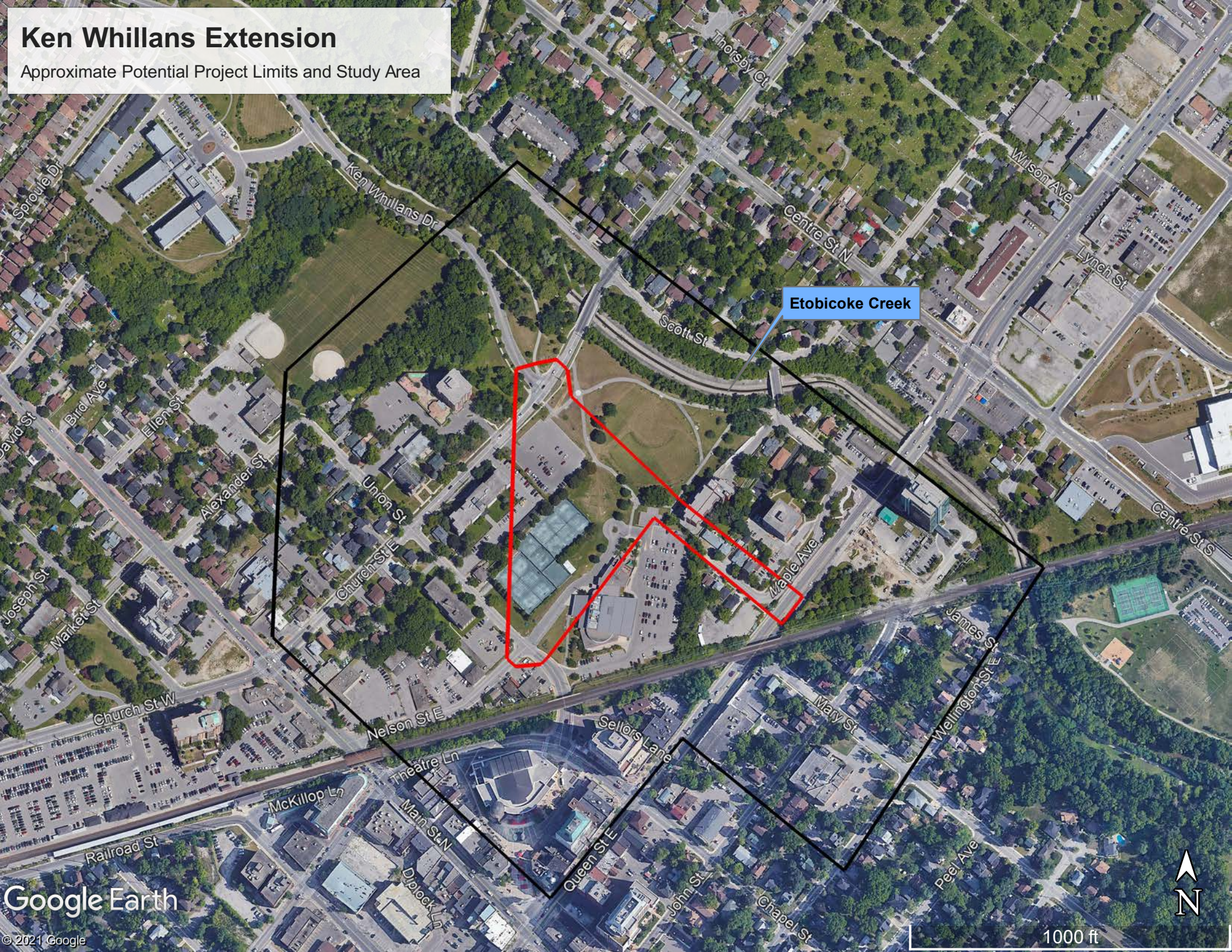
LX: Extirpated species (species not recorded in the region in the past 10 years)

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

L+?: Species is probably introduced

Ken Whillans Extension

Approximate Potential Project Limits and Study Area



Etobicoke Creek



APPENDIX C

(BACKGROUND REVIEW)

Background Review

Species		SAR Status		Conservation Rank and Rarity Status						
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	Regional Rarity Rank ²	Local Rarity Rank ³	Sources
AMPHIBIANS										
American Bullfrog	<i>Lithobates catesbeianus</i>				G5	S4			L2	ORAA
American Toad	<i>Bufo americanus</i>				G5	S5			L4	ORAA
Blue-spotted Salamander	<i>Ambystoma laterale</i>				G5	S4			LX	ORAA
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>				G5	S5			L3	ORAA
Gray Treefrog	<i>Hyla versicolor</i>				G5	S5			L2	ORAA
Green Frog	<i>Rana clamitans</i>				G5	S5			L4	ORAA
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END, Schedule 1	END	END	G4	S2			L1	ORAA
Northern Leopard Frog	<i>Rana pipiens</i>				G5	S5			L3	ORAA
Spring Peeper	<i>Pseudacris crucifer</i>				G5	S5			L2	ORAA
Wood Frog	<i>Rana sylvatica</i>				G5	S5			L2	ORAA
REPTILES										
Dekay's Brownsnake	<i>Storeria dekayi</i>				G5	S5			L4	ORAA
Eastern Gartersnake	<i>Thamnophis sirtalis</i>				G5T5	S5			L4	ORAA
Midland Painted Turtle	<i>Chrysemys picta marginata</i>			SC	G5T5	S4			L3	ORAA
Red-bellied Snake	<i>Storeria occipitomaculata</i>				G5	S5			L3	ORAA
Snapping Turtle	<i>Chelydra serpentina</i>	SC, Schedule 1	SC	SC	G5	S3			L3	ORAA, iNaturalist
MAMMALS										
Eastern Small-footed Myotis	<i>Myotis leibii</i>		END		G4	S2S3				AMO
Little Brown Myotis	<i>Myotis lucifugus</i>	END, Schedule 1	END	END	G3	S4			L4	AMO
Northern Myotis	<i>Myotis septentrionalis</i>	END, Schedule 1	END	END	G1G2	S3				AMO
Tricolored Bat	<i>Perimyotis subflavus</i>	END, Schedule 1	END	END	G2G3	S3?				AMO
BIRDS										
Bank Swallow	<i>Riparia riparia</i>	THR, Schedule 1	THR	THR	G5	S4B	Increase		L3	OBBA
Barn Swallow	<i>Hirundo rustica</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective		L4	OBBA
Bobolink	<i>Dolichonyx oryzivorus</i>	THR, Schedule 1	THR	SC	G5	S4B	Recovery Objective		L2	OBBA
Chimney Swift	<i>Chaetura pelagica</i>	THR, Schedule 1	THR	THR	G4G5	S4B, S4N	Recovery Objective		L4	OBBA
Common Nighthawk	<i>Chordeiles minor</i>	THR, Schedule 1	SC	SC	G5	S4B	Recovery Objective		L3	OBBA
Eastern Meadowlark	<i>Sturnella magna</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective		L3	OBBA; NHIC
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR, Schedule 1	THR	THR	G5	S4B	Recovery Objective		L2	OBBA
Eastern Wood-Pewee	<i>Contopus virens</i>	SC, Schedule 1	SC	SC	G5	S4B	Increase		L4	OBBA; NHIC; eBird
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR, Schedule 1	SC	THR	G4	S4B	Recovery Objective		L2	eBird
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	THR, Schedule 1	END	END	G5	S3	Recovery Objective		LX	OBBA
Wood Thrush	<i>Hylocichla mustelina</i>	THR, Schedule 1	SC	THR	G4	S4B	Maintain Current		L3	OBBA; eBird
INVERTEBRATES										
American Bumble Bee	<i>Bombus pensylvanicus</i>			SC	G3G4	S3S4				NHIC
Monarch	<i>Danaus plexippus</i>	SC, Schedule 1	SC	END	G4	S2N, S4B				OBA
FISH										
Redside Dace	<i>Clinostomus elongatus</i>	END, Schedule 1	END	END	G3G4	S2				NHIC
VASCULAR PLANTS										
Butternut	<i>Juglans cinerea</i>	END, Schedule 1	END	END	G3	S2?		U	L3	MECP
Bladder Sedge	<i>Carex intumescens</i>				G5	S5		U	L4	NAI
Pale Touch-me-not	<i>Impatiens pallida</i>				G5	S5		U	L4	NAI
Pin Cherry	<i>Prunus pensylvanica</i>				G5	S5		R	L4	NAI
Three-square	<i>Schoenoplectus pungens</i>				G5	S5		U	L4	NAI

Definitions, Acronyms and Symbols

Species of Conservation Concern (SoCC)

Species at Risk (SAR)

ORAA and OBBA 10km² Map Squares: 17N93; 17P03NHIC 1km² Map Squares: 17N9937; 17N9938; 17P0037 & 17P0038

Global G-rank

G1: Critically Imperiled (at very high risk of extinction)**G2:** Imperiled (at high risk of extinction)**G3:** Vulnerable (at moderate risk of extinction)**G4:** Apparently Secure (Uncommon but not rare)**G5:** Secure (common, widespread and abundant)

Provincial S-rank

S1: Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)**S2:** Imperiled (i.e. fewer than 20 occurrences in the nation and/or province)**S3:** Vulnerable (i.e. 20-80 occurrences in the nation and/or province)**S4:** Apparently Secure (uncommon, but not rare in the nation and/or province)**S5:** Secure (common, widespread and abundant in the nation and/or province)

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

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

GNR: Unranked (global rank not yet assessed)

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

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

B: Breeding

N: Non-breeding

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

ESA: Endangered Species Act

SARA: Species at Risk Act

SARO: Species at Risk in Ontario

SARA or ESA designation

EXT - Extinct

END - Endangered

THR - Threatened

SC - Special Concern

NAR - Not at Risk

Conservation Priorities¹

Recovery Objective - Species at Risk

Increase - Population in decline

Maintain Current - Appears to be stable or increasing

Assess/ Maintain - Monitoring data was insufficient to propose an objective

References / Sources

1 - Bird Conservation Strategy for Bird Conservation Region (BCR) 13 In Ontario Region: Lower Great Lakes/St. Lawrence Plain (Environment Canada 2014)

2 - List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E) (Oldham, 2017).

3 - Flora Species for the TRCA Jurisdiction (TRCA, 2019) & Fauna Ranks and Scores for the TRCA Jurisdiction (TRCA, 2019).

4 - NHIC - Natural Heritage Information Centre (NHIC) Make-a-map Tool (Ministry of Natural Resources and Forestry, 2021)

5 - iNaturalist website available online at <https://www.inaturalist.org/> (all projects searched, including NHIC Rare Species of Ontario and Herps of Ontario Projects).

6 - eBird website available online at <https://ebird.org/map/>

7 - ORAA - Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019)

8 - OBBA - Ontario Breeding Bird Atlas (Bird Studies Canada, 2005)

9 - AMO - Atlas of the Mammals of Ontario (Dobbyn, 1994)

10 - OBA - Ontario Butterfly Atlas (Macnaughton et al., 2019)

11 - NAI - Main - Vadden East Natural Area Inventory (TRCA, 2013)

12 - MECP - Ministry of Environment, Conservation and Parks email correspondence (2021)

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

SHB: Breeding is not confirmed in Ontario

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

S#?: Rank is Uncertain

S?: Not Ranked Yet

B: Breeding migrants/vagrants

N: Non-breeding migrants/vagrants

Regional Rarity (Carolinian Canada)²

C: Common

U: Uncommon

R: Rare

X: No Status

Local Rarity (TRCA)³

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

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

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

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

L5: Species that are considered secure throughout the region

L6: Introduced species (not native to the Toronto region)

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

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

L*?: Species is probably introduced

APPENDIX D

(TREE INVENTORY AND ASSESSMENT)

Appendix D - Tree Inventory - Ken Whillans Drive Extension EA

Tree ID	Common Name	Scientific Name	DBH (cm)	Dripline Radius (m)	# of Trees	Tree Condition										Location (UTM 17 T)		Ownership	Potential Impact	Comments	
						Overall Condition	Trunk Integrity	Canopy Structure	Canopy Vigour	# of Stems	Lean	Fungal Damage	Included Bark	Crack	Loose Bark	Suppressed	Easting				Northing
1	Norway Maple	<i>Acer plantinoides</i>	54.5	5		G	G	G	F								599992	4838174	City	Remove	A couple branches pruned
2	Norway Maple	<i>Acer plantinoides</i>	60.5	5		F	G	F	F								599986	4838167	City		Pruning on one side
3	Norway Maple	<i>Acer plantinoides</i>	55	6		G	G	G	G								599979	4838159	City		
4	Norway Maple	<i>Acer plantinoides</i>	63.5	6		G	G	G	G								599968	4838148	City		
5	Norway Maple	<i>Acer plantinoides</i>	46.5	5		G	G	G	G			Y					599962	4838142	City		
6	Norway Maple	<i>Acer plantinoides</i>	55	6		G	G	G	G								599954	4838132	Private		Assessed from distance
7	Norway Maple	<i>Acer plantinoides</i>	40	4		G	G	G	G								599929	4838110	Private		Assessed from distance
8	Manitoba Maple	<i>Acer negundo</i>	15	2		G	G	G	F								599947	4838131	Private		Assessed from distance
9	Manitoba Maple	<i>Acer negundo</i>	20, 15, 15	2	3	G	G	G	G								599942	4838125	Private		Assessed from distance
10	Hackberry	<i>Celtis occidentalis</i>	10	1		G	G	F	G								599947	4838149	City		
11	Hackberry	<i>Celtis occidentalis</i>	11.5	1		G	F	G	G								599940	4838157	City		
12	Hackberry	<i>Celtis occidentalis</i>	14	2		G	G	G	G								599933	4838163	City		
13	Hackberry	<i>Celtis occidentalis</i>	16	2		G	G	G	G								599927	4838169	City		
14	Hackberry	<i>Celtis occidentalis</i>	13.5	2		G	F	G	G								599919	4838177	City		
15	Norway Maple	<i>Acer plantinoides</i>	10	1		G	G	G	G								599910	4838186	City		
16	Norway Maple	<i>Acer plantinoides</i>	5	1	2	G	G	G	G								599911	4838185	City		
17	Manitoba Maple	<i>Acer negundo</i>	5 (3)	2	3	G	G	G	G								599909	4838187	City		
18	Red Maple	<i>Acer rubrum</i>	9	2		G	F	G	G								599915	4838188	City		Some chips on the trunk
19	Red Maple	<i>Acer rubrum</i>	6	1		G	G	G	G								599928	4838206	City		
20	Red Maple	<i>Acer rubrum</i>	9	1.5		G	G	G	G								599939	4838218	City		
21	Red Maple	<i>Acer rubrum</i>	6	1		G	G	G	G								599949	4838220	City		
22	Red Maple	<i>Acer rubrum</i>	6	1		G	F	G	G								599948	4838226	City	Remove	Damage to trunk
23	Norway Maple	<i>Acer plantinoides</i>	20	2		G	G	G	G								599943	4838229	City		
24	Manitoba Maple	<i>Acer negundo</i>	20	5		G	F	G	G						Y		599925	4838248	Private		Assessed from distance
25	Manitoba Maple	<i>Acer negundo</i>	20	5		G	F	G	G								599925	4838246	Private		Assessed from distance
26	Manitoba Maple	<i>Acer negundo</i>	20	5		G	G	F	G	45 E							599923	4838252	Private		Assessed from distance
27	Norway Maple	<i>Acer plantinoides</i>	21.5	5		G	G	G	G								599926	4838258	City		
28	Manitoba Maple	<i>Acer negundo</i>	10	5		G	G	F	G	45 E							599919	4838257	Private		Assessed from distance
29	Norway Maple	<i>Acer plantinoides</i>	21	3.5		G	G	G	G								599935	4838279	City		
30	Red Maple	<i>Acer rubrum</i>	6	1		G	F	G	G								599957	4838239	City	Remove	Scar on trunk
31	Red Maple	<i>Acer rubrum</i>	6.5	1		G	G	G	G								599967	4838250	City		
32	White Oak	<i>Quercus alba</i>	6.5	1		G	G	G	G								599975	4838248	City		
33	Red Maple	<i>Acer rubrum</i>	5.5	1		G	G	G	G								599987	4838230	City	Injure	
34	Red Maple	<i>Acer rubrum</i>	5.5	1		G	G	G	G								599977	4838212	City	Remove	
35	Black Locust	<i>Robinia pseudoacacia</i>	63, 50	7		G	G	G	G	2							600012	4838228	City		
36	Norway Maple	<i>Acer plantinoides</i>	52.5	5		G	G	G	G								600001	4838216	City	Remove	Some lower branches have been pruned
37	Norway Maple	<i>Acer plantinoides</i>	58	7		G	G	G	G								600000	4838202	City	Remove	Some lower branches have been pruned
38	Honey Locust	<i>Gleditsia triacanthos</i>	6.5	1.5		G	G	G	G								600005	4838180	City	Remove	
39	Honey Locust	<i>Gleditsia triacanthos</i>	6.5	1		G	G	G	G								600018	4838171	City	Remove	
40	Norway Maple	<i>Acer plantinoides</i>	34	5		G	G	G	G								600025	4838162	Private	Remove	
41	Honey Locust	<i>Gleditsia triacanthos</i>	7	1.5		G	F	G	G								600039	4838157	Private		Some damage to trunk, non healed scar
42	Silver Maple	<i>Acer saccharinum</i>	89	9		G	F	G	G								600052	4838145	Private		Lots of exposed roots
43	Red Maple	<i>Acer rubrum</i>	70.5	9		G	G	G	G						Y		600061	4838146	City		
44	Honey Locust	<i>Gleditsia triacanthos</i>	7	1.5		G	G	G	G								600071	4838157	City		Epicural shoots
45	Silver Maple	<i>Acer saccharinum</i>	52	7.5		G	G	G	G								600071	4838126	Private		
46	Norway Maple	<i>Acer plantinoides</i>	33.5	4		F	P	G	G								600027	4838151	Private	Remove	Exposed roots mound; crack from base to dbh height
47	White Spruce	<i>Picea glauca</i>	27	2		G	G	G	F								600033	4838140	Private	Injure	
48	Norway Maple	<i>Acer plantinoides</i>	35.5	5		G	G	G	G								600025	4838140	Private	Remove	Exposed roots mound
49	Norway Maple	<i>Acer plantinoides</i>	33.5	5		F	P	G	G								600022	4838128	Private	Remove	Exposed roots mound, crack from base to 1.5 m
50	Austrian Pine	<i>Pinus nigra</i>	32, 19	5		G	G	G	G	2							599999	4838117	City	Remove	
51	Austrian Pine	<i>Pinus nigra</i>	39, 15, 14.5	5		G	G	G	G	3							599995	4838115	City	Remove	
52	Walnut sp.	<i>Carya spp.</i>	10	2		G	G	G	G								599989	4838113	City		
53	Austrian Pine	<i>Pinus nigra</i>	34.5	4		G	G	G	F								599987	4838107	City	Injure	
54	Austrian Pine	<i>Pinus nigra</i>	40	4		G	G	G	F								599983	4838104	City	Injure	

Tree ID	Common Name	Scientific Name	DBH (cm)	Dripline Radius (m)	# of Trees	Tree Condition										Location (UTM 17 T)		Ownership	Potential Impact	Comments	
						Overall Condition	Trunk Integrity	Canopy Structure	Canopy Vigour	# of Stems	Lean	Fungal Damage	Included Bark	Crack	Loose Bark	Suppressed	Easting				Northing
55	Austrian Pine	<i>Pinus nigra</i>	34	5		G	G	G	F								599981	4838101	City		
56	Austrian Pine	<i>Pinus nigra</i>	40	5		F	F	G	F								599978	4838098	City		
57	Austrian Pine	<i>Pinus nigra</i>	40.5	5		G	G	G	F								599972	4838095	City		
58	Austrian Pine	<i>Pinus nigra</i>	27	4		G	G	G	F								599970	4838090	City		
59	Austrian Pine	<i>Pinus nigra</i>	41.5	5		G	G	G	F								599966	4838087	City		
60	Common Buckthorn	<i>Rhamnus cathartica</i>	10 (15), <10 (35)	2	50	G	G	G	G								599978	4838092	City	Partially Remove	approximately 50 shrubs of 10 DBH or less
61	Oak sp.	<i>Quercus spp.</i>	15, 15, 10, 10, 10	2.5		G	G	G	G	5							599988	4838055	Private		Assessed from distance
62	Oak sp.	<i>Quercus spp.</i>	10, 10, 10, 10, 10	2		G	G	G	G	5							599985	4838055	Private		Assessed from distance
63	Manitoba Maple	<i>Acer negundo</i>	5.5, <5 (4)	1.5		G	F	G	G	5							599963	4838059	City		
64	Manitoba Maple	<i>Acer negundo</i>	9, 8, 5 (7)	2	9	G	F	G	G								599961	4838055	City		
65	American Elm	<i>Ulmus americana</i>	10.5, 3	2		G	G	G	G	2							599957	4838050	City		
66	Manitoba Maple	<i>Acer negundo</i>	8 (4)	1.5	4	G	G	G	G								599954	4838048	City		
67	Red Maple	<i>Acer rubrum</i>	6, 5(3)	1	3	G	G	G	G								599953	4838047	City		
68	Manitoba Maple	<i>Acer negundo</i>	7, 5	2.5		G	G	F	G	2	30 S						599952	4838046	City		
69	Manitoba Maple	<i>Acer negundo</i>	7(3)	2		G	G	G	G	3							599952	4838046	City		
70	Manitoba Maple	<i>Acer negundo</i>	9	2.5		G	G	G	G								599949	4838043	City		
71	Red Maple	<i>Acer rubrum</i>	8.5, <7 (13)	3		G	G	G	G	14							599941	4838034	City		
72	White Spruce	<i>Picea glauca</i>	40	2		G	G	G	G								599938	4838032	City		
73	White Spruce	<i>Picea glauca</i>	41.5	2		G	G	G	G								599933	4838034	City		
74	White Spruce	<i>Picea glauca</i>	42	2		G	F	G	G								599919	4838049	City		Some damage on trunk, not yet healed
75	White Spruce	<i>Picea glauca</i>	38.5	3		G	G	G	G								599917	4838052	City		
76	White Spruce	<i>Picea glauca</i>	32.5	1.5		G	G	G	G								599915	4838054	City		
77	White Spruce	<i>Picea glauca</i>	38.5	3		G	G	G	G								599913	4838055	City		
78	White Spruce	<i>Picea glauca</i>	41	3		G	G	G	G								599911	4838056	City		
79	White Spruce	<i>Picea glauca</i>	39.5	2.5		G	G	G	G								599909	4838058	City		
80	White Spruce	<i>Picea glauca</i>	44	3		G	G	G	G								599907	4838061	City		
81	Maple Sp.	<i>Acer spp.</i>	38.5	5		G	F	G	G								599904	4838046	City		Some loose bark at base
82	Norway Maple	<i>Acer plantinoides</i>	33.5	4		G	G	G	G								600000	4838087	Private	Remove	Exposed roots
83	Norway Maple	<i>Acer plantinoides</i>	27	4		G	G	G	G								600007	4838097	Private	Remove	Exposed roots
84	Honey Locust	<i>Gleditsia triacanthos</i>	15	3		G	G	G	G								600021	4838092	Private		Assessed from distance
85	Honey Locust	<i>Gleditsia triacanthos</i>	18	3		G	G	G	G								600024	4838098	Private		Assessed from distance
86	Honey Locust	<i>Gleditsia triacanthos</i>	20	4		G	G	G	G								600028	4838102	Private		Assessed from distance

APPENDIX E

(BOTANICAL INVENTORY)

Vegetation Documented within the Project

Species			At-Risk Status		Conservation Rank and Rarity Status			Floristic Quality Assessment			
Family	Scientific Name	Common Name	National (SARA)	Provincial (SARO List)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Regional Rarity Rank	Native/Introduced Status	Coefficient of Conservatism (CC)	Coefficient of Wetness (CW)
Aceraceae	<i>Acer negundo</i>	Manitoba Maple				G5	S5		N	0	0
Aceraceae	<i>Acer plantinoides</i>	Norway Maple				GNR	SNA		I		5
Aceraceae	<i>Acer rubrum</i>	Red Maple				G5	S5		N	4	0
Aceraceae	<i>Acer saccharinum</i>	Silver Maple				G5	S5		N	5	-3
Anacardiaceae	<i>Rhus typhina</i>	Staghorn Sumac				G5	S5		N	1	3
Anacardiaceae	<i>Toxicodendron radicans</i> var. <i>rydbergii</i>	Western Poison Ivy				GT5	S5		N	2	0
Apiaceae	<i>Daucus carota</i>	Wild Carrot				GNR	SNA/SE5		I		5
Asteraceae	<i>Achillea millefolium</i>	Common Yarrow				G5	SNA/SE5?		I		3
Asteraceae	<i>Arctium minus</i>	Common Burdock				GNR	SNA		I		3
Asteraceae	<i>Cirsium arvense</i>	Creeping Thistle				G5	SNA/SE5		I		3
Asteraceae	<i>Pilosella aurantiaca</i>	Orange Hawkweed				GNR	SNA/SE5		I		5
Asteraceae	<i>Solidago canadensis</i>	Canada Goldenrod				G5	S5		N	1	3
Cannabaceae	<i>Celtis occidentalis</i>	Common Hackberry				G5	S4		N	8	0
Caprifoliaceae	<i>Lonicera tatarica</i>	Tatarian Honeysuckle				GNR	SNA		I		3
Cornaceae	<i>Cornus alternifolia</i>	Alternate-leaved Dogwood				G5	S5		N	6	3
Cornaceae	<i>Cornus canadensis</i>	Bunchberry				G5	S5		N	7	0
Cornaceae	<i>Cornus racemosa</i>	Gray Dogwood				G5	S5		N	2	0
Cupressaceae	<i>Thuja occidentalis</i>	Eastern White Cedar				G5	S5		N	4	-3
Fabaceae	<i>Gleditsia triacanthos</i>	Honey-Locust				G5	S2?		N	8	0
Fabaceae	<i>Lotus corniculatus</i>	Garden Bird 's-foot Trefoil				GNR	SNA/SE5		I		3
Fabaceae	<i>Robinia pseudoacacia</i>	Black Locust				G5	SNA		I		3
Fabaceae	<i>Vicia cracca</i>	Tufted Vetch				GNR	SNA/SE5		I		5
Fagaceae	<i>Quercus alba</i>	White Oak				G5	S5			6	3
Fagaceae	<i>Quercus rubra</i>	Northern Red Oak				G5	S5		N	6	3
Juglandaceae	<i>Juglans nigra</i>	Black Walnut				G5	S4?		N	5	3
Lamiaceae	<i>Prunella vulgaris</i>	Self-heal				G5	S5		N	0	0
Onagraceae	<i>Chamaenerion angustifolium</i>	Fireweed				G5	S5		N	3	-3
Pinaceae	<i>Picea glauca</i>	White Spruce				G5	S5		N	6	3
Pinaceae	<i>Pinus nigra</i>	Black Pine				GNR	SNA/SE3		I		5
Poaceae	<i>Agrostis gigantea</i>	Redtop				G4G5	SNA/SE5		I		-3
Poaceae	<i>Bromus inermis</i>	Smooth Brome				G5	SNA/SE5		I		5
Poaceae	<i>Phalaris arundinacea</i>	Reed Canary Grass				G5	S5		N	0	-3
Poaceae	<i>Poa pratensis</i>	Kentucky Bluegrass				G5	S5		N	0	3
Rhamnaceae	<i>Rhamnus cathartica</i>	Common Buckthorn				GNR	SNA/SE5		I		0
Rosaceae	<i>Fragaria virginiana</i>	Wild Strawberry				G5	S5		N	2	3
Rosaceae	<i>Spiraea alba</i> var. <i>alba</i>	White Meadowsweet				G5T5	S5		N	3	-3
Salicaceae	<i>Salix x fragilis</i>	Crack Willow				GNA	SNA				
Salicaceae	<i>Salix x sepulcralis</i>	Weeping Willow				GNA	SNA				
Scrophulariaceae	<i>Verbascum thapsus</i>	Common Mullein				GNR	SNA/SE5		I		5
Ulmaceae	<i>Ulmus americana</i>	American Elm				G5	S5		N	3	-3
Vitaceae	<i>Parthenocissus vitacea</i>	Thicket Creeper				G5	S5		N	4	3
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape				G5	S5		N	0	0

FLORISTIC QUALITY ASSESSMENT

Families: n=20
Total Species: n=42
Native Species: n=24 (57%)
Introduced Species: n=15 (36%)
Coefficient of Conservatism (CC) Mean CC: 3.3

General habitat values associated with the CC values are:

0-3: species found in a wide variety of communities, including disturbed sites
4-6: species associated with a specific community, but tolerate moderate disturbance
7-8: species associated with a community in an advanced successional stage, tolerant of minor disturbances
9-10: species with a high degree of fidelity to a narrow range of synecological parameters

Weediness Index

-1: little or no impact on natural areas (most non-native plants are in this category)
-2: occasional impacts on natural areas, generally infrequent or localized
-3: major potential impacts on natural areas

Definitions, Acronyms and Symbols

Species at Risk

Species of Conservation Concern

SARO: Species at Risk in Ontario

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

SARA: Species at Risk Act

National and Provincial At Risk Status

EXP - Extirpated

END - Endangered

THR - Threatened

SC - Special Concern

NAR - Not at Risk

Provincial S-rank

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

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

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

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

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

SE1: Not Applicable (species is not a suitable target for conservation activities)

SE2: Breeding is not confirmed in Ontario

SX: Extirpated from province

SU: Status uncertain due to insufficient information

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

S#?: Rank is Uncertain

S?: Not Ranked Yet

Global G-rank

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

G2: Imperiled (at high risk of extinction)

G3: Vulnerable (at moderate risk of extinction)

G4: Apparently Secure (Uncommon but not rare)

G5: Secure (common, widespread and abundant)

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

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

GNR: Unranked (global rank not yet assessed)

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

APPENDIX F

(SIGNIFICANT WILDLIFE HABITAT ASSESSMENT)

APPENDIX F – SIGNIFICANT WILDLIFE HABITAT ASSESSMENT

Definitions

Ecosite – Vegetation community type determined using the Ecological Land Classification (ELC) System for Southern Ontario (Lee et al., 1998)

SWH – Significant Wildlife Habitat

Candidate SWH – Criteria which an area must satisfy in order to potentially qualify as SWH. For areas identified as potential SWH, further studies should be conducted to confirm whether it is SWH

Presence of SWH in Study Area – Evaluation of whether the SWH type is present within the study area. ‘Absent’ indicates that no part of the study area satisfies the criteria for that SWH; ‘Candidate’ indicates that a portion of the study area satisfies the criteria for Candidate SWH; ‘Confirmed’ indicates that a portion of the study area satisfies the criteria for that SWH type.

Table 1 – Candidate SWH Screening

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
Seasonal Concentration Areas of Animals				
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck, Northern Pintail, Gadwall, Blue-winged Teal, Green-winged Teal, American Wigeon, Northern Shoveler, Tundra Swan	<u>Cultural Meadow</u> – CUM1 <u>Cultural Thicket</u> – CUT1 or THD Plus, evidence of annual spring flooding from meltwater or run-off within these Ecosites.	Candidate SWH Criteria <ul style="list-style-type: none"> Fields with sheet water during Spring (mid-March to May). Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have Spring sheet water. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> 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”. Any mixed species aggregations of 100 or more individuals required. The area of the flooded field ecosite habitat plus a 100-300 m radius buffer dependent on local site conditions and adjacent land use is the significant wildlife habitat. Annual 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). 	UNLIKELY – Fields containing sheet water during in spring are unlikely to be present.
Waterfowl Stopover and Staging Areas (Aquatic)	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Redhead Ruddy Duck, Red-breasted Merganser, Brant, Canvasback, Ruddy Duck	<u>Shallow Marsh</u> – MAS1, MAS2, MAS3 <u>Shallow Water</u> – SAS1, SAM1, SAF1 <u>Swamp</u> – SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	Candidate SWH Criteria <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). Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Aggregations of 100 or more individuals of listed species for 7 days, results in >700 waterfowl use days. Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. The combined area of the ELC ecosites and a 100-m radius area is the SWH. Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. 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). 	ABSENT – Although Etobicoke Creek traverses the eastern edge of the study area, most of this portion of the creek flows through a concrete channel unsuitable for waterfowl stopover and staging.
Shorebird Migratory Stopover Area	Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden- Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird’s Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy, Turnstone, Sanderling, Dunlin	<u>Beach/Bar</u> – BB01, BB02, BBS1, BBS2, BBT1, BBT2 <u>Sand Dune</u> – SD01, SDS2, SDT1 <u>Meadow Marsh</u> – MAM1, MAM2, MAM3, MAM4, MAM5	Candidate SWH Criteria <ul style="list-style-type: none"> Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great 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 October. Stormwater retention ponds and sewage lagoons are not considered SWH. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of 3 or more of listed species and >1000 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 (<24 hrs.) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. The area of significant shorebird habitat includes the mapped ELC ecosites plus a 100-m radius area. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. 	ABSENT – No substantial shorelines are present in the study area or adjacent lands.
Raptor Wintering Area	Rough-legged Hawk, Red-tailed Hawk, Northern Harrier, American Kestrel, Snowy Owl <u>Special Concern:</u> Short-eared Owl, Bald Eagle	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; <u>Forest</u> – FOD, FOM, FOC <u>Upland (Cultural)</u> – CUM, CUT, THD, CUS, CUW. <u>Bald Eagle:</u> Forest/Swamp series on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area). <u>Forest</u> – FOD, FOM, FOC	Candidate SWH Criteria <ul style="list-style-type: none"> The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites need to be >20 ha with a combination of forest and upland Least disturbed sites, idle/fallow or lightly grazed field/meadow with adjacent woodlands. Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle Sites have open water and large trees and snags available for roosting. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> One or more Short-eared Owls; One or more Bald Eagles or; at least 10 individuals and two spp. of the listed hawk/owl spp. To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. The habitat for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. 	ABSENT – Large forested and open combination habitats is not present in the study area or adjacent lands.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
		<u>Swamp</u> – SWD, SWM or SWC	<ul style="list-style-type: none"> Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. 	
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	<p><u>Crevice and Cave</u> – CCR1, CCR2, CCA1, CCA2</p> <p><u>Note:</u> buildings are not considered to be SWH.</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> Hibernacula may be found in abandoned caves, horizontal mine shafts (adits), abandoned underground foundations and areas of limestone bedrock with solution channels known as Karsts. Active mine sites should not be considered as SWH. The locations and site characteristics of bat hibernacula are relatively poorly known. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> All sites with confirmed hibernating bats are SWH. The area includes 200-m radius around the entrance of the hibernaculum for most developments and 1000-m for wind farms. Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Guideline for Wind Power Projects Potential Impacts to Bats and Bat Habitats”. 	ABSENT – No caves, mine shafts, underground foundations or other suitable structures are present in the study area or adjacent lands.
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	<p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC ecosites in ELC community Series: <u>Forest</u> – FOD, FOM <u>Swamp</u> – SWD, SWM</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Maternity roosts are not found in caves and mines in Ontario. Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25 cm dbh) wildlife trees. Female Bats prefer wildlife trees (snags) in early stages of decay class 1 -3 or classes 1 or 2. Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees. 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. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> Maternity colonies with confirmed use by: <ul style="list-style-type: none"> >10 Big Brown Bats >5 Adult female Silver-haired Bats The area of the habitat includes the entire woodland or the forest stand ELC Ecosite containing the maternity colonies. Evaluation methods for maternity colonies should be conducted following methods outlined in the “Guideline for Wind Power Projects Potential Impacts to Bats and Bat Habitats”. 	CANDIDATE- All woodlands in the study area have potential to support maternity roosting trees. Several potential snag trees as well as Maple and Oak species were observed within the woodlands in the adjacent lands. Proposed works are not anticipated to impact these features.
Turtle Wintering Areas	Midland Painted Turtle <u>Special Concern:</u> Northern Map Turtle Snapping Turtle	<p>Snapping and Midland Painted Turtles <u>Swamp</u> – SW <u>Marsh</u> – MA <u>Open Water</u> – OA <u>Shallow Water</u> – SA <u>Open Fen</u> – FEO <u>Open Bog</u> – BOO</p> <p>Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> 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. Over-wintering sites are permanent waterbodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Man made storage ponds such as sewage lagoons or storm water ponds should not be considered SWH. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> Presence of 5 or more over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. The 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) of turtles on warm, sunny days during the fall (Sep. – Oct) or spring (Mar. - April). Congregation of turtles is more common where wintering areas are limited and therefore significant. 	UNLIKELY – Although Etobicoke Creek traverses the eastern edge of the study area, most of this portion of the creek flows through a concrete channel unsuitable for turtle wintering.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
Reptile Hibernaculum	Eastern Gartersnake, Northern Watersnake, Northern Red-bellied Snake, Northern Brownsnake, Smooth Green Snake, Northern Ring-necked Snake <u>Special Concern:</u> Milksnake, Eastern Ribbonsnake	Habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.	Candidate SWH Criteria <ul style="list-style-type: none"> 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. 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. Confirmed SWH Criteria (Field Studies confirm): Studies confirming: <ul style="list-style-type: none"> Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. Congregations of a minimum of five individuals of a snake sp. or; 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). Note: If there are Special Concern species present then the site is SWH. Note: 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. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. As such, the feature in which the hibernacula is located plus a 30-m radius buffer is the SWH. Presence of any active hibernaculum for skink is significant. The ELC Ecosite polygon containing the skink hibernacula is the SWH. 	Candidate- Reptile hibernacula are difficult to confirm due to their possibility of occurrence in several habitats and seasonal nature of snake congregations. Reptile hibernacula will be assumed present as most habitat within the study area is suitable for hibernacula.
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, Northern Rough – winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies).	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: <u>Cultural Meadow</u> – CUM1 <u>Cultural Thicket</u> – CUT1, THD <u>Cultural Savannah</u> – CUS1 <u>Bluff</u> – BLO1, BLS1, BLT1 <u>Cliff</u> – CLO1, CLS1, CLT1	Candidate SWH Criteria <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 area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, and soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8 or more cliff swallow pairs or 50 bank swallow pairs and rough-winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. Field surveys to observe and count swallow nests are to be completed during the breeding season (May-July). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. 	ABSENT – No suitable banks or cliffs are present in the study area or adjacent lands.
Colonially – Nesting Bird Breeding Habitat (Trees/Shrubs)	Great Blue Heron, Black-crowned Night-Heron, Great Egret, Green Heron	<u>Swamp</u> – SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7 <u>Fen</u> – FET1	Candidate SWH Criteria <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 used. Most nests in trees are 11 to 15 m from ground, near the top of the tree. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of 5 or more active nests of Great Blue Heron. The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0 ha with a colony is the SWH. Confirmation of active heronries must 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 eggshells. 	ABSENT – There are no suitable wetlands that may support heronries within the study area or adjacent lands.
Colonially – Nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer’s Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer’s Blackbird). <u>Meadow Marsh</u> – MAM1-6 <u>Shallow Marsh</u> – MAS1-3 <u>Cultural Meadow</u> – CUM <u>Cultural Thicket</u> – CUT, THD <u>Cultural Savannah</u> – CUS	Candidate SWH Criteria <ul style="list-style-type: none"> Nesting colonies of gulls and terns are on islands or peninsulas (natural or artificial) associated with open water or in marshy areas, lakes or large rivers (two-lined on a 1: 50,000 NTS map). Brewers Blackbird colonies are found loosely on the ground or in low bushes in close proximity to streams and irrigation ditches within farmlands. Confirmed SWH Criteria (Field Studies confirm): <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 150 m area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0 ha with a colony is the SWH. Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. 	ABSENT – Suitable habitat is not present in the study area or adjacent lands.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
Migratory Butterfly Stopover Areas	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 and Forest <u>Cultural Meadow</u> – CUM <u>Cultural Thicket</u> – CUT, THD <u>Cultural Savannah</u> – CUS <u>Forest</u> : FOC, FOD, FOM <u>Cultural Plantation</u> – CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	Candidate SWH Criteria <ul style="list-style-type: none"> A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario. 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. 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. 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. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). 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, significant variation can occur between years and multiple years of sampling should occur. MUD of >5000 or >3000 with the presence of Painted Ladies or White Admiral's is to be considered significant. 	ABSENT – The study area is not located within 5 km of Lake Erie and is therefore not eligible to be significant migratory butterfly stopover habitat.
Landbird Migratory Stopover Areas	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1 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; <u>Forest</u> – FOC, FOM, FOD <u>Swamp</u> – SWC, SWM, SWD	Candidate SWH Criteria <ul style="list-style-type: none"> Woodlots need to be >5 ha in size and within 5 km of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5 ha can be considered for this habitat. If multiple are located along the shoreline those woodlands <2km from Lake Ontario are more significant. Sites have a variety of habitats; forest, grassland and wetland complexes. The largest sites are more significant. Woodlots and forest fragments are important habitats to migrating birds, these features located along the bank and located within 5km of Lake Erie and Ontario are Candidate SWH. Confirmed SWH Criteria (Field 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. 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. 	ABSENT – The study area is not located within 5 km of Lake Erie and is therefore not eligible to be significant landbird migratory stopover habitat.
Deer Winter Congregation Areas	White-tailed Deer	All Forested Ecosites with these ELC Community Series; <u>Forest</u> – FOC, FOM, FOD <u>Swamp</u> – SWC, SWM, SWD Conifer plantations much smaller than 50 ha may also be used.	Candidate SWH Criteria <ul style="list-style-type: none"> Woodlots need to be >100 ha in size. Or if woodlots are rare in a planning area woodlots > 50 ha. 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. Large woodlots >100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha Woodlots with high densities of deer due to artificial feeding are not significant. Confirmed SWH Criteria <ul style="list-style-type: none"> Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. Studies should be completed during winter (Jan/Feb) when >20 cm of snow is on the ground using aerial survey techniques, ground or road surveys or a pellet count deer density survey. 	ABSENT – MNRF did not indicate that any deer winter congregation areas are present in the study area or adjacent lands. Furthermore, there are no large woodlots within the study area or adjacent lands.
Rare Vegetation Communities				
Cliffs and Talus Slopes	N/A	Any ELC Ecosite within Community Series: <u>Talus</u> – TAO, TAS, TAT <u>Cliff</u> – CLO, CLS, CLT	Candidate SWH Criteria <ul style="list-style-type: none"> A Cliff is vertical to near vertical bedrock >3 m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris. <ul style="list-style-type: none"> Most cliff and talus slopes occur along the Niagara Escarpment. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes. 	ABSENT – None of the listed Ecosites are present in the study area or adjacent lands.
Sand Barren	N/A	<u>Sand Barren</u> – SB01, SBS1, SBT1	Candidate SWH Criteria <ul style="list-style-type: none"> 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%. Confirmed SWH Criteria (Field Studies confirm):	ABSENT – None of the listed Ecosites are present in the study area or adjacent lands.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
			<ul style="list-style-type: none"> • A sand barren area greater than > 0.5 ha in size. • Sand Barrens containing any characteristic plant species should be considered significant. • ELC Ecosite Area for the sand barren is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). 	
Alvar	<ul style="list-style-type: none"> • <i>Carex crawei</i> • <i>Panicum philadelphicum</i> • <i>Eleocharis compressa</i> • <i>Scutellaria parvula</i> • <i>Trichostema brachiatum</i> 	<p><u>Alvar</u> – ALO1, ALS1, ALT1 <u>Coniferous Forest</u> – FOC1, FOC2 <u>Cultural Meadow</u> – CUM2 <u>Cultural Savannah</u> – CUS2 <u>Cultural Thicket</u> – CUT2-1 <u>Cultural Woodland</u> – CUW2</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • 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 may be 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 animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • An Alvar site > 0.5 ha in size. • Field studies identify one or more of the 6E Plant Indicator species • Site must not be dominated by exotic or introduced species (<50%). The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. 	ABSENT – None of the listed Ecosites or indicator species are present in the study area or adjacent lands.
Old Growth Forest	N/A	<p><u>Forest</u> – FOD, FOC, FOM <u>Swamp</u> – SWD, SWC, SWM</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • Old Growth forests are characterized by exhibiting the greatest number of old-growth characteristics, such as mature forest with large trees that has been undisturbed. 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. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • Stands 30 ha or greater in size or with at least 10 ha interior habitat assuming 100-m buffer at edge of forest. • Field Studies will determine: • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat. • The stand will have experienced no recognizable forestry activities. • The area of Forest Ecosites combined to make up the stand is the SWH. 	ABSENT – Woodlands with trees older than 140 years are not likely present within the study area or adjacent lands. Furthermore, woodlands are smaller than 30 ha.
Savannah	N/A	<p><u>Tallgrass Savannah</u> – TPS1, TPS2 <u>Tallgrass Woodland</u> – TPW1, TPW2 <u>Cultural Savannah</u> – CUS2</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • A Savannah is related to tallgrass prairie, but includes trees, which vary from 25 – 60% canopy cover. The open areas between the trees are dominated by prairie species, while forest species are found beneath the tree canopy. • 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). <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • No minimum size to site though remnant sites such as railway right of ways are not considered to be SWH. • Site must be restored or a natural site. • Field studies confirm one or more of the Savannah indicator species listed in SWHTG Appendix N should be present. • Note: Savannah plant spp. list from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species. 	ABSENT – None of the listed Ecosites are present in the study area or adjacent lands.
Tallgrass Prairie	N/A	<p><u>Open Tallgrass Prairie</u> – TPO1, TPO2</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • Tallgrass Prairie is an open vegetation with less than <25% tree cover, and dominated by prairie species, including grasses. • 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). <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • No minimum size to site. • Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. • Field studies confirm one or more of the Tallgrass Prairie Indicator Species listed (used Eco-Region 7E in Appendix N) is a SWH. • Area of the ELC Ecosite is the SWH. • Site must not be dominated (e.g. <50%) by exotic or introduced species. 	ABSENT – None of the listed Ecosites are present in the study area or adjacent lands.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
Other Rare Vegetation Communities	N/A	<p>S1 – Extremely rare – usually 5 or fewer occurrences in the province, or very few remaining hectares.</p> <p>S2 – Very rare – usually between 5 and 20 occurrences in the province, or few remaining hectares.</p> <p>S3 – Rare to uncommon – usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.</p>	<ul style="list-style-type: none"> • ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M. • The OMNRF/NHIC will have up to date listing for rare vegetation communities. • Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of the SWHTG. • Area of the ELC vegetation type polygon is the SWH. 	ABSENT – No rare vegetation communities are present in the study area or adjacent lands.
Specialized Habitat for Wildlife				
Waterfowl Nesting Area	American Black Duck, Northern Pintail Northern Shoveler Gadwall, Blue-winged Teal, Green-winged Teal Wood Duck, Hooded Merganser, Mallard	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH.</p> <p>Shallow Marsh – MAS1, MAS2, MAS3 Shallow Water – SAS1, SAM1, SAF1 Meadow Marsh – MAM1, MAM2, MAM3, MAM4, MAM5, MAM6 Swamp – SWT1, SWT2, SWD1, SWD2, SWD3, SWD4</p> <p>Note: includes adjacency to Provincially Significant Wetlands.</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • A waterfowl nesting area extends 120 m from a wetland (>0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. • Wood Ducks, and Hooded Mergansers utilize large diameter trees (>40 cm) in woodlands for cavity nest sites. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • 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”. • 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 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. 	ABSENT – Candidate wetlands are not present in the study area or adjacent lands.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey <u>Special Concern Species</u> Bald Eagle	<p>Forest – FOD, FOM, FOC Swamp – SWD, SWM, SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands).</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • Nests are associated with lakes, ponds, rivers or wetlands along treed shorelines, islands, or on structures over water. • Osprey nests are usually at the top of a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree’s canopy. • Nests located on man-made objects such as telephone or hydro poles will not normally be considered as SWH, however the MNRF District retains discretion regarding significance of constructed nesting platforms. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • One or more active Osprey or Bald Eagle nests in an area. • 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 SWH. • For an Osprey, the active nest and a 300-m radius around the nest or the contiguous woodland stand is the SWH, maintaining large undisturbed shorelines with large trees within this area is important. • For Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat 400-800 m is dependant on the site lines from the nest to the development and inclusion of perching and foraging habitat. • To be significant the site must be used annually. When found inactive the site must be known to be inactive for >= 3 years or suspected of not being used for > 5 years before being considered not significant. • Observational studies to determine nest site use. Perching sites and foraging areas need to be done from early March to mid August. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines or Wind Power Projects”. 	ABSENT – Osprey or Bald Eagle nests are unlikely to be present in the study area or within 800 m of the study area.
Woodland Raptor Nesting Habitat	Northern Goshawk Cooper’s Hawk Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk	<p>May be found in all forested ELC Ecosites. May also be found in:</p> <p>Swamp – SWD, SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands) SWM Coniferous Plantations – CUP3</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> • All natural or conifer plantation woodland/forest stands >30 ha with 4 ha of interior habitat. • 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 may be in close proximity to old nest. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> • Presence of 1 or more occupied nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400-m radius around the nest or 28 ha of suitable habitat is the SWH. • Barred Owl – A 200-m radius around the nest is the SWH. 	ABSENT – Woodlands >30 ha with 4 ha of interior habitat are not present in the study area or adjacent lands.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
			<ul style="list-style-type: none"> Broad-winged Hawk, Coopers Hawk, Great Horned Owl, Red-tailed Hawk – A 100-m radius around the nest is the SWH. Sharp-Shinned Hawk – A 50-m radius around the nest is the SWH. 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. 	
Turtle Nesting Areas	Midland Painted Turtle <u>Special Concern Species:</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ecosites: <u>Shallow Marsh</u> – MAS1, MAS2, MAS3 <u>Shallow Water</u> – SAS1, SAM1, SAF1 <u>Open Bog</u> – BO01 <u>Open Fen</u> – FE01	Candidate SWH Criteria <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. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of 5 or more nesting Midland Painted Turtles is a SWH. The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. Travel routes from wetland to nesting area are to be considered within the SWH. As part of the 30-100 m habitat. One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is the recommended method. 	ABSENT – Suitable habitat is not present in the study area or adjacent lands.
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where groundwater 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.	Candidate SWH Criteria <ul style="list-style-type: none"> Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of a site with 2 or more seeps/springs should be considered SWH. The area of ELC forest ecosite containing the seeps/springs is the SWH. The protection of the function of the feature considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. 	ABSENT – No seeps or springs were identified in the study area or adjacent lands through background studies.
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog	<u>Forest</u> – FOC, FOM FOD <u>Swamp</u> – SWC SWM SWD	Candidate SWH Criteria <ul style="list-style-type: none"> Presence of a wetland, lake or pond of area >500 m2 (about 25-m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). The wetland, lake or pond and surrounding forest, would be the Candidate SWH. 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. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander or 2 or more with listed frog species with at least 20 individuals (adults, juveniles, eggs/larval masses) or 2 or more of the listed frog species with call 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/wetland. The habitat is the wetland area plus a 230m radius of woodland area. 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. 	ABSENT – No wetlands with adjacent woodlands are present within the study area or adjacent lands.
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad Spotted, Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	Typically, these wetland ecosites will be isolated (>120 m) from woodland ecosites, however, larger wetlands containing predominantly aquatic species (e.g., Bull Frog) may be adjacent to woodlands. <u>Swamp</u> – SW <u>Marsh</u> – MA <u>Fen</u> – FE <u>Bog</u> – BO <u>Open Water</u> – OA	Candidate SWH Criteria <ul style="list-style-type: none"> Wetlands > 500 m2 (about 25-m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed salamander species or 3 or more of the listed frog or toad species with at least 20 breeding individuals (adults, juveniles, eggs/larval masses) or Wetland with confirmed breeding Bullfrogs is significant. The ELC ecosite area and the shoreline are the SWH. 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 wetlands. 	ABSENT – No candidate wetlands are present within the study area or adjacent lands.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
		<u>Shallow Water</u> - SA	<ul style="list-style-type: none"> If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Amphibian Movement Corridors are to be considered (see Animal Movement Corridors). 	
Woodland Area- Sensitive Bird Breeding Habitat	Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler	All Ecosites associated with these ELC Community Series: <u>Forest</u> - FOC, FOM FOD <u>Swamp</u> - SWC SWM SWD	Candidate SWH Criteria <ul style="list-style-type: none"> Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs. old) forest stands or woodlots >30 ha. Interior forest habitat is at least 100 m from forest edge habitat. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH 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”. 	ABSENT – Interior forest habitat is not present in the study area.
Habitat for Species of Conservation Concern (SoCC)				
Marsh Breeding Bird Habitat	American Bittern, Virginia Rail Sora, Common Moorhen, American Coot Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Green Heron, Trumpeter Swan <u>Special Concern:</u> Black Tern Yellow Rail	<u>Marsh</u> - MAM1-6 <u>Shallow Water</u> - SAS1, SAM1, SAF1 <u>Fen</u> - FE01 <u>Bog</u> - BO01 For Green Heron: All SW, MA and CUM1 sites.	Candidate SWH Criteria <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. 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. Confirmed SWH Criteria (Field Studies confirm): <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. Note: any wetland with breeding of 1 or more Trumpeter Swans, Black Terns, Green Heron or Yellow Rail is SWH. Area of the ELC ecosite is the SWH. Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. 	ABSENT – Suitable wetlands are not present within the study area.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper, Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow <u>Special Concern:</u> Short-eared Owl	<u>Cultural Meadow</u> - CUM1, CUM2	Candidate SWH Criteria <ul style="list-style-type: none"> Large grasslands areas (includes natural and cultural fields and meadows) >30 ha. Field/meadow 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). 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. The indicator bird species are area sensitive requiring larger field/meadow areas than the common Field/meadow species. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more of the listed species. 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”. 	ABSENT – Suitable large grasslands are not present within the study area.
Shrub/Early Successional Bird Breeding Habitat	Indicator Spp: Brown Thrasher, Clay-coloured Sparrow, Common Spp. Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher <u>Special Concern:</u> Yellow-breasted Chat Golden-winged Warbler	<u>Cultural Thicket</u> - CUT1, CUT2, THD <u>Cultural Savannah</u> - CUS1, CUS2 <u>Cultural Woodland</u> - CUW1, CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	Candidate SWH Criteria <ul style="list-style-type: none"> Large field areas succeeding to shrub and thicket habitats >10 ha 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). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Confirmed SWH Criteria (Field Studies confirm): <ul style="list-style-type: none"> Presence of nesting or breeding of 1 indicator species and at least 2 of the common species. A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as SWH. The area of the SWH is the contiguous ELC ecosite 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”. 	ABSENT – Suitable large fields with shrub/ thicket habitat are not present within the study area.

HABITAT TYPE	INDICATOR SPECIES	ELC ECOSITE CODES	HABITAT CRITERIA	ASSESSMENT DETAILS
Terrestrial Crayfish	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crayfish or Meadow Crayfish; (<i>Cambarus Diogenes</i>)</p>	<p><u>Meadow Marsh</u> – MAM1-6 <u>Shallow Marsh</u> – MAS1-3 <u>Swamp</u> – SWD, SWT, SWM</p> <p>CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> Wet Meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marsh, mudflats, meadow, the ground can't be too moist. Can often be found far from water. Both species are semi-terrestrial burrower, which spends most of its life within burrows consisting of a network of burrows, usually the soil is not too moist so the tunnel is well formed. <p>Confirmed SWH Criteria (Field Studies confirm):</p> <ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites. The area of the ELC polygon is the SWH. Surveys should be done in adult breeding season (April to late June) and in late summer-early August in nearby temporary or permanent water for juveniles. 	<p>ABSENT – Suitable habitat is not present within the study area.</p>
<p>Special Concern and Rare Wildlife Species</p> <p>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).</p>	<p>All Special Concern and Provincially Rare (S1, S2, S3, SH) plant and animal species. Lists of these species are tracked by the NHIC</p>	<p>All plant and animal element occurrences (EOs) within a 1 km or 10 km grid.</p> <p>Older EOs were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<p>CRITERIA</p> <ul style="list-style-type: none"> 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 	<p>CANDIDATE – There are several SoCC species that may be present in the study area and are provided in Table 2.</p>
Animal Movement Corridors				
Amphibian Movement Corridors	<p>Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog</p>	<p>Corridors may be found in all ecosites associated with water.</p> <p>Corridors will be determined based on identifying the significant breeding habitat for these species.</p>	<p>Candidate SWH Criteria</p> <ul style="list-style-type: none"> Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian Breeding Habitat (Wetland) is confirmed as SWH. <p>Confirmed SWH Criteria</p> <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 sites. Corridors should consist of native vegetation, roadless area, no gaps such as fields, waterways or bodies, and undeveloped areas are most significant. Corridors should be at least 200 m wide with gaps <20 m and if following riparian area with at least 15 m of vegetation on both sides of waterway. Shorter corridors are more significant than longer corridors; however, amphibians must be able to get to and from their summer and breeding habitat. Corridors should have several layers of vegetation and should be unbroken by roads, waterways or bodies and undeveloped areas are most significant. 	<p>Absent – There may be candidate significant amphibian breeding habitats (both wetland and woodland types) outside the study area. It is possible that amphibians move between these habitats along Etobicoke Creek, however, is not a suitable amphibian corridor as the creek passes through a concrete channel with little to no vegetation along the waterway.</p>

Table 2 - SoCC Assessment

Species		SAR Status		Conservation Rank and Rarity Status						Source	Assessment	Impact Potential
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)	National (COSEWIC)	Global (G-rank)	Provincial (S-rank)	Conservation Priorities ¹	Regional Rarity Rank ²	Local Rarity Rank ³			
AMPHIBIANS												
American Bullfrog	<i>Lithobates catesbeianus</i>				G5	S4			L2	ORAA	Potential - These species may be encountered along Etobicoke Creek or in the surrounding woodland habitat present within the study area. Suitable habitat is not present within the Project limits.	UNLIKELY
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>				G5	S5			L3	ORAA		
Gray Treefrog	<i>Hyla versicolor</i>				G5	S5			L2	ORAA		
Northern Leopard Frog	<i>Rana pipiens</i>				G5	S5			L3	ORAA		
Spring Peeper	<i>Pseudacris crucifer</i>				G5	S5			L2	ORAA		
Wood Frog	<i>Rana sylvatica</i>				G5	S5			L2	ORAA		
REPTILES												
Midland Painted Turtle	<i>Chrysemys picta marginata</i>			SC	G5T5	S4			L3	ORAA	Potential - The turtle species may be encountered along Etobicoke Creek but likely only as they pass through to more suitable habitat. Red-bellied snake may be encountered in a variety of habitats as they are habitat generalists.	UNLIKELY
Red-bellied Snake	<i>Storeria occipitomaculata</i>				G5	S5			L3	ORAA		LOW
Snapping Turtle	<i>Chelydra serpentina</i>	SC, Schedule 1	SC	SC	G5	S3			L3	ORAA; iNaturalist		UNLIKELY
BIRDS												
Eastern Wood-Pewee	<i>Contopus virens</i>	SC, Schedule 1	SC	SC	G5	S4B	Increase		L4	OBBA; NHIC; eBird	Potential - These species may be encountered in the forested communities within the study area and adjacent lands.	UNLIKELY
INVERTEBRATES												
American Bumble Bee	<i>Bombus pensylvanicus</i>			SC	G3G4	S3S4				NHIC	Unlikely - suitable habitat was not observed within the study area or adjacent lands	UNLIKELY
Monarch	<i>Danaus plexippus</i>	SC, Schedule 1	SC	END	G4	S2N, S4B				OBA		
VASCULAR PLANTS												
Bladder Sedge	<i>Carex intumescens</i>				G5	S5		U	L4	NAI	Potential - These species may be encountered within the naturalized vegetation communities associated with Etobicoke creek and nearby woodlands within the study area and adjacent lands. Suitable habitat is not likely present within the Project limits.	UNLIKELY
Pale Touch-me-not	<i>Impatiens pallida</i>				G5	S5		U	L4	NAI		
Pin Cherry	<i>Prunus pensylvanica</i>				G5	S5		R	L4	NAI		
Three-square	<i>Schoenoplectus pungens</i>				G5	S5		U	L4	NAI		

Definitions, Acronyms and Symbols

Global G-rank
G1: Critically Imperiled (at very high risk of extinction)
G2: Imperiled (at high risk of extinction)
G3: Vulnerable (at moderate risk of extinction)
G4: Apparently Secure (Uncommon but not rare)
G5: Secure (common, widespread and abundant)
G#G#: Range Rank (range of uncertainty about the status of a taxon or ecosystem type)
GU: Unrankable (currently unrankable due to lack of information)
GNR: Unranked (global rank not yet assessed)
GNA: Not Applicable (species is not a suitable target for conservation activities)
T: Denotes that the rank applies to a subspecies or variety
B: Breeding
N: Non-breeding

Provincial S-rank
S1: Critically Imperiled (i.e. fewer than 5 occurrences in the nation and/or province)
S2: Imperiled (i.e. fewer than 20 occurrences in the nation and/or province)
S3: Vulnerable (i.e. 20-80 occurrences in the nation and/or province)
S4: Apparently Secure (uncommon, but not rare in the nation and/or province)
S5: Secure (common, widespread and abundant in the nation and/or province)
SNA: Not Applicable (species is not a suitable target for conservation activities)
SHB: Breeding is not confirmed in Ontario
S#S#: Range Rank (range of uncertainty about the status of the species or community)
S#?: Rank is Uncertain
S?: Not Ranked Yet
B: Breeding migrants/vagrants
N: Non-breeding migrants/vagrants

Conservation Priorities¹
Recovery Objective - Species at Risk
Increase - Population in decline
Maintain Current - Appears to be stable or increasing
Assess/ Maintain - Monitoring data was insufficient to propose an objective

Regional Rarity (Carolinian Canada)²
C: Common
U: Uncommon
R: Rare
X: No Status

Local Rarity (TRCA)³
L1: Species of Regional Conservation Concern (regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts)
L2: Species of Regional Conservation Concern (somewhat more abundant and generally slightly less sensitive than L1 species)
L3: Species of Regional Conservation Concern (generally less sensitive and more abundant than L1 and L2 ranked species)
L4: Species of Urban Concern (occur throughout the region but could show declines if urban impacts are not mitigated effectively)
L5: Species that are considered secure throughout the region
L+: Introduced species (not native to the Toronto region)
LX: Extirpated species (species not recorded in the region in the past 10 years)
LS: Sporadic breeder (species not recorded in the region in the past 10 years)
L+?: Species is probably introduced

COSEWIC: Committee on the Status of Endangered Wildlife in Canada
ESA: Endangered Species Act
SARA: Species at Risk Act
SARO: Species at Risk in Ontario

SARA or ESA designation
END - Endangered
THR - Threatened
SC - Special Concern
NAR - Not at Risk

References / Sources

- 1 - Bird Conservation Strategy for Bird Conservation Region (BCR) 13 in Ontario Region: Lower Great Lakes/St. Lawrence Plain (Environment Canada 2014)
- 2 - List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E) (Oldham, 2017).
- 3 - Flora Species for the TRCA Jurisdiction (TRCA, 2019) & Fauna Ranks and Scores for the TRCA Jurisdiction (TRCA, 2019).
- 4 - NHIC - Natural Heritage Information Centre (NHIC) Make-a-map Tool (Ministry of Natural Resources and Forestry, 2021)
- 5 - iNaturalist website available online at <https://www.inaturalist.org/> (all projects searched, including NHIC Rare Species of Ontario and Herps of Ontario Projects).
- 6 - eBird website available online at <https://ebird.org/map/>
- 7 - ORAA - Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019)
- 8 - OBBA - Ontario Breeding Bird Atlas (Bird Studies Canada, 2005)
- 9 - AMO - Atlas of the Mammals of Ontario (Dobbyn, 1994)
- 10 - OBA - Ontario Butterfly Atlas (Macnaughton et al., 2019)
- 11 - NAI - Main - Vodden East Natural Area Inventory (TRCA, 2013)
- 12 - MECP - Ministry of Environment, Conservation and Parks email correspondence (2021)

APPENDIX G

(SPECIES AT RISK SCREENING)

SAR Assessment							
Species		SAR Status		Source	Habitat	Assessment	Impact Potential
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)				
AMPHIBIANS							
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END, Schedule 1	END	ORAA	They prefer deciduous forests where they live in moist, loose soil or under leaf litter.	Unlikely - ORAA has recent records of this species from 2018 within the 10km ² map squares (17PJ03) that overlap the study area however potential habitat for this species is unlikely to be present within the study area or adjacent lands.	UNLIKELY
MAMMALS							
Eastern Small-footed Myotis	<i>Myotis leibii</i>		END	AMO	Roosts in caves, mine shafts, crevices or buildings that are in or near woodland; hibernates in cold dry caves or mines; maternity colonies in caves or buildings; hunts in forests (MNRF, 2000)	Potential - All woodlands within the study area and adjacent lands have the potential to provide habitat for bats. Several potential snag trees and Maple and Oak trees were observed within these woodlands. Maple and Oak trees were also documented within the Project limits however no leaf clusters were observed during August 2021 field investigations. Proposed works are not anticipated to impact the woodlands.	LOW
Little Brown Myotis	<i>Myotis lucifugus</i>	END, Schedule 1	END	AMO	Uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges (MNRF, 2000). Roosts in crevices and cavities in dead or dying trees, or sometimes beneath naturally loose bark on species like Shagbark Hickory (MNRF, 2017).		
Northern Myotis	<i>Myotis septentrionalis</i>	END, Schedule 1	END	AMO	Hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, manmade structures but prefers hollow trees or under loose bark; hunts within forests, below canopy (MNRF, 2000)		
Tricolored Bat	<i>Perimyotis subflavus</i>	END, Schedule 1	END	AMO	Open woods near water; roosts in trees, cliff crevices, buildings or caves; hibernates in damp, draft-free, warm caves, mines, or rock crevices (MNRF, 2000). Prefers roosts in foliage within or below the canopy, mostly in oak species but also sometimes in maples. Clusters of dead or dying leaves on live branches are preferred (MNRF, 2017).		
BIRDS							
Bank Swallow	<i>Riparia riparia</i>	THR, Schedule 1	THR	OBBA	Nest in natural and human-made setting where there are vertical faces in silt and sand deposits, often on banks of rivers or lakes.	Unlikely - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03). E-bird did not have any recent records of this species in the study area or adjacent lands. Suitable banks or bluffs are not present within the study area or adjacent lands.	UNLIKELY
Barn Swallow	<i>Hirundo rustica</i>	THR, Schedule 1	THR	OBBA	Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts. They prefer unpainted, rough-cut wood as mud does not adhere as well to smooth surfaces.	Potential - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03). E-bird did not have any recent records of this species in the study area. All bridge, concrete culvert structures and buildings with suitable overhangs may provide suitable nesting habitat within the study area. This species nor its nests were observed within the study area or adjacent lands during August 2021 field investigations. This species nor its habitat is anticipated to be impacted by the proposed works.	UNLIKELY
Bobolink	<i>Dolichonyx oryzivorus</i>	THR, Schedule 1	THR	OBBA	Tall grasslands, such as pastures and hayfields or shrubby overgrown fields or other open areas.	Unlikely - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03). E-bird did not have any recent records of this species in the study area. Habitat for this species is not considered present. There are no meadow communities present within the study area or adjacent lands that would be suitable for this species.	UNLIKELY
Chimney Swift	<i>Chaetura pelagica</i>	THR, Schedule 1	THR	OBBA	Urban settlements in chimneys or other manmade structures.	Potential - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03). This species nests in manmade structures, which may include bridges. All chimneys and bridges within the study area and adjacent lands may provide habitat for this species. This species nor its habitat is anticipated to be impacted by the proposed works.	UNLIKELY
Common Nighthawk	<i>Chordeiles minor</i>	THR, Schedule 1	SC	OBBA	Preferred nesting habitats include bare ground in open areas in association with clearings such as fields, clear cuts, ponds and wetlands that are used for aerial foraging.	Potential - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03). Flat top rooftops within the study area and adjacent lands may provide habitat for this species. This species nor its habitat is anticipated to be impacted by the proposed works.	UNLIKELY

Species		SAR Status		Source	Habitat	Assessment	Impact Potential
Common Name	Scientific Name	National (SARA)	Provincial (ESA, 2007)				
Eastern Meadowlark	<i>Sturnella magna</i>	THR, Schedule 1	THR	OBBA; NHIC	Tall grasslands, such as pastures and hayfields or shrubby overgrown fields or other open areas.	Unlikely - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03) and NHIC has records within the 1km ² map squares (17NJ9937, 17NJ9938 and 17PJ0037) . E-bird did not have any recent records of this species in the study area. Habitat for this species is not considered present. There are no meadow communities present within the study area or adjacent lands that would be suitable for this species.	UNLIKELY
Eastern Whip-poor-will	<i>Antrastomus vociferus</i>	THR, Schedule 1	THR	OBBA	Prefers a mix of forested and open areas, such as open woodlands, savannahs or openings within mature forests. This species uses open areas to forage and forested areas for roosting and nesting.	Unlikely - OBBA has records of this species from within the 10km ² map square (17NJ93). E-bird did not have any recent records of this species in the study area. Habitat for this species is not considered present. The woodland communities within the study area or adjacent lands are not considered suitable for this species.	UNLIKELY
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR, Schedule 1	SC	eBird	Prefers to nest in open areas with young shrubs surrounded by mature forest, but may also nest in areas that have been recently disturbed such as field edges, utility right-of-ways or logged areas	Unlikely - E-bird has a 2006 record of this species northwest of the study area. Habitat for this species is not considered present. The woodland communities within the study area or adjacent lands are not considered suitable for this species.	UNLIKELY
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	THR, Schedule 1	END	OBBA	Inhabits open woodlands and woodland edges. Often found in parks, including cemeteries and golf courses. Prefer dead trees for nesting and perching.	Potential - OBBA has records of this species from within the 10km ² map square (17NJ93). E-bird did not have any recent records of this species in the study area. There are woodlands and parks within the study area and adjacent lands that may provide suitable habitat for this species. This species was not observed during August 2021 field investigations.	LOW
Wood Thrush	<i>Hylocichla mustelina</i>	THR, Schedule 1	SC	OBBA; eBird	Prefers moist deciduous or mixed second-growth forests with dense undergrowth and tall trees for perching (COSEWIC, 2012).	Potential - OBBA has records of this species from within the 10km ² map squares (17NJ93 and 17PJ03) and e-bird has a 2006 record of this species northwest of the study area. The woodlands in the study area and adjacent lands may provide suitable habitat, however this species and its habitat is not anticipated to be impacted by the proposed works.	UNLIKELY
FISH							
Redside Dace	<i>Clinostomus elongatus</i>	END, Schedule 1	END	NHIC	Pools and slow-moving coolwater clear streams composed of rock, gravel or sand substrate, where shrubs and trees provide overhead cover.	Unlikely - NHIC (1985) has records of this species within the 1km ² map squares (17NJ9937, 17NJ9938 and 17PJ0037) however are likely historical. Etobicoke Creek may provide suitable habitat for this species however impacts to the creek are not expected.	UNLIKELY
VASCULAR PLANTS							
Butternut	<i>Juglans cinerea</i>	END, Schedule 1	END	MECP	Found in a variety of habitats and conditions, including deciduous and mixed upland and lowland forests as well as streambanks with well-drained soils.	Potential - Consultation with the MECP provided that records of Butternut are present near the study area. The woodlands associated with Etobicoke Creek may provide suitable habitat, however no Butternut were documented within the study area in August 2021 field investigations.	UNLIKELY

Definitions, Acronyms and Symbols

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SARO: Species at Risk in Ontario

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Sources

1 - NHIC - Natural Heritage Information Centre (NHIC) Make-a-map Tool (Ministry of Natural Resources and Forestry, 2021)

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7 - OBA - Ontario Butterfly Atlas (Macnaughton et al., 2019)

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APPENDIX H

(PHOTOGRAPHIC LOG)



Photo 1 (left): Fresh-Moist Black Walnut Deciduous Forest (FOD7-4) community west of Ken Whillans Drive, facing west.
Photo 2 (right): Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3) community east of Ken Whillans Drive along Etobicoke Creek, facing north. Large mature Willow (DBH >100) present that may provide bat habitat.



Photo 3 (left): Etobicoke Creek surrounded by FOD7-3 just west of Church St E bridge where naturalized channel enters concrete channel, facing northwest.
Photo 4 (right): Church St E bridge over Etobicoke Creek concrete channel, facing southeast.

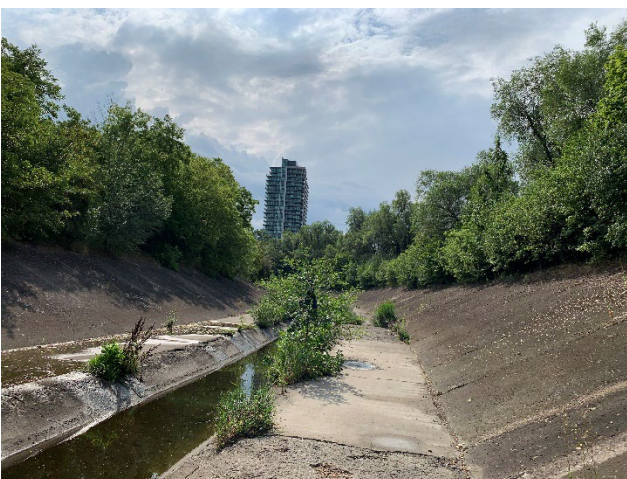


Photo 5 (left): Mineral Cultural Woodland (CUW1) and Fresh-Moist White Elm Lowland Deciduous Forest (FOD7-1) communities on either side of Etobicoke Creek, facing southeast.
Photo 6 (right): FOD7-1 on northern edge of Rosalea Park, facing east.



Photo 7 (left): Constructed Green Lands – Parkland (CGL_2) community within Rosalea Park, facing southeast.
Photo 8 (right): Ken Whillans Drive and Church Street E intersection, facing northwest.



Photo 9 (left): CGL_2 community and Brampton Tennis Club facility, facing southwest.
Photo 10 (right): Union Street and Nelson Street E intersection, facing south.



Photo 11 (left): Planted White Spruce southwest of the Brampton Tennis Club, facing north.
Photo 12 (right): Cultural Hedgerow (CUH) along eastern edge of the Brampton Tennis Club, facing west.

Ken Whillans Drive Extension Natural Environmental Assessment

Existing Conditions and Impact Assessment



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