



UNITED LANDS

# Environmental Impact Study

1667 Sunningdale Bend, Mississauga, Ontario



December 2023 – 20-2878

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# Introduction

Dillon Consulting Limited (Dillon) was retained by United Lands to complete an Environmental Impact Study (EIS) for the proposed residential development located at 890 Meadow Wood Road, in the City of Mississauga, Ontario (herein referred to as the “Project Location”). Areas within 120 m of the Project Location have been shown as the “Study Area” (**Figure 1**).

The purpose of the EIS is to document existing conditions of the natural environment; determine the potential limits of development; evaluate the potential for environmental impacts associated with the proposed development; and recommend mitigation, restoration, and enhancement measures to preserve and/or restore natural features. The EIS has been prepared in general accordance with the Credit Valley Conservation (CVC) Environmental Impact Study Terms of Reference (2008), following the Terms of Reference (TOR) established in consultation with the CVC and the City of Mississauga (the City) and agreed to through correspondence between Dillon, the CVC and the City on July 7, 2020 (see **Appendix A**).










# 1667 SUNNINGDALE BEND

## ENVIRONMENTAL IMPACT STUDY

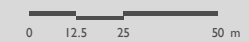
### PROJECT LOCATION

FIGURE 1

-  Project Location
-  Study Area (120m)
-  Road
-  Watercourse
-  Top of Bank (Staked by CVCA October 15, 2007)
-  Natural Area Limit (November 6, 2019)
-  MNR Wooded Area



SCALE 1:2,000



MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNR

MAP CREATED BY: LK  
MAP CHECKED BY: WM  
MAP PROJECTION: NAD 1983 UTM Zone 17N

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PROJECT: 20-2878  
STATUS: DRAFT  
DATE: 2023-02-03

Source: Esri, Garmin, Bing, DeLorme, GeoEye, IGN, Aerotech, IGN, HERE, Garmin, Swire, Infmap, iQOO, Swire, FAO, NPS, NGA, OpenStreetMap contributors, and the GIS User Community

## 2.0 Background Review

### 2.1 Background Information Sources

The following sections have been prepared to identify the applicable land use planning policies related to the natural environment. Various regulatory agencies and legislative authorities have established a number of policies with the purpose of protecting ecological features and functions. **Table 1** lists the relevant policies and legislation that apply to the protection of natural heritage features within the City of Mississauga, as well as supporting guidance documents and resources consulted respective to each policy. This table also includes additional background information sources used to help identify and define natural heritage features within the province of Ontario, and Ecoregion 7E specifically. This section is not intended to constitute a complete land use planning assessment as it focuses on the relevant environmental policies and regulations. The documents referenced below should be read in their entirety for a more detailed understanding of the land use policy framework to the Study Area, defined as areas within 120 m of the Project Location (**Figure 1**). Relevant planning policy schedules and maps for the Study Area are provided in **Appendix B** for reference.

**Table 1: Policies, Legislation and Background Resources Searched**

Source	Record Reviewed/Requested
Federal	
Fisheries Act, 2019	<ul style="list-style-type: none"> <li>Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Mapping (DFO, 2020)</li> </ul>
Provincial	
Provincial Policy Statement, 2020	<ul style="list-style-type: none"> <li>Policies within Section 2.1 related to natural heritage features</li> <li>Policies within Section 2.2 related to water</li> </ul>
Endangered Species Act, 2007	<ul style="list-style-type: none"> <li>MNRF Species at Risk in Ontario (SARO) List (<i>Ontario Regulation 230/08</i>)</li> </ul>
Growth Plan for the Greater Golden Horseshoe, 2019	<ul style="list-style-type: none"> <li>Policies within section 2.2.2 related to built-up areas</li> </ul>
Ministry of Natural Resources and Forestry	<ul style="list-style-type: none"> <li>MNRF Natural Heritage Information Centre (NHIC) database (Square: 17PJ1119; MNRF, 2019b)</li> <li>MNRF Make a Map: Natural Heritage Areas (MNRF, 2019a)</li> <li>Natural Heritage Reference Manual (MNRF, 2010)</li> <li>MNRF Significant Wildlife Habitat Technical Guide (MNRF, 2000)</li> <li>Significant Wildlife Habitat Ecoregion 7E Criteria Schedules (MNRF, 2015)</li> </ul>
Credit Valley Conservation Authority Conservation Authorities Act, 1990: O.Reg. 160/06	<ul style="list-style-type: none"> <li>Final TOR circulated to the City and CVC (July 7, 2020; <b>Appendix A</b>)</li> <li>CVC Regulated Area Mapping</li> <li>Sheridan Creek Watershed Study and Impact Monitoring (2011).</li> <li>Approved Updated Assessment Report: Credit Valley Source Protection Area – Watershed Characterization (2015).</li> </ul>

Source	Record Reviewed/Requested
	<ul style="list-style-type: none"> <li>• Credit Valley Conservation Watershed Report Card (2018)</li> <li>• Don River Watershed Report Card (2018)</li> </ul>
Bedrock Geology of Ontario, Southern Sheet (Ontario Geological Survey, 1991)	<ul style="list-style-type: none"> <li>• Reviewed bedrock geology of Ontario, southern sheet</li> </ul>
Physiography of Southern Ontario (Chapman and Putnam, 1984)	<ul style="list-style-type: none"> <li>• Reviewed the physiography</li> </ul>
Municipal (Single-tier)	
City of Mississauga	<ul style="list-style-type: none"> <li>• Official Plan (Consolidated November 22, 2019)</li> <li>• Schedules 3 and 10 (Figure XX)</li> <li>• Private Tree Protection Bylaw 254-12</li> </ul>
Wildlife Atlases	
Wildlife Atlases	<ul style="list-style-type: none"> <li>• Ontario Breeding Bird Atlas (Square 17PJ23; Cadman et al., 2007)</li> <li>• Christmas Bird Count (National Audubon Society, 2018)</li> <li>• Ontario Butterfly Atlas (Square 17PJ2349; Toronto Entomologists Association, 2019)</li> <li>• Ontario Reptile and Amphibian Atlas (Square 17PJ2349, Ontario Nature, 2019)</li> <li>• Mammals of the Western Hemisphere (NatureServe, 2007)</li> </ul>

## 2.2 Policy Overview

### 2.2.1 Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS), 2020 provides overall policy direction on matters of provincial interest related to land use planning and development in Ontario. The PPS sets forth a vision for Ontario's land use planning system by managing and directing land use to achieve efficient development and land use patterns, wise use and management of resources, and protecting public health and safety. This report deals specifically with Policy 2.1: Natural Heritage, and Policy 2.2: Water, which provides for the protection and management of natural heritage and water resources, which include the following:

- Significant wetlands
- Significant coastal wetlands
- Significant woodlands
- Significant valleylands
- Significant wildlife habitat
- Significant areas of natural and scientific interest (ANSIs)
- Fish habitat
- Sensitive surface water features
- Sensitive ground water features.



The PPS defines “significant” to mean:

- In regard to wetlands, coastal wetlands and areas of natural and scientific interest, an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time;
- In regard to woodlands, an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources;
- In regard to other features and areas in policy in 2.1, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.

The PPS defines “sensitive” to mean:

- In regard to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events, including, but not limited to, water withdrawals, and additions of pollutants.

Potential significance of natural heritage features may be evaluated based on size, age, presence of rare or sensitive species, species diversity, and linkage functions, taking into consideration factors such as adjacent land use and degree of disturbance. Criteria for determining significance follow guidance outlined in the Natural Heritage Reference Manual (MNRF, 2010) and the Significant Wildlife Habitat Technical Guide Eco-Region 7E Criterion Schedules (MNRF, 2015), where applicable.

### 2.2.2 Endangered Species Act, 2007

In June 2008, the *Endangered Species Act, 2007* (ESA) came into effect in Ontario. The purpose of the ESA is to identify Species at Risk (SAR) based on the best available scientific information; to protect SAR and their habitats, to promote the recovery of SAR; and to promote stewardship activities to assist in the protection and recovery of SAR in Ontario. There are several applicable regulations under the ESA which serve to identify which species and habitat receive protection and provide direction on the current implementation of the ESA by the Ministry of Environment, Conservation and Parks (MECP).

The methods for determining and results of the potential presence of SAR and SAR habitat within the Study Area is discussed further in **Section 3.5** of this report of this report.

### 2.2.3 Growth Plan for Greater Golden Horseshoe, 2020

Pursuant to the Places to Grow Act, 2005, the Growth Plan for the Greater Golden Horseshoe was approved on June 16, 2006. The Growth Plan has been amended five times since its release in 2006. A Place to Grow: The Growth Plan for the Greater Golden Horseshoe (2020) (the Growth Plan) was

approved through an Order in Council under that Act to come into effect on May 16, 2019. It was most recently amended through an Order in Council under that Act that came into effect on August 28, 2020. This Plan replaces the Growth Plan for the Greater Golden Horseshoe, 2017 that took effect on July 1, 2017.

The Growth Plan requires the identification of water resource systems and the protection of key hydrologic features and key hydrologic areas, similar to the level of protection provided in the Greenbelt (MMAH, 2017). This provides a consistent framework for water protection across the Greater Golden Horseshoe (GGH), and builds on existing plans and policies. The Growth Plan also provides for the identification and protection of natural heritage systems in the GGH outside of the Greenbelt Area and settlement areas in order to provide consistent and long-term protection for natural heritage systems across the GGH (MMAH, 2017).

As per Schedule 4 of the Growth Plan (**Appendix B**), the Study Area is designated as “*Built-up Area*”. Policies regarding *Built-Up Areas* are listed under Section 2.2.2 of the Growth Plan, speak to minimum intensification targets for residential development under this designation.

#### 2.2.4 Credit Valley Conservation Authority (O.Reg. 160/06)

In accordance with Section 28 of the *Conservation Authorities Act* (MNR, 1990), the Credit Valley Conservation Authority (CVC) is authorized to implement and enforce the Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (O.Reg. 160/06). Section 2(1) of this Regulation lists areas within CVC’s jurisdiction where development is prohibited without proper permission from CVC. Such areas include, but are not limited to, those adjacent or close to the shoreline of inland lakes, rivers or stream valleys, hazardous lands, and wetlands.

CVC’s Regulated Area overlaps the northeastern side of the Study Area (**Appendix B**).

#### 2.2.5 City of Mississauga Official Plan, 2010

The City’s Official Plan (OP) was adopted on September 29, 2010 and partially approved by the Region of Peel in September 22, 2011, following multiple appeals. The City’s OP came into partial effect on November 14, 2012, when the OMB approved the OP with some modifications. Further amendments have been made to reflect Council approved OP Amendments up to August, 2022. The City’s OP conforms to the hierarchy of policy and legislation at the federal, provincial and regional levels.

The majority of the lands within the Project Location have been designated as Residential (Schedule 10 Land Use Designations; **Appendix B**). While the northeastern corner of the Project Location and Study Area are designated as Natural Hazard Lands (Schedule 10) associated with Rattray Coastal Marsh, a Provincially Significant Wetland (PSW; Schedule 3 Natural System; **Appendix B**). Natural Hazard Lands shown on Schedule 3, are designated as Greenlands in the City’s OP. As outlined in the OP, ‘*Greenlands are zoned to protect life and property. Uses will be limited to conservation, flood and/or erosion control, essential infrastructure and passive recreation*’.

## 2.3 Natural Heritage Overview

### 2.3.1 General Site Description

The Project Location is approximately 0.51 ha in size, and in its current state includes a disturbed residential lot with overgrown vegetation. The surrounding land uses within the Study Area are described as follows:

- North: Woodland and Tributary to Sheridan Creek;
- West: Residential homes and Sunningdale Bend;
- East: Residential homes and Meadow Wood Road; and
- South: Woodland, residential homes and Sheridan Creek.

### 2.3.2 Landforms, Soils and Surficial Geology

The Study Area lies over Upper Ordovician bedrock consisting of shale, limestone, dolostone, and siltstone (Ontario Geological Survey; Ministry of Northern Development and Mines, 1991). The physiographic landforms of the area are described as Sand Plains (Chapman and Putnam, 1984) comprising the Iroquois Plain physiographic region. A review of quaternary geology mapping of the area indicates the majority of the Study Area is underlain by Glaciolacustrine deposits (Ministry of Northern Development and Mines, 1991).

### 2.3.3 Aquatic Habitat

The Study Area is within the Credit River Watershed that drains approximately 860 square kilometers (km<sup>2</sup>), from the headwaters in Orangeville, generally southeast through 9 municipalities before draining into Lake Ontario (CTC SPC, 2015). Within the Credit River Watershed there are 22 subwatersheds that drain into the Credit River, that vary in size from 4.78 km<sup>2</sup> to 105.56 km<sup>2</sup> (CTC SPC, 2015). The Study Area is located within the Lake Ontario Shoreline West Tributaries subwatershed (33.05 km<sup>2</sup>).

#### 2.3.3.1 Fish Habitat

There are no mapped watercourses within the Project Location, however a Tributary for Sheridan Creek is located approximately 13 metres (m) to the north, within the Study Area and the Regulated Area. Sheridan Creek flows in a generally east direction towards Rattray Coastal Marsh Wetland Complex (PSW), before draining into Lake Ontario.

Review of available MNRF Aquatic Resources Area (ARA) mapping on September 23, 2020, classified the Tributary to Sheridan as having a warm water thermal regime and identified 20 fish species that are provided in **Table 2**. None of the species identified were listed as Threatened or Endangered under the ESA (2007). The majority of species (17) identified within the Tributary are listed as Common (S5) or Secure (S4) by the province; the remaining three species are considered unsuitable targets for conservation activities (SNA).

**Table 2: Fish Species within Sheridan Creek (MNRF ARA data; Effective date: 2010)**

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>2</sup>	S-Rank <sup>3</sup>
<i>Alosa pseudoharengus</i>	Alewife	---	---	SNA
<i>Dorosoma cepedianum</i>	Gizzard Shad	---	---	S4
<i>Catostomus commersoni</i>	White Sucker	---	---	S5
<i>Couesius plumbeus</i>	Lake Chub	---	---	S5
<i>Cyprinella spiloptera</i>	Spotfin Shiner	---	---	S4
<i>Cyprinus carpio</i>	Common Carp	---	---	SNA
<i>Luxilus cornutus</i>	Common Shiner	---	---	S5
<i>Nocomis micropogon</i>	River Chub	---	---	S4
<i>Notropis atherinoides</i>	Emerald Shiner	---	---	S5
<i>Pimephales notatus</i>	Bluntnose Minnow	---	---	S5
<i>Pimephales promelas</i>	Fathead Minnow	---	---	S5
<i>Rhinichthys atratulus</i>	Blacknose Dace	---	---	S5
<i>Rhinichthys cataractae</i>	Longnose Dace	---	---	S5
<i>Semotilus atromaculatus</i>	Creek Chub	---	---	S5
<i>Esox lucius</i>	Northern Pike	---	---	S5
<i>Osmerus mordax</i>	Rainbow Smelt	---	---	S5
<i>Lepomis gibbosus</i>	Pumpkinseed	---	---	S5
<i>Neogobius melanostomus</i>	Round Goby	---	---	SNA
<i>Perca flavescens</i>	Yellow Perch	---	---	S5
<i>Ameiurus nebulosus</i>	Brown Bullhead	---	---	S5

<sup>1</sup>Federal Species at Risk Act; <sup>2</sup>Ontario Endangered Species Act; <sup>3</sup>S-Rank is an indicator of commonness in the Province of Ontario. A scale between 1 and 5, with 5 being very common and 1 being least common. --- denotes no information or not applicable.

Occurrence records for Redside Dace (*Clinostomus elongatus*) were identified in online interactive mapping from the MNRF Natural Heritage Information Centre (NHIC) database (Square: 17PJ1119); however it confirmed through the TOR phase with CVC that Redside Dace are not a species of interest in this specific area.

The potential for SAR to occur within the Study Area is discussed in **Section 2.3.9**.

#### 2.3.4

#### Wetlands

Wetlands within the area are considered southern wetlands based on their location south of the northern limit of Ecoregions 5E, 6E, and 7E as shown on Figure 1 of the PPS, 2020. A review of background mapping identified Rattray Coastal Marsh (PSW) approximately 700 m southeast of the Project Location. No wetland units were identified within the Project Location or Study Area through the background review.

### 2.3.5 Woodlands

No significant woodlands were identified within the Study Area through a review of background mapping provided in the City OP, 2019, Schedule 3 Natural System (**Appendix B**). However, the LIO mapping sourced from the MNRF identifies woodland as covering the entirety of the Project Location and the adjacent lands (see **Figure 1**).

The woodland limit within the Project Location had previously been staked by the CVC on June 11, 2010 and is shown on **Figure 1**.

### 2.3.6 Valleylands

No significant valleylands were identified within the Study Area, although a Top of Bank was staked by the CVC on October 15, 2007. Valleylands are discussed further in **Section 4.4**.

### 2.3.7 Areas of Natural and Scientific Interest

Review of background mapping identified Rattray Coastal Marsh, Life Sciences Area of Natural and Science Interest (ANSI) approximately 150 m southeast of the Project Location. There were no ANSIs identified within the Study Area.

### 2.3.8 Significant Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (MNRF, 2000) defines Species of Conservation Concern (SCC) as species listed as Threatened or Endangered under the federal *Species at Risk Act, 2002* (SARA); species that are provincially rare/tracked (i.e., have a Sub-national (provincial) Rank of S1 – Critically Imperilled, S2 – Imperilled or S3 – Vulnerable) and/or are listed as Special Concern under the ESA.

A search of the NHIC database and other available wildlife atlases was conducted to identify possible occurrences of SCC within or adjacent to the Study Area. Species habitat requirements were compared with the existing habitat within the Study Area to determine the potential for species occurrence(s).

**Table 3** identifies the SCC with the potential to occur within the Study Area. Table C-1 in **Appendix C** provides a list of species with occurrence records in the area and the rationale used to determine the potential for these species and/or their habitat to occur in the Study Area.

**Table 3: Species of Conservation Concern with potential to occur within the Study Area**

SCIENTIFIC NAME	COMMON NAME	SAR A <sup>1</sup>	ESA 2	S- RANK <sup>3</sup>	INFORMATION SOURCE <sup>4</sup>
<b>BIRDS</b>					
<i>Contopus virens</i>	Eastern Wood-pewee	SC	SC	S4B	OBBA
<b>LEPIDOPTERA</b>					
<i>Danaus plexippus</i>	Monarch	SC	SC	S2N,S4B	OBA

<sup>1</sup>Federal Species at Risk Act (SC = Special Concern); <sup>2</sup>Ontario Endangered Species Act (SC = Special Concern); <sup>3</sup>Ontario SRank; S4= apparently secure; S2 = imperilled; B = Breeding; N= Nonbreeding; <sup>4</sup>Information sources include: OBBA = Ontario Breeding Bird Atlas, OBA = Ontario Butterfly Atlas.

Criteria for determining Significant Wildlife Habitat (SWH) follow the guidelines outlined in the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and the Ecoregion 7E Criteria Schedules (MNRF, 2015), where applicable. A review of the available habitat and SCC identified determined that the following candidate SWHs may be present within the Study Area:

- Seasonal Concentration Areas of Animals
  - Bat Maternity Colonies
- Specialize Habitat for Wildlife
  - Seeps and Springs
- Habitat for Species of Conservation Concern
  - Special Concern and Rare Wildlife Species (Eastern Wood-Pewee)

Field studies conducted to evaluate the presence of SCC and potential SWH are detailed in **Section 3**.

Please note that because the potential for Bat Maternity Colony habitat exists within the woodland and not within the development area, specific snag density searches were not completed as part of this EIS, although tree species and details on woodland composition have been included. As a result, wooded areas will be considered as Candidate SWH for Bat Maternity Colonies for the purpose of this EIS.

### 2.3.9 Species at Risk

A search of the NHIC database and other available wildlife atlases was conducted to identify possible occurrences of federal and/or provincial SAR and/or provincially rare species in proximity to the Study Area. SAR are defined as those listed as Endangered or Threatened under the ESA.

**Table 4** identifies the SAR with the potential to occur within the Study Area. Table 1 in **Appendix C** provides a list of species with occurrence records in the area and the rationale used to determine the potential for these species and/or their habitat to occur in the Study Area. The review of applicable background information suggests that the following SAR have the potential to occur within the Study Area.

**Table 4: Species at Risk with potential to occur within the Study Area**

SCIENTIFIC NAME	COMMON NAME	SAR A <sup>1</sup>	ESA 2	S- RANK <sup>3</sup>	INFORMATION SOURCE <sup>4</sup>
<b>BIRDS</b>					
<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	S4B,S4N	OBBA
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	OBBA
<i>Ammodramus henslowii</i>	Henslow's Sparrow	END	END	SHB	NHIC
<b>MAMMALS</b>					
<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?	MWH
<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3	MWH
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	MWH
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	MWH
<b>VASCULAR PLANTS</b>					
<i>Juglans cinerea</i>	Butternut	END	END	S3?	MECP Mapping

<sup>1</sup>Federal Species at Risk Act (END= endangered, THR= threatened); <sup>2</sup>Ontario Endangered Species Act (END= endangered, THR= threatened); <sup>3</sup>Ontario SRank; S4= apparently secure; S3 = vulnerable; S2 = imperilled; B = Breeding; N= Nonbreeding; ?= Inexact or Uncertain; <sup>4</sup>Information sources include: OBBA = Ontario Breeding Bird Atlas, MWH = Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0; NHIC = Provincially Tracked Species.

Field studies conducted to evaluate the presence of potential SAR and SAR habitat are provided in **Section 4**.

## 3.0 Fieldwork Methodology

The existing conditions information contained within this EIS is based on field investigations completed in 2020 for the Project Location. Existing conditions were also established through the review and summary of published reports, data made available through various public agencies, and web-based mapping programs relating to the Project Location. **Table 5** lists the survey types, dates and weather conditions.

**Table 5: Field Survey Requirements, Dates and Weather Conditions**

Date	Weather Conditions	Air Temp (°C)	Purpose of Visit
November 6, 2019	Partly cloudy, light breeze, no precipitation	5	Woodland staking confirmation
June 26, 2020	No cloud cover, light breeze, precipitation prior to survey	17	Breeding Bird Survey #1
June 6, 2020	Mostly cloudy, no wind, precipitation prior to survey	23	Breeding Bird Survey #2
July 27, 2020	Mostly cloudy, light breeze, no precipitation	29	Ecological Land Classification and Botanical Inventory
August 27, 2020	Mostly cloudy, light breeze, no precipitation	26	Butternut Health Assessment and woodland staking site walk
October 1, 2020	Partly cloudy, light breeze, no precipitation	14	Butternut Health Assessment

### 3.1 Ecological Land Classification

Vegetation communities were assessed using Ecological Land Classification (ELC) to identify and assess natural heritage features within the Project Location. During the field investigation, vegetation was characterized using the ELC System for Southern Ontario (Lee *et al.*, 1998) in order to classify and map ecological communities to the vegetation level. The ecological community boundaries were determined through the review of aerial photography and then further refined through on-site botanical surveys.

Vegetation communities identified as a result of the 2020 ELC surveys are shown on **Figure 2** and described in **Section 4.1**.





# 1667 SUNNINGDALE BEND

## ENVIRONMENTAL IMPACT STUDY

### SITE INVESTIGATION

FIGURE 2

- Project Location
  - Study Area (120m)
  - Breeding Bird Survey Location
  - Top of Bank (Staked by CVCA October 15, 2007)
  - Natural Area Limit (November 6, 2019)
  - Natural Area Limit (CVC, June 11, 2010)
  - Watercourse (MNRF)
  - Road
- Ecological Land Classification**
- CVR\_2: Single Family Residential
  - FOD7: Fresh - Moist Lowland Deciduous Forest Ecosite
  - WOMM3: Dry - Fresh Mixed Woodland

SCALE 1:1,500



MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNRF, GSAI

MAP CREATED BY: LK/ZB  
MAP CHECKED BY: WM  
MAP PROJECTION: NAD 1983 UTM Zone 17N

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PROJECT: 20-2878  
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### 3.2 Botanical Inventory

A single-season (early summer) vegetation survey was conducted and consisted of wandering transects and/or area searches to determine the presence, richness and abundance of floral species within the Project Location as well as presence/absence of botanical SAR. Species nomenclature is based on the Ontario Plant List (Newmaster *et al.*, 1998).

Plant species identified within the Project Location during the 2019 and 2020 field seasons are discussed in **Section 4.2**.

### 3.3 Dripline Staking

As the original dripline had been staked in 2010, the CVC requested that confirmation of the woodland boundaries take place through an additional staking exercise. Dillon staked the current woodland boundary on November 6, 2019, with CVC in attendance; and the limits were confirmed again through a site visit with City and CVC staff on August 27, 2020.

The staked dripline limits are included in **Figure 2**.

### 3.4 Breeding Bird Surveys

Diurnal breeding bird surveys were conducted within the Project Location and followed the methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Ontario Breeding Bird Atlas, 2001). Specifically, surveys consisted of point counts generally conducted between dawn and five hours after sunrise to establish quantitative estimates of bird abundance in suitable habitat types within the Project Location. During the surveys evidence of breeding behaviour was recorded which generally includes, but is not limited to, males singing, nest building, egg incubation, territorial defence, carrying food, and feeding their young.

To supplement the surveys, area searches of the habitat were completed using binoculars to observe species presence and breeding activity between point counts. Area searches involve noting all individual bird species and their corresponding breeding evidence while traversing the habitat on foot. The point count locations are displayed on **Figure 2**.

Results of breeding bird surveys are provided in **Section 4.5**.

### 3.5 Species at Risk

A Butternut Health Assessment (BHA) for individual trees located within the Project Location was completed to categorize the health of the tree and to determine the extent of Butternut canker disease. BHA protocols followed the MNRF's Butternut Assessment Guidelines (2011). A certified Butternut Health Assessor (ID#261) of Dillon completed a BHA for trees within the Project Location. As per the prescribed protocol, the assessor documented each tree's DBH, the coverage of live crown, the number

and size of sooty and open cankers on the main trunk (< 2 m and > 2 m), and the number and size of sooty and open root flare cankers. Additional details including the presence of twig and branch dieback, defoliation, and discoloration were also noted. A BHA determines the condition of the tree and for a tree that is not cultivated or a hybrid, the tree is ranked in one of three categories, outlined as follows:

- A Category 1 tree is one that is affected by Butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of Butternut in the area, and is considered 'non-retainable'.
- A Category 2 tree is one that is not affected by Butternut canker, or is affected by Butternut canker but the degree to which is affected is not too advanced and retaining the tree could support the protection or recovery of Butternut in the area, and is considered 'retainable'.
- A Category 3 tree is one that may be useful in determining sources of resistance to Butternut canker, and is considered 'archivable'.

Results relating to SAR and SAR habitat within the Project Location have been included in **Section 4.6**.

### 3.6 Incidental Wildlife

---

A general wildlife assessment was completed during the 2020 field investigations within the Project Location and adjacent lands through incidental observations. Incidental observations of wildlife were noted as well as other wildlife evidence such as dens, tracks, and scat. For each observation, notes, and when possible, photos were taken. These observations are intended to help determine potential ecological function, linkages, etc. within the Project Location.

The resulting list of wildlife species incidentally observed within and adjacent to the Project Location is provided in **Section 4.7**.

## 4.0 Fieldwork Results and Evaluation

A biophysical inventory of natural features within the Project Location was completed in accordance with the methods detailed in **Section 3.0**. The analysis of data collected from secondary source information and during field studies was used to evaluate the significance of natural heritage features within the Project Location and Study Area.

### 4.1 Ecological Land Classification

Three ELC communities were identified within the Project Location and extending into the Study Area during field investigations. The location, type and boundaries of the vegetation communities are shown on **Figure 2** and described in **Table 6**. Each of the vegetation communities identified are considered common in Ontario.

The majority of the Project Location consisted of Single Family Residential (CVR\_2) that is considered a cultural ecosite and was dominated by weed species and scattered landscape trees. The wooded area on the north side of the Project Location was determined to be Dry-Fresh Mixed Woodland (WOMM3) ecosite dominated by Norway Spruce (*Picea abies*) and Black Walnut (*Juglans nigra*) on a gentle valley slope. To the north of the watercourse, and to the south of the Project Location, the community consists of Fresh-Moist Lowland Deciduous Forest. Photos of the communities within the Project Location and ELC data cards have been included in **Appendix D**.

**Table 6: Ecological Land Classification**

ELC Community	ELC Code	Description	App. D #
Dry-Fresh Mixed Woodland Ecosite	WOMM3	Woodland community dominated by Norway Spruce and Black Walnut. Additional species observed included Eastern White Cedar ( <i>Thuja occidentalis</i> ), Balsam Fir ( <i>Abies balsamea</i> ), Sugar Maple ( <i>Acer saccharum</i> ), Siberian Elm ( <i>Ulmus pumila</i> ), and Ostrich Fern ( <i>Matteuccia struthiopteris</i> ).	1, 2
Single Family Residential Ecosite	CVR_2	Much of the ecosite consisted of weedy species with scattered landscaped trees. Abundant species included Canada Thistle ( <i>Cirsium arvense</i> ) and Garlic Mustard ( <i>Alliaria petiolate</i> ) while occasional occurrence of the following species were noted: grasses within the Poaceae Family, Common Milkweed ( <i>Asclepias syriaca</i> ) and White Sweet-clover ( <i>Melilotus albus</i> ).	3,4,6
Fresh-Moist Lowland Deciduous Forest (desktop)	FOD7	Areas to the north of the watercourse within the northern Study Area, and south of the Project Location.	N/A

## 4.2 Botanical Survey

A total of 49 flora species were documented during the 2020 field studies. Of the 49 species, one species was identified as Endangered under the ESA, 2007, Bitternut (*Juglans cinerea*). This species is discussed further in **Section 4.6**. Approximately 39% are listed as native species considered to be common (S4) or very common (S5) in the province of Ontario. Approximately 59% of the species are listed as non-native, therefore a status ranking is not applicable.

The Co-efficient of Conservatism (CC) provides additional information on the nature of the vegetation communities within the Project Location. The CC values range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape that is relatively unaltered or is in a pre-settlement condition. For example, a CC of 0 is given to plants such as Manitoba Maple (*Acer negundo*) that demonstrate little fidelity to any remnant natural community (i.e., may be found almost anywhere). Similarly, a CC of 10 is applied to plants like Shrubby Cinquefoil (*Potentilla fruticosa*) that are almost always restricted to a pre-settlement remnant (i.e., a high quality natural area). Introduced plants were not part of the pre-settlement flora, so no CC values have been applied to these species.

Of the species identified within the Project Location, there are no species within a CC value of 7 or greater. The mean CC value for the site was 3.1 out of a possible 10, indicating an altered landscape. This is typical of an urban environment as compared to naturally occurring environments. A list of the vegetation species observed within the Project Location has been included in **Appendix E**.

Potential impacts related to vegetation within the Project Location are included in **Section 7.1.2**.

## 4.3 Woodlands

Section 6.3.12.f of the City OP, 2019 defines significant woodlands as those that meet one or more of the following:

- *Woodlands, excluding cultural savannahs, greater than or equal to four hectares;*
- *Woodlands, excluding cultural woodlands and cultural savannahs, greater than or equal to two hectares and less than four hectares;*
- *Any woodland greater than 0.5 hectares that:*
  - *Supports old growth trees (greater than or equal to 100 years old);*
  - *Supports a significant linkage function as determined through an EIS approved by the City in consultation with the appropriate conservation authority;*
  - *Is located within 100 metres of another Significant Natural Area supporting a significant ecological relationship between two features;*
  - *Is located within 30 metres of a watercourse or significant wetland; or*
  - *Supports significant species or communities.*

Based on the current dripline staking, and the provincial mapping outside of the Project Location, the woodland is approximately 2.4 ha in size, and is associated with a watercourse (and valley system). As a result, it meets the City's significance criteria and is considered a Significant Woodland (**Figure 3**).

Potential impacts related to the Significant Woodland are included in **Section 7.1**.

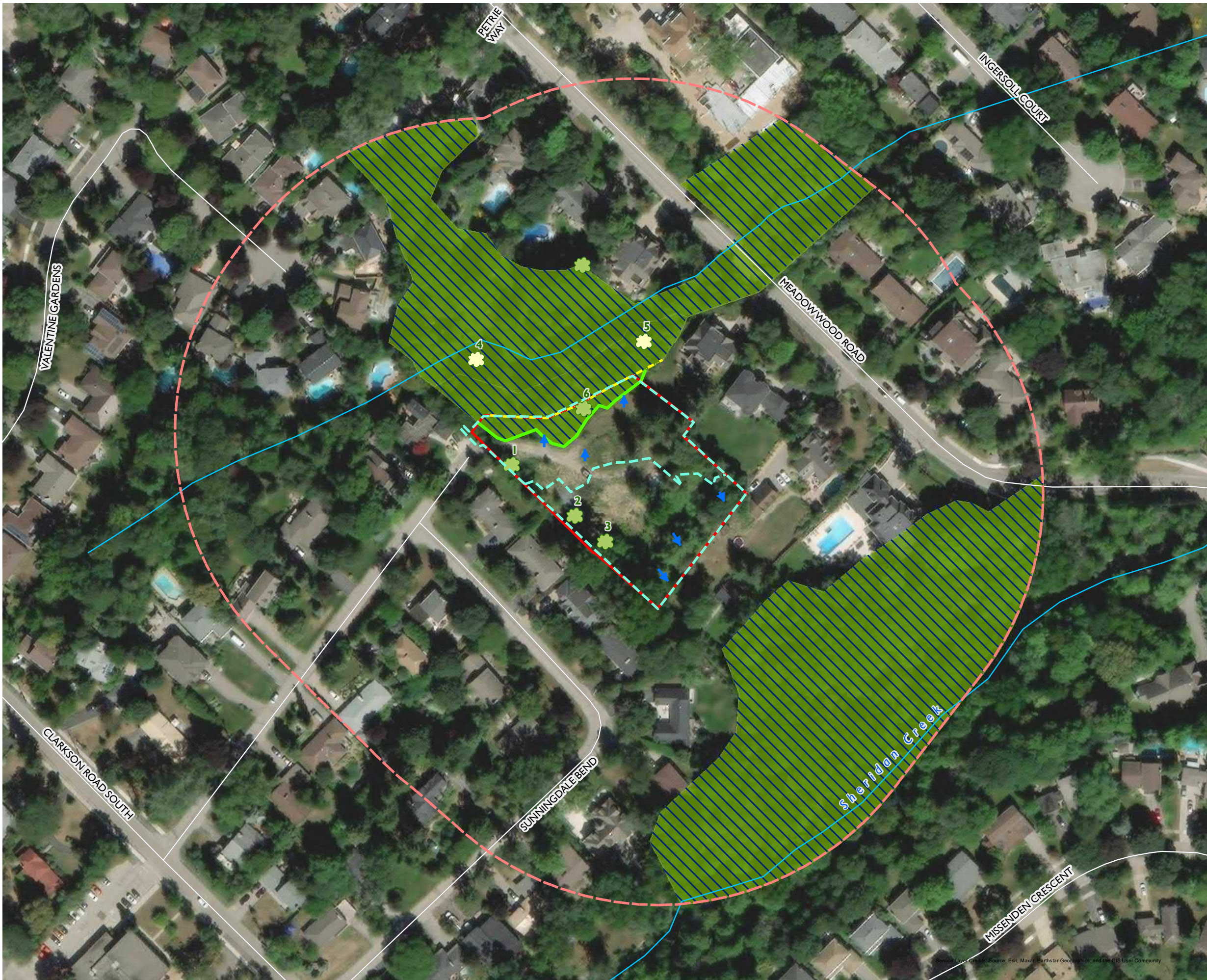
#### 4.4 Valleylands

Based on the significance criteria for valleylands in the Natural Heritage Reference Manual (2010), significant valleylands may have several characteristics, which may include, but are not limited to, the following:

- Areas of water conveyance from catchment areas of 50 ha or greater;
- Areas of active or historical erosion;
- Areas contributing to groundwater infiltration;
- Areas with well-defined valley morphology having an average width of 25 m or more;
- Areas of contiguous woodland, wetland or meadow;
- Riparian vegetation greater than 30 m in width on each side of the surface water feature; and,
- Natural vegetation corridors width of 100 m along the valley.

Section 6.3.12 of the City OP states that *significant valleylands are associated with the main branches, major tributaries and other tributaries and watercourse corridors draining directly to Lake Ontario including the Credit River, Etobicoke Creek, Mimico Creek and Sixteen Mile Creek*, however the OP does not contain specific criteria for evaluation of significant valleylands. This only suggests that significant valleylands within the City are associated with these features (but would not, by default, include all of these surface water features). This tributary is considered a watercourse draining directly into Lake Ontario, however, because the valley feature contains a narrow riparian corridor (i.e., less than 25 m) and appears to be channelized (landscaped through the backyards backing onto the Project Location), it would not be considered a significant valleyland, by provincial criteria. Further, it will be protected through the planning process and other relevant policies (i.e., watercourse setbacks, Top of Bank, etc.).

Potential impacts related to surface water are discussed in **Section 7.1.1**.



# 1667 SUNNINGDALE BEND

## ENVIRONMENTAL IMPACT STUDY

### NATURAL HERITAGE FEATURES

FIGURE 3

- Project Location
- Study Area (120m)
- Significant Woodland
- Hybrid Butternut
- Dead Standing Butternut
- Existing Catchment Areas
- Existing Drainage Direction
- Top of Bank (Staked by CVCA October 15, 2007)
- Natural Area Limit (November 6, 2019)
- Watercourse (MNR)
- Road
- Candidate Significant Wildlife Habitat**
- Bat Maternity Colonies / Seeps and Springs

SCALE 1:1,500



MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNR, GSAI

MAP CREATED BY: LK/ZB/AEE  
MAP CHECKED BY: WM  
MAP PROJECTION: NAD 1983 UTM Zone 17N

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DATE: 2023-12-20

## 4.5 Significant Wildlife Habitat

As mentioned, because the potential for Bat Maternity Colony habitat exists within the woodland and not within the development area, specific snag density searches were not completed as part of this EIS, although tree species and details on woodland composition have been included. As a result, wooded areas will be considered as Candidate SWH for Bat Maternity Colonies for the purpose of this EIS (**Figure 3**).

In addition, during a site walk with CVC in 2020, potential seepage areas were identified within the valley/ ravine feature to the north. This is typical of slopes within riverine systems. As the specific number and locations were not recorded, we have noted the woodlands as Candidate SWH for Seeps and Springs (**Figure 3**).

No other SWH was identified within the Study Area. Details related to breeding birds are included below.

### 4.5.1 Breeding Bird Surveys

A total of 23 bird species were observed during the breeding bird surveys in 2020 (**Table 7**). Of the 23 species, Barn Swallow (*Hirundo rustica*) listed as Threatened under the ESA, 2007 was observed. The remaining bird species observed are considered common and apparently secure (S4) or widespread and secure (S5) in the province of Ontario based on the provincial conservation rankings assigned by the NHIC.

**Table 7: Results of Breeding Bird Survey**

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>2</sup>	SRank <sup>3</sup>
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B
<i>Buteo jamaicensis</i>	Red-tailed Hawk	---	---	S5
<i>Cardinalis cardinalis</i>	Northern Cardinal	---	---	S5
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B
<i>Carpodacus mexicanus</i>	House Finch	---	---	SNA
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B
<i>Corvus brachyrhynchos</i>	American Crow	---	---	S5B
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5
<i>Hirundo rustica</i>	Barn Swallow	THR	SC*	S4B
<i>Icterus galbula</i>	Baltimore Oriole	---	---	S4B
<i>Larus delawarensis</i>	Ring-billed Gull	---	---	S5B,S4N
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	---	---	S4
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B
<i>Molothrus ater</i>	Brown-headed Cowbird	---	---	S4B
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	---	---	S4B



Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>2</sup>	SRank <sup>3</sup>
<i>Passer domesticus</i>	House Sparrow	---	---	SNA
<i>Picoides pubescens</i>	Downy Woodpecker	---	---	S5
<i>Picoides villosus</i>	Hairy Woodpecker	---	---	S5
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5
<i>Sitta carolinensis</i>	White-breasted Nuthatch	---	---	S5
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA
<i>Turdus migratorius</i>	American Robin	---	---	S5B
<i>Zenaida macroura</i>	Mourning Dove	---	---	S5

<sup>1</sup>Federal Species at Risk Act, 2002 <sup>2</sup>Provincial Endangered Species Act, 2007 <sup>3</sup>Subnational (Provincial) Rank (Source: OMNR National Heritage Information Centre website, 2007) SRanks – S5 = Very Common; S4 = Common; SNA (SE) = conservation status ranking not applicable (exotic); <sup>4</sup>Breeding Bird Codes from Breeding Bird Atlas of Ontario (Cadman *et al.* 2007)

As no SCC bird species or habitat was observed during site investigations, SWH for breeding birds was not identified within the Project Location. Barn Swallow, is discussed further in **Section 4.6**.

*\*Note that since the time of drafting this report, Barn Swallow has been down listed by the Committee on the Status of Species at Risk in Ontario from THR to SC.*

## 4.6 Species at Risk

As indicated above, one Barn Swallow was observed foraging in the distance from the Project Location, during breeding bird surveys; however, sheds/garages on site were checked for nests and no Barn Swallow nests were found. In addition, since the time of drafting this report, Barn Swallow has been down listed provincially from THR to SC.

During botanical and ELC surveys, four Butternut tree were identified within the Project Location and an additional three within the Study Area to the north (**Figure 3**). Assessments for each of the trees was conducted by a Dillon certified Butternut Health Assessor following the methods of the MNRF Butternut Health Assessment Guidelines (2011). Assessment details are outlined in **Table 8**. Photos of Butternut are included in **Appendix D**.

**Table 8: Butternut Health Assessment Results**

Tree ID #	UTM Easting/Northing (Zone 17T) UTM Northing (Zone 17T)	Category	DBH (cm)	Comments
001*	611608 / 4819053	Hybrid (1)	6	Inside construction footprint
002*	611634 / 4819033	Hybrid (2)	1	Inside construction footprint
003*	611646 / 4819023	Hybrid (3)	55	Inside construction footprint
004	611594 / 4819096	dead	Unknown	n/a
005	611661 / 4819103	dead	10	n/a
006*	611635 / 4819077	Hybrid (1)	3	Inside construction footprint

\*Samples of these individuals were submitted to Precision Biomonitoring for DNA analysis in 2021 and were confirmed as hybrid of Butternut and Japanese Walnut and, are therefore, not protected under the ESA.

As mentioned above, while targeted surveys were not conducted within the adjacent lands, potential habitat for SAR bats may exist within the woodland (WOMM3) located along the northern edge of the Project Location (**Figure 3**).

No other SAR or SAR habitat was identified within the Project Location during 2020 field surveys.

Potential impacts related to SAR are addressed further in **Section 7.1.3**.

## 4.7 Incidental Wildlife

Wildlife species common to urban and disturbed sites, were observed during the site visit, as listed in **Table 9**. All species observed are considered secure (S5) in Ontario.

**Table 9: Incidental Wildlife Observations**

SCIENTIFIC NAME	COMMON NAME	SAR A <sup>1</sup>	ESA <sup>2</sup>	S- RANK <sup>3</sup>	OBSERVATION
<b>MAMMALS</b>					
<i>Sylvilagus floridanus</i>	Eastern Cottontail	---	---	S5	Observed
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	---	---	S5	Observed
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	---	---	S5	Observed
<i>Odocoileus virginianus</i>	White-tailed Deer	---	---	S5	Observed

<sup>1</sup>Federal Species at Risk Act; <sup>2</sup>Ontario Endangered Species Act; <sup>3</sup>Ontario SRank; S5= secure; --- denotes no information.

## 5.0

## Ecological Function

As part of this EIS, natural features within the Study Area were identified. These features were considered in determining the extent of natural feature surveys required to determine the ecological function of the Project Location and Study Area.

Natural features within and adjacent to the Project Location were analyzed to determine their ecological function. At the larger landscape scale, the Study Area lies within the Lake Ontario Shoreline West Tributaries subwatershed and larger Credit River watershed within the region known as the Sand Plain. The Project Location is an existing residential property surrounded by woodland associated with a Tributary to Sheridan Creek to the north; single family residential homes to the west; single family residential homes to the east; and woodland, residential homes and Sheridan Creek to the south. Only a small portion of the woodland to the north is within the Project Location boundaries.

The Significant Woodland provides ecological and hydrological function, forming part of the Sheridan Creek corridor connecting to Rattray Coastal Marsh Wetland Complex (PSW) downstream that eventually drains into Lake Ontario, and may provide habitat to a number of native plant and wildlife species. However, the potential for important connectivity and linkage functions within the subwatershed landscape are limited due to interruption by roadways and residential homes.

General ecological functions of natural features adjacent to the Study Area include prevention of erosion and runoff, facilitating hydrological and nutrient cycling, and improving localized soil, water and air quality. Invasive plant species were identified within the woodland including Norway Spruce that limit the potential for ecological function of the woodland, although the area still provides general habitat for local wildlife species (birds, small mammals, etc.).

Refer to **Section 7.0** and **Section 8.0** for potential impacts and recommended mitigation measures to prevent impacts to natural features and their ecological functions.

## 6.0 Description of Proposed Development

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The development within the Project Location consists of five single detached dwellings, serviced by a condominium road (**Figure 4**).

Construction of the proposed development would include the removal of select trees and ground vegetation from the development area, construction of dwellings, placement of hardscape (driveways, sidewalks) and underground servicing for stormwater and sanitary water. Landscaping may include, but is not limited to, the the insallation of fencing, sod, and tree plantings.

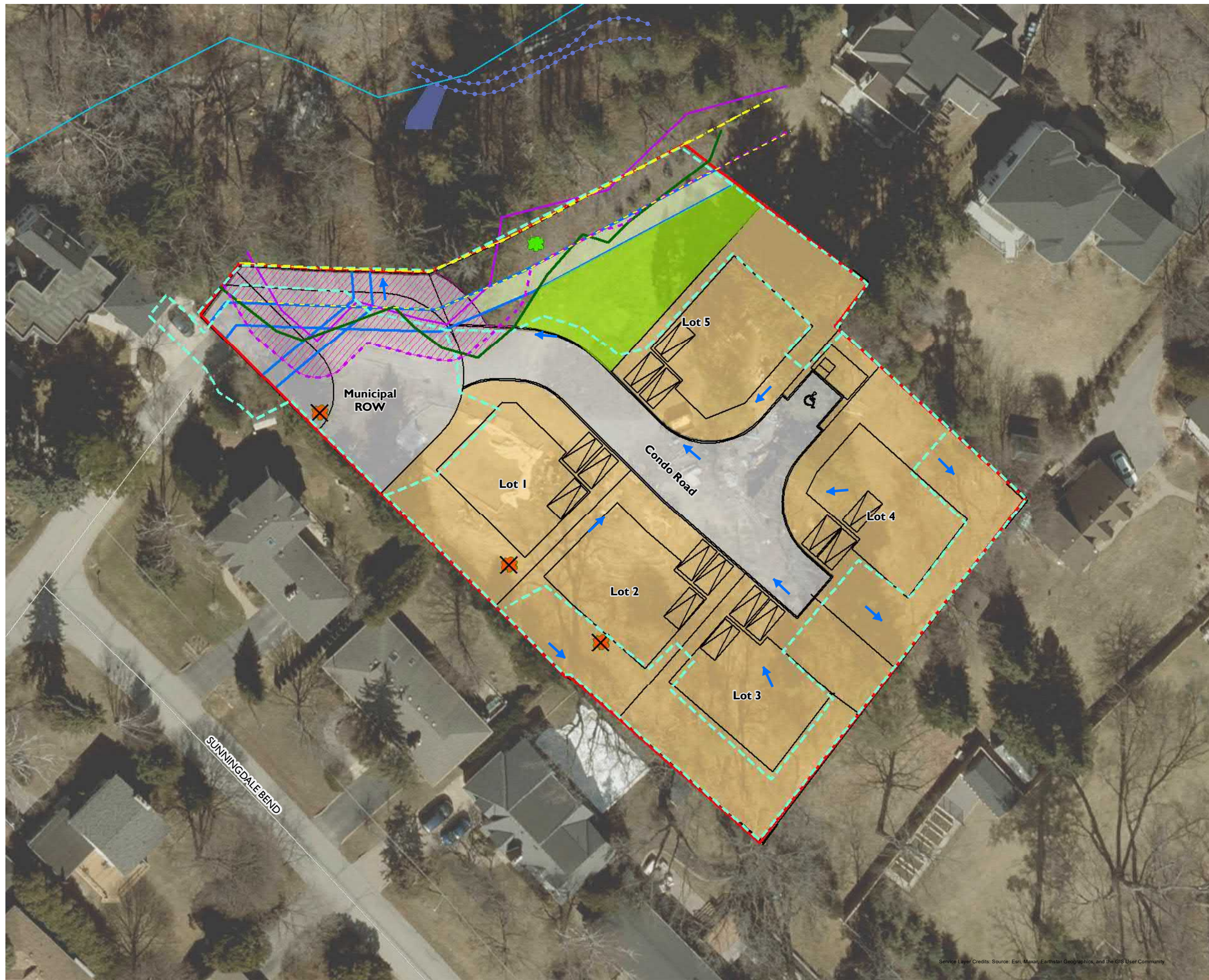
The potential impacts of the development are discussed in **Section 7.0**.

# 1667 SUNNINGDALE BEND

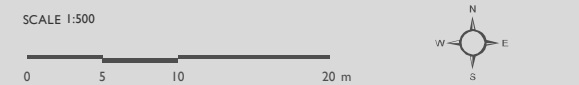
## ENVIRONMENTAL IMPACT STUDY

### PROPOSED DEVELOPMENT PLAN

FIGURE 4



- Project Location
  - Road
  - Watercourse (MNRF)
  - ✿ Butternut to be Preserved
  - ✗ Butternut to be Removed
  - Top of Bank (Staked by CVCA October 15, 2007)
  - 5 m Buffer from Top of Bank
  - Natural Area Limit (CVC, June 11, 2010)
  - 5 m Buffer from 2010 Natural Area Limit
  - Natural Area Limit (November 6, 2019)
  - SWM outfall area
  - Headwall
  - Proposed Catchment Areas
  - Proposed Development Plan
  - Residential
  - Paved Area
  - 3m Easement
- Restoration and Compensation**
- Encroachment Area (2010) (387 sqm)
  - 3m Easement Restoration Area (114 sqm)
  - NHS & Buffer Compensation Area (316 sqm)



MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNRF, GSAI

MAP CREATED BY: LK/AEE  
MAP CHECKED BY: WM  
MAP PROJECTION: NAD 1983 UTM Zone 17N

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PROJECT: 20-2878  
STATUS: DRAFT  
DATE: 2023-12-21

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

## 7.0 Impact Assessment

### 7.1 Potential Direct Impacts

Potential direct impacts are those that are immediately evident as a result of a development. Typically, the adverse effects of potential direct impacts are most evident during the site preparation and construction phase of a development. Potential direct impacts of the proposed residential development include the following:

- Erosion and sedimentation into adjacent natural features (Significant Woodland and adjacent tributary);
- Tree and vegetation removal; and
- Loss of/disturbance to wildlife and wildlife habitat.

The proposed site plan and potential environmental impacts of development are shown in **Figure 4**.

#### 7.1.1 Erosion and Sedimentation of Natural Features

Construction activity, especially operations involving the handling of earthen material, increases the availability of sediment for erosion and transport. In order to mitigate the adverse environmental impacts caused by the release of sediment-laden runoff into drainage ditches, measures for erosion and sediment control (ESC) are recommended for the construction site and an ESC plan will be provided at the Detailed Design stage.

Potential impacts to these features may include disturbance to or loss of additional vegetation due to the deposition of dust and/or overland mobilization of soil.

Refer to **Section 8** for mitigation measures related to erosion and sedimentation within the Project Location.

#### 7.1.2 Tree and Vegetation Removal

The proposed development plan indicates tree and ground vegetation removal limited to the proposed development plan shown on **Figure 4** to facilitate grading and construction of the development.

The proposed development will result in vegetation removal throughout the previously disturbed area of the Project Location. On a site level, the impacts of tree and vegetation removal may include:

- Direct loss of trees
- Decreased floral species richness and abundance
- Negative edge effects, include altered soil conditions and water availability
- Loss of native seed banks

- Physical injury, root damage, and compaction of trees not intended for removal that may result from construction operations.

Vegetation removal includes approximately 387 m<sup>2</sup> of the 2019 staked Significant Woodland and 5 m buffer area as staked by CVC in 2010 (**Figure 4**).

Mitigation and compensation measures are discussed further in **Section 8.1**.

### 7.1.3 Loss of and/or Disturbance to Wildlife and Wildlife Habitat

Wildlife may be impacted due to vegetation clearing during construction within the proposed development area. Ground vegetation will be removed in the majority of the development area and select encroachment into the Significant Woodland along the northern portion of the development which may contain SWH for bat maternity colonies and wildlife habitat for a number of other species.

More specifically, wildlife may be impacted by construction in the following ways:

- Displacement, injury, or death resulting from contact with heavy equipment during clearing and grading activities
- Disturbance to wildlife as a result of noise associated with construction activities, particularly during breeding periods
- Loss of general wildlife habitat.

Wildlife impact mitigation measures have been recommended for the development area and are included in **Section 8.2**.

## 7.2 Potential Indirect Impacts

Potential indirect impacts are those that do not always manifest in the core development area, but in lands adjacent to the development. Indirect impacts can begin in the construction phase; however, they can continue post-construction. Potential indirect impacts of the proposed development include anthropogenic disturbance and colonization of non-native and/or invasive species.

### 7.2.1 Anthropogenic Disturbance

Disturbance to local wildlife communities due to indirect impacts on the lands adjacent to the proposed development could result if left unmitigated. Noise, light, vibration and human presence are indirect impacts that can adversely influence the population size and breeding success of local wildlife. These effects are more pronounced when new development is introduced in non-urban areas. As the areas surrounding the Project Location are currently developed, or are used for recreational purposes, impacts related to anthropogenic disturbance are expected to be minor as a result of the proposed development. Mitigation measures that address anthropogenic disturbance have been included in **Section 8.1**.

### 7.2.2 Colonization of Non-native and/or Invasive Species

Physical site disturbance may increase the likelihood that non-native and/or invasive flora species will be introduced to the surrounding vegetation communities. Invasive flora can establish in disturbed sites more efficiently than native flora and can then encroach into adjacent undisturbed areas. Currently around 59% of the species present within the Project Location are non-native/invasive. If left unmanaged, this number may increase as native vegetation is outcompeted each year.

Mitigation measures relating to invasive species have been included in **Section 8.1**



## 8.0 Mitigation and Opportunities for Enhancement

Mitigation involves the avoidance or minimization of developmental impacts through good design, construction practices and/or restoration and enhancement activities. The feasibility of mitigation options has been evaluated based on the natural features within and adjacent to the Project Location. The impact assessment highlighted three potential direct impacts: tree and vegetation removal, erosion and sedimentation of natural features, and loss of and/or disturbance to wildlife and wildlife habitat.

A variety of mitigation techniques can be used to minimize or eliminate the above-mentioned impacts. These measures include implementation of a Functional Servicing Plan, Woodland Offsetting and Landscaping Plan, Erosion and Sediment Control Plan and an Environmental Monitoring Plan. Mitigation measures recommended for the proposed development are introduced below. Additional information on the mitigation measures will be refined through Detailed Design of the development.

### 8.1 Functional Servicing Plan

A Functional Servicing Report (FSR) has been prepared by Trafalgar Engineering for the proposed development. The proposed development will be serviced by an existing 250 mm diameter sanitary sewer and an existing 150 mm watermain located on Sunningdale Bend. These services will be extended as municipal services to the proposed development site.

To control the 100-year post-development flows to the existing 2-year pre-development rate, underground storage tanks are required to provide the required storage volumes. In addition, the required 5 mm of infiltration will be addressed through the underground storage tanks. Water quality will be addressed through use of CB Shields installed in the catchbasins and stormceptors between CBs and underground storage tanks to achieve 80% TSS removal. To maximize the capture of flows from the site, rear downspouts are proposed from Lots 3-5 and will be directly connected to the sites storm sewer system. An emergency overland flow path will be provided to direct flows to the tributary north of the site. To preserve trees within the valley, the outlet sewer will be installed using directional drilling or other trenchless technology (refer to **Figure 4**). Moreover, as shown on the Servicing Plan prepared by Trafalgar, the headwall has been intentionally placed in a location that will have minimal to no impact on existing trees. Further details on the outlet and potential impacts and mitigation (e.g. individual tree compensation) will be confirmed through detailed design.

For further details on functional servicing of the development, please refer to the Functional Servicing Report (Trafalgar Engineer, 2023), provided under separate cover.

## 8.2 Woodland Offsetting and Landscaping Plan

The woodland staking by CVC in 2010 established the limit of the natural area (woodland) as well as the Top of Bank (**Figure 4**). At the time, CVC had requested a compensation ratio of 1:1 for encroachments into the woodland and 5 m buffer.

When the dripline was re-staked in 2019, much of the area comprising the 2010 5 m buffer had since succeeded into woodland and would now be considered part of the overall woodland feature. Through discussions with CVC (Lisa Hosale) in December 2020, it was confirmed that so long as the original limits of development plus any newly wooded areas outside of those limits to be impacted are considered through the 1:1 compensation plan, the development can proceed without having to establish new 5 m buffer areas to the current (2019) woodland limit.

As depicted in **Figure 4**, the proposed development requires a total encroachment area of 387 m<sup>2</sup> (or approximately 0.04 ha) into the Significant Woodland and/or the 5 m 2010 buffer. As a result, a detailed compensation plan will be prepared for review by the City which will include re-seeding disturbed areas within the valley (easement) and planting of native trees and shrubs. The compensation area has been depicted on **Figure 4**, which shows an area of approximately 316 m<sup>2</sup>. Please note that the Easement Restoration Area (114 m<sup>2</sup>) has been excluded from the compensation area as we cannot plant trees within this area; however it will be re-naturalized with native seed mix and shrub plantings to benefit the overall habitat and connectivity within the woodland. So the total area of compensation and restoration will be 430 m<sup>2</sup>. The limit of the development area will be permanently fenced (chain link or similar) and both the easement and compensation areas will be dedicated to the City. The compensation planting plan will be confirmed through Detail Design with the City and will be incorporated into the overall landscaping and planting plan for the development. Plantings will include native tree and shrub species following the guidelines and recommendations of the CVC. Following planting, monitoring and maintenance measures may be recommended, which could include, but are not limited to:

- Removal of invasive tree and shrubs, where applicable
- Watering and weeding of newly planted areas as required for proper establishment of plantings
- Replacement of dead material from previous year's planting.

## 8.3 Wildlife Impact Mitigation Plan

Strategies to mitigate potential impacts to general wildlife prior to and during construction are proposed. These may include (but are not limited to):

- Clearing trees and vegetation outside the breeding bird season (April 1 to August 31). Should any clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed 48 hours prior to clearing activities. If nests are found, work within 10 m of the tree should cease until the nest has fledged. If no nests are present, clearing may occur. This is in accordance with the federal *Migratory Birds Convention Act*

- Work that may indirectly impact trees within the Significant Woodland should occur outside of the bat active season (May 1 through October 31)
- Where possible, maximize the distance of construction equipment used from the woodland edge to avoid disturbing wildlife
- Limit the use of lighting where possible. Avoid light effects entering the woodland (eliminate light trespass) where possible
- Installation of wildlife exclusion fencing and escape routes, which direct wildlife away from the construction area and to more suitable habitat (e.g., woodland)
- Construction of permanent fencing along the backs of lots to prevent encroachment into the woodland
- Visual monitoring for wildlife species and avoidance where encountered if possible
- If necessary, have a qualified biologist monitor construction in the areas of potential wildlife habitat. If wildlife are found within the construction area they will be re-located to an area outside of the development into an area of appropriate habitat, as necessary
- Construction crews working on site should be educated on local wildlife and take appropriate measures for avoiding wildlife
- Should an animal be injured or found injured during construction they should be transported to an appropriate wildlife rehabilitation center

#### 8.4 Erosion and Sediment Control Plan

In order to mitigate the adverse environmental impacts caused by the release of sediment-laden runoff, measures for erosion and sediment control are required for construction sites. Control measures must be selected that are appropriate for the erosion potential of the site and it is important that they be implemented and modified on a staged basis to reflect the site activities. Furthermore, their effectiveness decreases with sediment loading and therefore, inspection and maintenance is required.

An Erosion and Sediment Control Plan will be developed as part of detailed design for the proposed development. The plan may include, but is not limited to measure such as installation of geotextile silt fences, rock check dams, and designated topsoil stockpile areas. More specifically, the plan may include the following measures:

- Standard duty silt fencing (OPSD 219.110) and/ or other equivalent erosion and sediment controls should be installed around the perimeter of the work area to clearly demarcate the development area and prevent erosion and sedimentation into adjacent habitats. Erosion and sediment control measures should be monitored regularly to ensure they are functioning properly and if issues are identified should be dealt with promptly
- Stockpiling of excavated material should not occur outside the delineated work area. If stockpiling is to occur outside of this area, silt fencing should be used to contain any spoil piles to prevent sedimentation into adjacent areas. Further, stockpiling of excavated materials will not occur within 30 m of watercourses or wetlands

- A spill response plan should be developed and implemented as required.

## 8.5 Environmental Monitoring Plan

The Environmental Monitoring Plan (EMP) may be carried out through the duration of construction activities on-site to ensure that the erosion and sediment control measures operate effectively and to monitor the potential impact, if any, upon the natural environment. The duration of construction is defined as the period of time from the beginning of earthworks until the site is stabilized. Site stabilization is defined as the point in time when the roads have been paved, buildings have been built, lawns have been sodded and restoration plantings have been completed.

The EMP should consist of monitoring the erosion and sediment measures and the restoration/compensation plantings. Erosion and sediment control measures would be regularly monitored and they will require periodic cleaning (e.g., removal of accumulated silt), maintenance and/or re-construction. Inspections of all of the erosion and sediment controls on the construction site should be undertaken by a certified sediment and erosion control monitor. If damaged control measures are found they should be repaired and/or replaced promptly. Site inspection staff and construction managers should refer to the *Erosion and Sediment Control Inspection Guide* (TRCA, 2008) prepared for the Greater Golden Horseshoe Area Conservation Authorities. This guide provides information related to the inspection reporting, problem response and proper installation techniques.

The EMP should be implemented during active construction periods in the development area with the following frequency:

- On a bi-weekly basis
- After every 10 mm or greater rainfall event.

Restoration planting and protected vegetation areas will require periodic monitoring to ensure that they are not impacted by adjacent development. Should any impacts be observed, necessary steps will be taken to ensure that the impacted vegetation is either restored or replaced. Further details on the length of time monitoring should occur for and a contingency plan in the event the plantings are not successful will be outlined in the Woodland Offsetting and Landscaping Plan in the Detailed Design phase.

## 9.0

## Summary

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This Environmental Impact Study was prepared in support of the proposed development located at 890 Meadow Wood Road in Mississauga, Ontario. This EIS was required by CVC for development within the Project Location. The findings of the background review combined with field surveys to assess the natural heritage features of the site are presented in this report.

The Project Location is an existing residential property surrounded by woodland associated with a tributary to Sheridan Creek to the north; single family residential homes to the west; single family residential homes to the east; and woodland, residential homes and Sheridan Creek to the south.

The Significant Woodland to the north of the Project Location provides ecological and hydrological function, forming part of the Sheridan Creek corridor connecting to Rattray Coastal Marsh Wetland Complex (PSW) downstream that eventually drains into Lake Ontario, and may provide habitat to a number of native plant and wildlife species. However, the potential for important connectivity and linkage functions within the subwatershed landscape are limited due to interruption by roadways and residential homes.

Potential ecological impacts of development may include tree and vegetation removal (including Significant Woodland), diversion of surface water flows, erosion and sedimentation of natural features, and loss of potential wildlife habitat. These impacts will be avoided or minimized by implementing the mitigation, restoration, and management measures described in this report.

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# Appendix A

## *Terms of Reference*





# MEMO

**TO:** Maricris Marinas, Credit Valley Conservation Authority  
**FROM:** Whitney Moore, Dillon Consulting Limited  
**DATE:** May 21, 2020  
**SUBJECT:** Environmental Impact Study Terms of Reference for 890 Meadow Wood Road, in the City of Mississauga, Ontario

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## Introduction

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Dillon Consulting Limited (Dillon) has been retained by United Lands to undertake environmental studies for a proposed residential development located at 890 Meadow Wood Road, in the City of Mississauga, Regional Municipality of Peel, Ontario (herein referred to as the “Project Location”) (see **Figure 1**, attached). As such, United Lands and Dillon are taking a pro-active approach to environmental-first planning and undertaking the appropriate environmental studies that are required to complete an Environmental Impact Study (EIS) and utilizing the results in the planning of this property.

In keeping with the general policies of Credit Valley Conservation (CVC) Environmental Impact Study Terms of Reference (2008), we have prepared the following Terms of Reference (ToR). Below we present the ToR in a check-list format to confirm that the required work and/or studies are known and agreed to prior to the commencement of work, to facilitate a stream-lined and timely review process.

## Terms of Reference

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### General

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- The EIS will be undertaken by a qualified professional in environmental or related sciences to provincial standards and/or the satisfaction of CVC.
- The EIS will describe the proposed development and required development applications.
- The EIS will describe and illustrate the boundaries of the Project Location, along with existing land use and details regarding the type of development.

### Municipal and Agency Requirements

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- The EIS will include the zoning and designations of Official Plan(s) (OP) pertaining to the Project Location. This includes any land use designations from other applicable municipal planning and/or policy documents, such as Secondary Plans.
- Land use designations from any other applicable planning documents (i.e., Oak Ridges Moraine, Greenbelt, etc.) will be clearly described and the limits identified in the report mapping.

- ☒ The EIS will outline relevant federal, provincial, municipal and agency legislation and policies related to the natural areas and designations that will be applied to the development, including but not limited to, the PPS, CVC Policies and Regulations, Peel Greenlands Policies, subwatershed studies, Credit River Fisheries Management Plan, etc. that may be relevant to the Project Location.
- ☒ The EIS will describe relevant municipal and agency issues that are to be addressed by this development (i.e., lot layout, grading, servicing etc.) that may negatively impact the natural features and functions of a site including but not limited to, stormwater management, barriers, municipal or private sanitary and water services, etc., based on information available from other disciplines.

### **Biophysical Inventory**

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- ☒ The EIS will identify the extent of natural heritage features, should they be located within or adjacent to the Project Location. Boundaries of natural heritage features will be confirmed in the field by the proponent, mapped on a figure in the report and approved by CVC and the planning authority.
- ☒ Designated environmental features (i.e., natural hazard features or other natural heritage features identified in the OPs) are to be identified in the mapping and described in the report. These features include provincial or regional Areas of Natural and Scientific Interest (ANSIs), Provincially and Locally Significant Wetlands (PSWs and LSWs), Environmentally Significant Areas (ESAs), Significant Wildlife Habitat, Significant Woodlands, Significant Valleylands, unevaluated wetlands, etc.
- ☒ A description of the soils, landforms and surficial geology based on a review of available mapping and literature will be described in the report. Topographical information will be provided on constraints mapping and will include any staking done to date as well as the calculated hazard limits (i.e., top of bank or top of slope).
- ☒ Hydrological and hydrogeological resources and issues, including, surface water features, recharge/discharge zones, groundwater quality and quantity, groundwater elevations and flow directions, and connections between groundwater and surface water features will be identified in the report, based on information available from the other disciplines.
- ☒ The vegetation communities will be identified using the Ecological Land Classification (ELC) system to vegetation type during the appropriate season for the plant communities present, where possible. The communities will be identified in the mapping, as well as described in the text. As a component of the ELC, a plant list organized by ELC unit will be included in the report. The list will indicate any provincially, regionally and/or locally rare, Threatened or Endangered species.
- ☒ A single-season (summer) plant survey, as part of ELC, is required and will be included in the report. The list will include any provincially, regionally and/or locally rare status, including Species at Risk (SAR) listed as Threatened or Endangered under the Endangered Species Act, 2007.

- The EIS requires breeding bird surveys. The surveys will be conducted during the breeding bird season at an appropriate time of day in appropriate weather conditions and by a qualified professional. A minimum of two surveys are required and they will follow generally accepted scientific protocols, not necessarily atlas methods. A list of the breeding birds will be included in the report. The list will include an analysis for the presence of SAR and Species of Conservation Concern.
- The EIS requires amphibian breeding surveys. The surveys will be conducted during the breeding amphibian season and by a qualified professional. For calling amphibians a minimum of three surveys are required. These surveys will use the Marsh Monitoring Program protocol. For non-calling amphibians, appropriate methodology will be used. A list of the breeding amphibians will be included in the report. The list will include an analysis for the presence of federal, provincial, threatened or endangered species.
- A fisheries habitat assessment will be provided due to the presence of suitable fish habitat. Existing data regarding fish species will be obtained from CVC and/or the MNRF and used for the fisheries assessment. The assessment will include a description of watercourses or other fish habitat on and/or adjacent to the Project Location.
- The fisheries assessment will include community sampling through electrofishing and/or netting during the appropriate season, under a collection permit issued by the MNRF
- A Headwater Drainage Features Assessment is required for potential headwater drainage features within the Project Location as per the *Evaluation, Classification, and Management of Headwater Drainage Features Guidelines* (TRCA & CVC, 2014).
- Incidental wildlife observed will be reported on and included in the report. The list will include an analysis for the presence of SAR, and Species of Conservation Concern.

### **Biophysical Analysis**

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- A biophysical analysis of the Project Location describing the ecology of the natural heritage features and functions (including components of the natural heritage system) within and adjacent to the Project Location should be provided. The analysis may include ecological function, wetland functions, natural heritage features and landscapes, benefits of importance to humans, and corridors and linkages, as required. A figure is to be provided which clearly shows the limits of features (including hazards), as well as their proposed setbacks and rationales.
- Mapping (at a minimum) will consist of the following:
  - a) Mapping will include a title, figure number, north arrow, legend and scale or scale bar.
  - b) A site location map that provides the regional or watershed context of the Project Location.
  - c) The extent of natural heritage features identified will be clearly demarcated on an air photo base, if applicable.
  - d) The locations of watercourses and waterbodies and an indication of their flow.
  - e) Vegetation communities will be delineated and identified using ELC.
  - f) The location of SAR, rare species, and/or populations will be identified, if appropriate.

- g) The location of any important wildlife features (i.e., hibernacula, den, stick nest, etc.) will be identified.
- h) Mapping will be done at a scale of 1:5000 (or other scale as agreed to by CVC).
- The biophysical analysis will address current policy, technical documents and legislation including but not limited to, the PPS (2014), Natural Heritage Reference Manual (2010), Significant Wildlife Habitat Technical Guide (2000), Significant Wildlife Habitat Ecoregion 7E Criterion Schedules (2015), etc.
- A visit to the site may be requested by CVC prior to, during, or upon receipt of the EIS.
- The staking of significant natural features boundaries (i.e., woodland, wetland boundaries etc.) by CVC may be requested. Staking will generally occur between the end of May and the end of October. Any staking that occurs outside of this time may require a confirmatory visit between May and October.

*Note: Natural Areas and the Top of Bank have been previously staked. In addition, a site walk was held on November 6, 2019 with CVC to confirm existing conditions on site.*

### Development Proposal

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- The EIS will, at a minimum, include a preliminary site plan showing the type(s) and location(s) of the proposed development overlaid on a recent orthophoto. The site plan will clearly show setbacks and/or buffers, including distances from proposed development areas and proposed structures to lot lines and/or to environmental features and functions designated for protection, where applicable.
- The EIS will describe other relevant issues (i.e., servicing, stormwater management, municipal drainage, open space dedication, hazards, etc.) from an ecological perspective, pending receipt of relevant reports from other disciplines, should they have the potential to impact the identified natural hazard/heritage features. These can be highlighted within the proposed development description or, where applicable, under the potential impact assessment.

### Assessment of Ecological Impacts

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- The potential impacts to the features and functions of natural areas will be identified and discussed.
- An assessment of the potential impact on significant wildlife habitat at a local, watershed and provincial (if applicable) level will be provided using the Ecoregion 6E Criterion Schedules (MNRF, 2015).
- In the case of significant natural heritage features and other significant natural features (as confirmed through field studies), the EIS will demonstrate that there is no development or site alteration within the feature with the exception of uses as specified in the OP and/or prior approvals. The EIS should determine appropriate buffers from significant natural features.

- ☒ If applicable, where natural features or natural vegetation communities are proposed for removal, the quantity of removal will also be included.
- ☒ The EIS should include one or more figures which overlays the proposed development on the ecological constraints of the site. The analyses should determine the area(s) and type(s) of natural features and function that may be directly and/or indirectly impacted by the proposed development. Proposed buffers which will protect natural features and functions should be clearly shown on figures, and rationale for buffer distances provided.

### **Analysis of Mitigation Measures**

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- ☒ Avoidance of natural heritage features is the preferred approach to mitigation unless otherwise specified in the OP and/or prior approvals.
- ☒ In cases where a natural hazard feature has been identified on a property, the EIS will demonstrate how natural heritage, natural resource and/or servicing considerations (i.e., grading) should be integrated into the proposed development plan.
- ☒ The EIS should provide a detailed outline of mitigation measures intended to eliminate or reduce potential construction-related impacts to areas designated for protection. Recommendations for Best Management Practices during construction should be provided. This may include silt fencing, tree protection, fencing, identification of timing or seasonal constraints to construction or restoration, etc.
- ☒ The EIS will list and describe mitigation measures to eliminate or reduce negative impacts to the natural areas features and functions, including but not limited to, edge management plans, buffer plantings, sediment control, low impact designs (LID), etc.
- ☒ Mitigation for negative impacts on the natural features or their ecological functions (or to achieve no net negative impact) may include, at the discretion of the planning authority in conjunction with CVC, approaches to replace lost areas or functions. If acceptable, replacement will, to the extent possible, occur within the same subwatershed as the proposed development or site alteration. The appropriate amount of replacement will be determined through discussions with CVC and the planning authority and will be agreed to by all parties in writing. Should there be a potential for the loss of a feature, or part of a feature, the potential removal and/or compensation will be addressed through correspondence with CVC.
- ☒ If monitoring is required, the details of a monitoring program will be agreed to in writing by CVC, planning authority and other parties.

## Conclusions

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The EIS will address the following:

- Conformity with the policies and requirements of the City of Mississauga and the Regional Municipality of Peel Official Plans.
- Conformity with the policies and requirements of other applicable planning documents (i.e., Oak Ridges Moraine Conservation Plan, Greenbelt Plan, PPS, etc.).
- Conformity with the requirements of CVC.

## Species at Risk

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Should any SAR or their habitat be identified during the EIS process and confirmed in the field, the Ministry of Environment, Conservation and Parks (MECP) will be notified and we will address any SAR requirements as outlined in the *Endangered Species Act, 2007* under separate cover with MECP. CVC will be informed of MECP approvals that are required, as necessary.

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We would to thank you for your time in establishing these Terms of Reference with us and look forward to working together with you on this and other projects as we move forward.

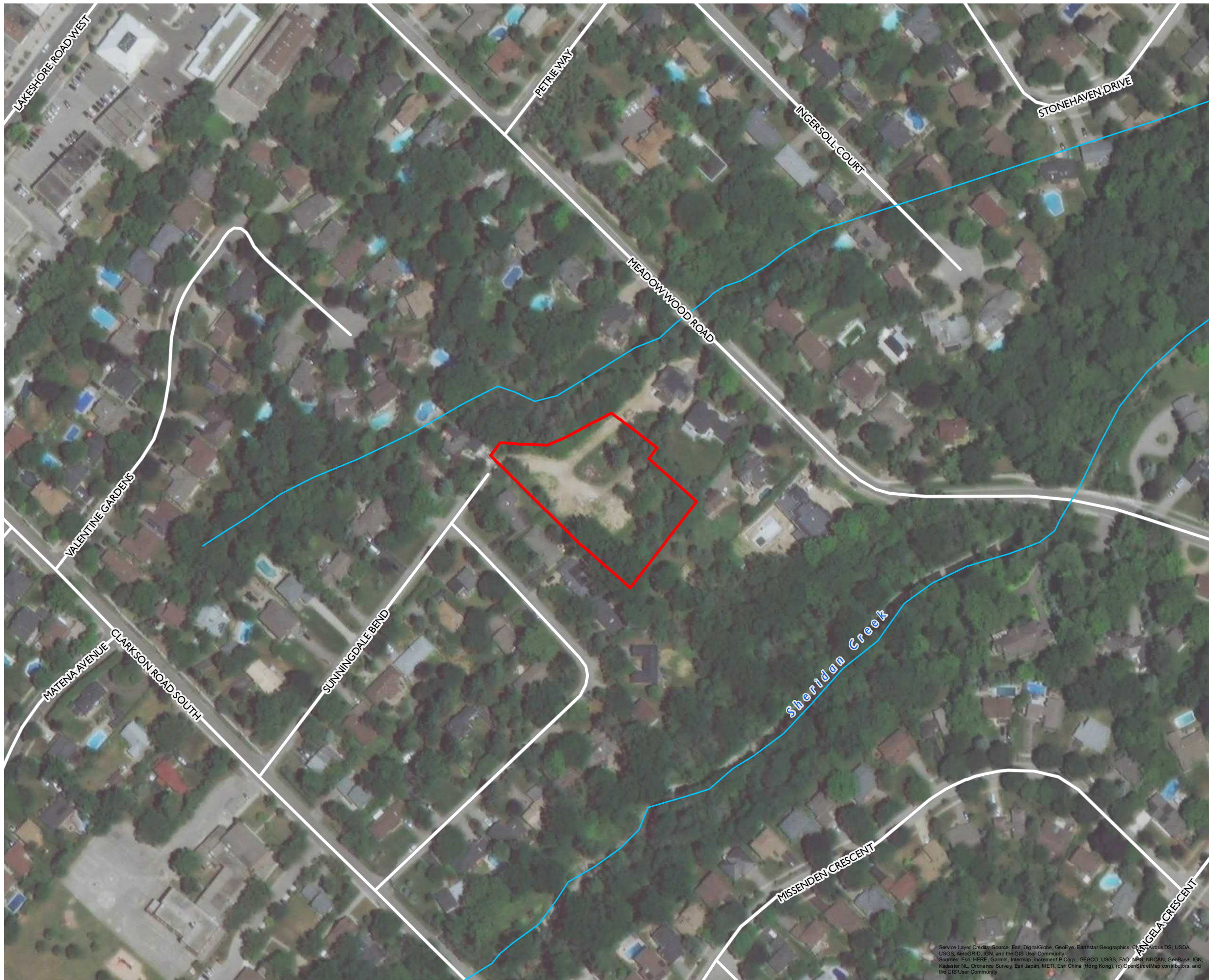
Please let me know if you have any questions.

Yours sincerely,

**DILLON CONSULTING LIMITED**



Whitney Moore  
Associate, Project Manager



# 890 MEADOW WOOD ROAD

## TERMS OF REFERENCE

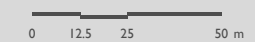
### PROJECT LOCATION

FIGURE I

- Project Location
- Road
- Watercourse



SCALE 1:2,000



MAP DRAWING INFORMATION:  
 DATA PROVIDED BY MNR  
 IMAGERY DATE: 7/10/2018

MAP CREATED BY: LK  
 MAP CHECKED BY: WM  
 MAP PROJECTION: NAD 1983 UTM Zone 17N

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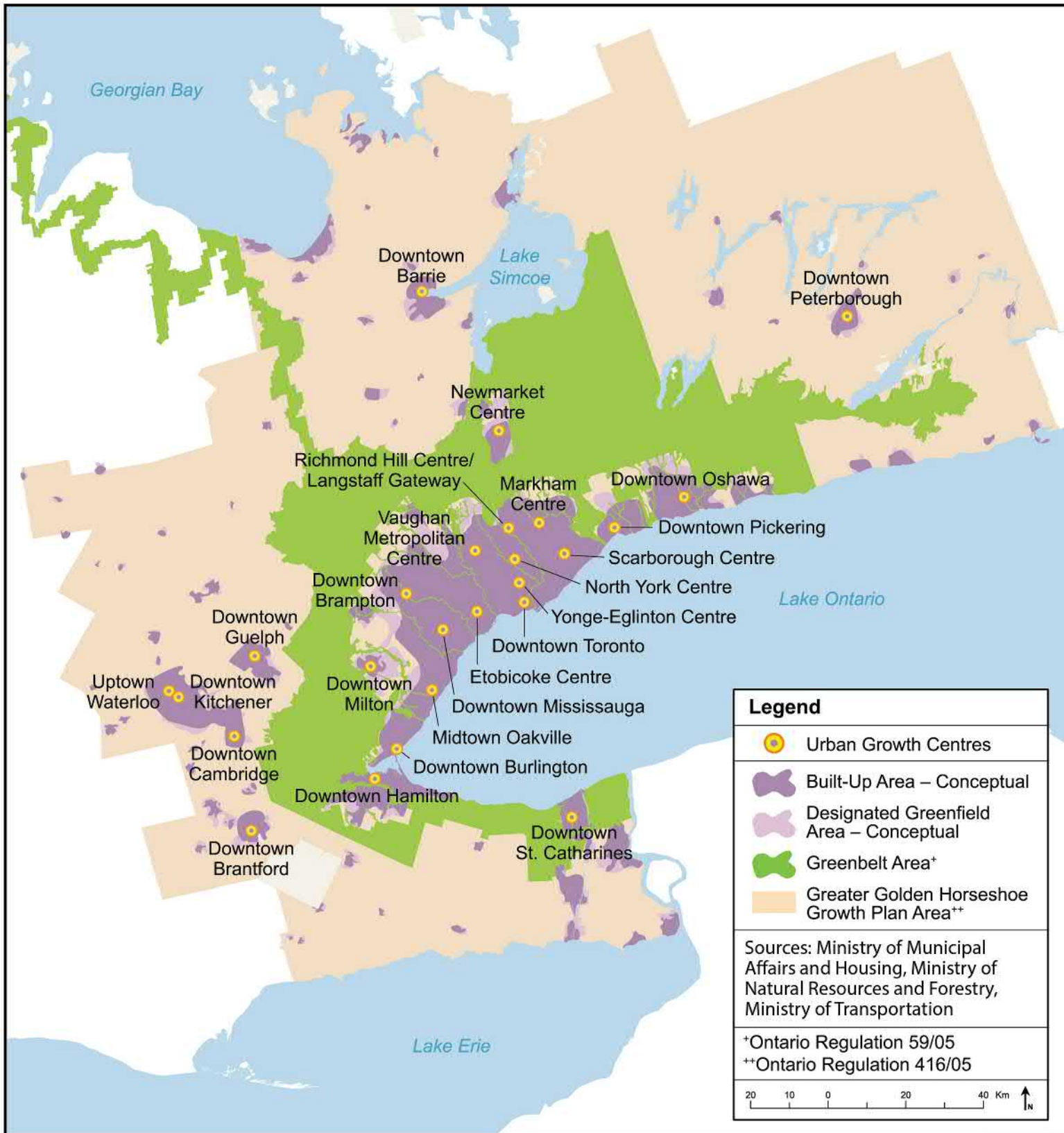
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 STATUS: DRAFT  
 DATE: 2020-05-19

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNR/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

# Appendix B

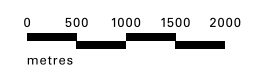
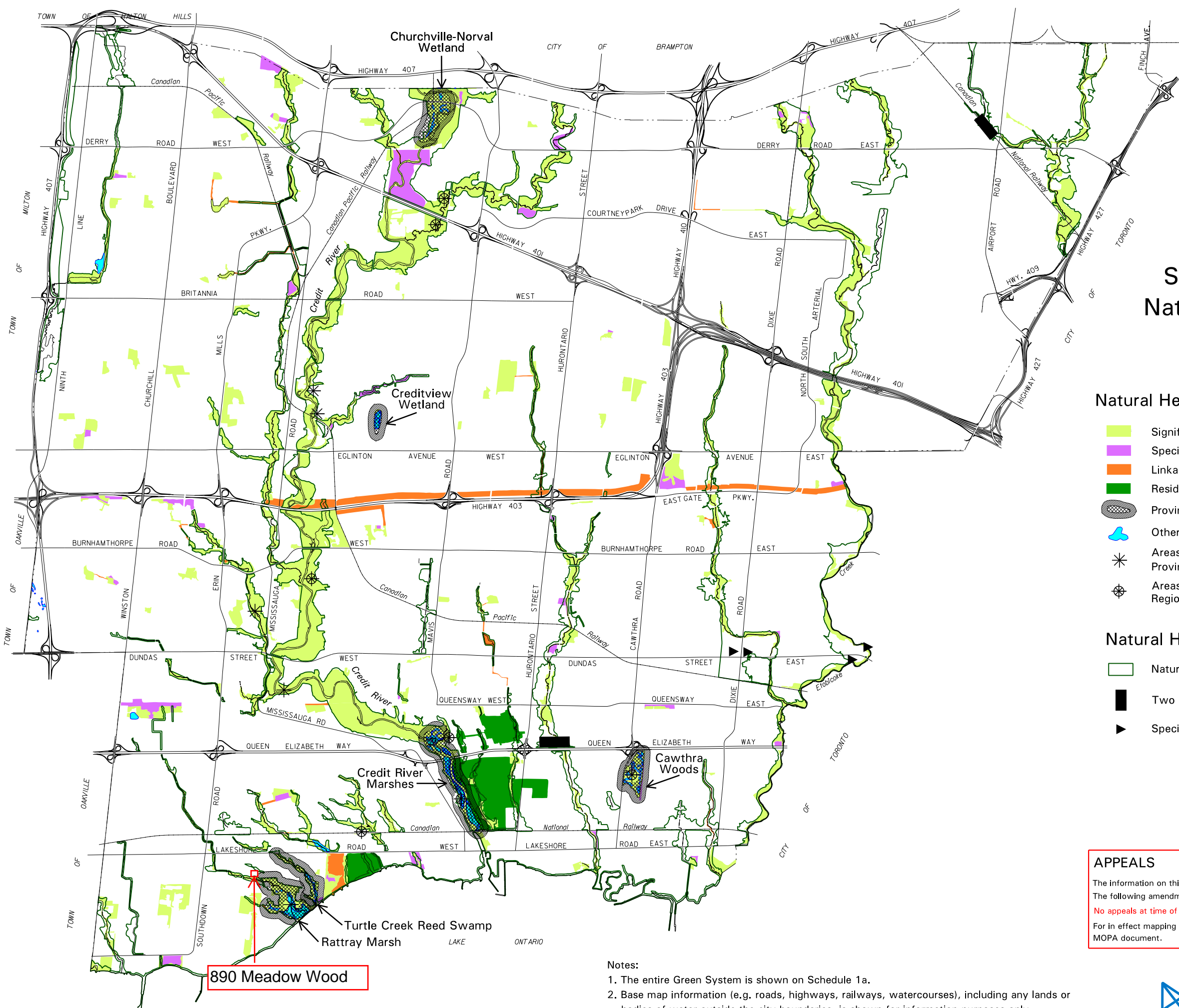
## *Background Mapping*





## SCHEDULE 4 Urban Growth Centres

Note: The information displayed on this map is not to scale, does not accurately reflect approved land-use and planning boundaries, and may be out of date. For more information on precise boundaries, the appropriate municipality should be consulted. For more information on Greenbelt Area boundaries, the Greenbelt Plan should be consulted. The Province of Ontario assumes no responsibility or liability for any consequences of any use made of this map.



## Schedule 3 Natural System

### Natural Heritage System:

- Significant Natural Areas and Natural Green Spaces
- Special Management Areas
- Linkages
- Residential Woodlands
- Provincially Significant Wetlands
- Other Wetlands
- Areas of Natural and Scientific Interest - Provincial Significance
- Areas of Natural and Scientific Interest - Regional Significance

### Natural Hazards:

- Natural Hazards
- Two Zone Floodplain Regulations
- Special Policy Area Floodplain

### APPEALS

The information on this schedule reflects Council adopted amendments. The following amendments are under appeal and affect this schedule:

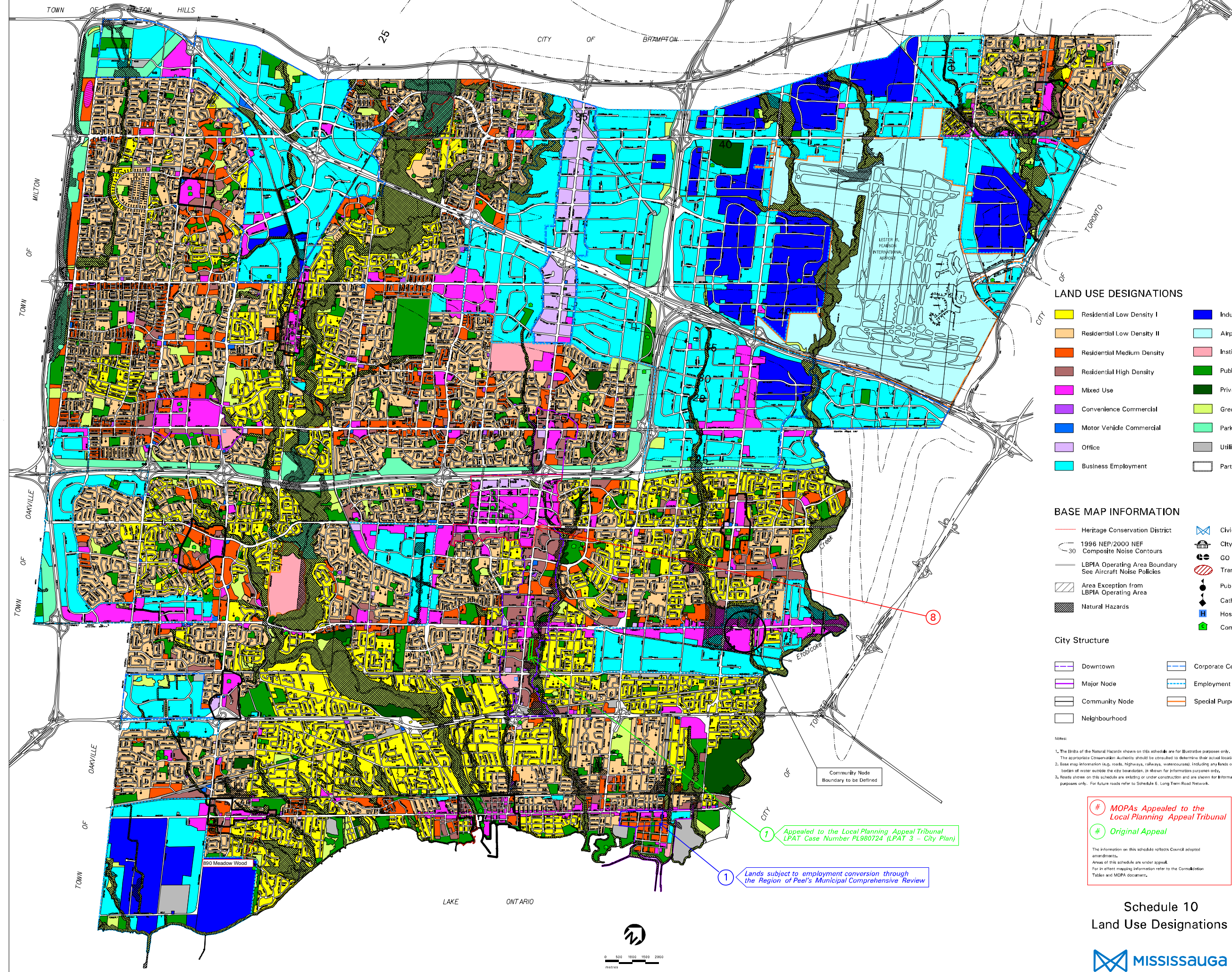
No appeals at time of consolidation.

For in effect mapping information refer to the Consolidation Tables and MOPA document.

890 Meadow Wood

### Notes:

1. The entire Green System is shown on Schedule 1a.
2. Base map information (e.g. roads, highways, railways, watercourses), including any lands or bodies of water outside the city boundaries, is shown for information purposes only.
3. The limits of the Natural Hazards shown on this Schedule are for illustrative purposes only. The appropriate Conservation Authority should be consulted to determine their actual location.



### LAND USE DESIGNATIONS

	Residential Low Density I		Industrial
	Residential Low Density II		Airport
	Residential Medium Density		Institutional
	Residential High Density		Public Open Space
	Mixed Use		Private Open Space
	Convenience Commercial		Greenlands
	Motor Vehicle Commercial		Parkway Belt West
	Office		Utility
	Business Employment		Partial Approval Area

### BASE MAP INFORMATION

	Heritage Conservation District		Civic Centre (City Hall)
	1996 NEP/2000 NEF Composite Noise Contours		City Centre Transit Terminal
	LBPIA Operating Area Boundary See Aircraft Noise Policies		GO Rail Transit Station
	Area Exception from LBPIA Operating Area		Transitway Station
	Natural Hazards		Public School
			Catholic School
			Hospital
			Community Facilities

### City Structure

	Downtown		Corporate Centre
	Major Node		Employment Area
	Community Node		Special Purpose Area
	Neighbourhood		

Notes:

- The limits of the Natural Hazards shown on this schedule are for illustrative purposes only. The appropriate Conservation Authority should be consulted to determine their actual location.
- Base map information (e.g., roads, highways, railways, watercourses), including any lands or bodies of water outside the city boundaries, is shown for information purposes only.
- Roads shown on this schedule are existing or under construction and are shown for information purposes only. For future roads refer to Schedule 6, Long Term Road Network.

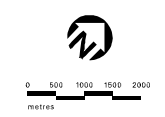
**# MOPAs Appealed to the Local Planning Appeal Tribunal**

**# Original Appeal**

The information on this schedule reflects Council adopted amendments. Areas of this schedule are under appeal. For in-effect mapping information refer to the Consultation Tables and MOPA documents.

1 Appealed to the Local Planning Appeal Tribunal LPAT Case Number PL980724 (LPAT 3 - City Plan)

1 Lands subject to employment conversion through the Region of Peel's Municipal Comprehensive Review






## Schedule 10 Land Use Designations

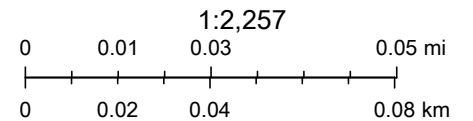


# Regulation Screening- Credit Valley Conservation



2021-03-30 5:33:30 PM

-  Credit River Watershed Boundary
-  Parcels around Regulated Area
-  Generic Regulation Mapping



York University, City of Toronto, Town of Oakville, Region of Peel, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, AAFC, NRCan

Credit Valley Conservation

# Appendix C

## *Species Screening Table*

TABLE 1: SAR and SCC with the Potential to Occur Within the Project Location

Family	Group	Scientific Name	Common Name	SARA Status <sup>1</sup>	ESA Status <sup>2</sup>	SRank <sup>3</sup>	Information Source <sup>4</sup>	Regulated Habitat	Habitat Requirements <sup>2,5</sup>	Potential Habitat in the Project Location	Rationale for Potential to Occur
<b>Birds</b>											
Apodidae	Swifts	<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	S4B,S4N	OBBA	FALSE	Commonly found in urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water.	No	Suitable habitat requirements have not been observed in the Project Location.
Caprimulgidae	Goatsuckers	<i>Chordeiles minor</i>	Common Nighthawk	THR	SC	S4B	OBBA	FALSE	Open ground; clearings in dense forests; ploughed fields; gravel beaches or barren areas with rocky soils; open woodlands; flat gravel roofs.	No	Suitable habitat requirements have not been observed in the Project Location.
Ardeidae	Bitterns, Herons, and Allies	<i>Ixobrychus exilis</i>	Least Bittern	THR	THR	S4B	OBBA	FALSE	Mostly found in freshwater and brackish marshes with tall stands of cattails or other vegetation.	No	Suitable habitat requirements have not been observed in the Project Location.
Emberizidae	Emberizids	<i>Ammodramus henslowii</i>	Henslow's Sparrow	END	END	SHB	NHIC	FALSE	Weedy hayfields, pastures or grasslands, wet meadows and, in winter, saltmarshes.	No	Suitable habitat requirements have not been observed in the Project Location.
Hirundinidae	Swallows	<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	OBBA	FALSE	<b>Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water.</b>	Yes	<b>Man-made structures have the potential to provide suitable habitat for Barn Swallow.</b>
Hirundinidae	Swallows	<i>Riparia riparia</i>	Bank Swallow	THR	THR	S4B	OBBA	FALSE	Sand, clay or gravel river banks or steep riverbank cliffs; lakeshore bluffs of easily crumbled sand or gravel; gravel pits, road-cuts, grassland or cultivated fields that are close to water; nesting sites are limiting factor for species presence..	No	Suitable habitat requirements have not been observed in the Project Location.
Icteridae	Blackbirds	<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B	NHIC, OBBA	FALSE	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha.	No	Suitable habitat requirements have not been observed in the Project Location.
Icteridae	Blackbirds	<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	S4B	NHIC, OBBA	FALSE	Open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent, open grassy areas >10 ha in size.	No	Suitable habitat requirements have not been observed in the Project Location.
Falconidae	Caracaras and Falcons	<i>Falco peregrinus</i>	Peregrine Falcon	SC	SC	S3B	OBBA, CBC	FALSE	Rock cliffs, crags, especially situated near water; tall buildings in urban centres; threatened by chemical contamination; reintroduction efforts have been attempted in numerous locations throughout Ontario.	No	Suitable habitat requirements have not been observed in the Project Location.
Podicipedidae	Grebes	<i>Podiceps grisegena</i>	Red-necked Grebe	---	---	S3B,S4N	---	FALSE	Prefer aquatic habitats during migration and non-breeding season. Nesting birds select mostly larger lakes.	No	Suitable habitat requirements have not been observed in the Project Location.
Turdidae	Thrushes	<i>Hylocichla mustelina</i>	Wood Thrush	END	SC	S4B	OBBA	FALSE	Carolinian and Great Lakes-St. Lawrence forest zones; undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12 m.	No	Suitable habitat requirements have not been observed in the Project Location.
Tyrannidae	Tyrant Flycatchers	<i>Contopus virens</i>	Eastern Wood-Pewee	SC	SC	S4B	OBBA	FALSE	<b>Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearing, edges; farm woodlots, parks.</b>	Yes	<b>Potential to occur in woodland habitat adjacent to the Project Location.</b>

Family	Group	Scientific Name	Common Name	SARA Status <sup>1</sup>	ESA Status <sup>2</sup>	SRank <sup>3</sup>	Information Source <sup>4</sup>	Regulated Habitat	Habitat Requirements <sup>2,5</sup>	Potential Habitat in the Project Location	Rationale for Potential to Occur
<b>Insects</b>											
Nymphalidae	Butterflies and Moths	<i>Danaus plexippus</i>	Monarch	SC	SC	S2N,S4B	OBA	FALSE	Caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Monarchs spend the winter in Oyamel Fir forests found in central Mexico.	Yes	Monarch are a commonly observed species, however the Project Location would not provide enough suitable habitat for significance.
Gomphidae	Dragonflies and Damselflies	<i>Gomphus quadricolor</i>	Rapids Clubtail	END	END	S1	NHIC	TRUE	Requires the clear, cool waters of medium to large, swiftly-flowing rivers with shallow gravel-based riffle/rapids areas, projecting rocks, muddy pools and wooded shorelines.	No	Suitable habitat requirements have not been observed in the Project Location.
<b>Fish</b>											
Cyprinidae	Fish and Eels	<i>Clinostomus elongatus</i>	Redside Dace	END	END	S2	NHIC	TRUE	Found in pools and slow-moving areas of small streams and headwaters with a gravel bottom. They are generally found in areas with overhanging grasses and shrubs, and can leap up to 10 cm out of the water to catch insects. During spawning, they can be found in shallow parts of streams, which are also popular spawning areas for other minnow species.	No	Suitable habitat requirements have not been observed in the Project Location.
<b>Herptiles</b>											
Caudata	Newts and Salamanders	<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	END	END	S2	OHA,	TRUE	Adults live in moist, loose soil, under logs or in leaf litter. Your best chance of spotting a Jefferson salamander is in early spring when they travel to woodland ponds to breed. They lay their eggs in clumps attached to underwater vegetation. By midsummer, the larvae lose their gills and leave the pond and head into the surrounding forest. Once in the forest, Jefferson salamanders spend much of their time underground in rodent burrows, and under rocks and stumps. They feed primarily on insects and worms.	No	Suitable habitat requirements have not been observed in the Project Location.
Chelydridae	Turtle	<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3	OHA	FALSE	Permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites; may nest at some distance from water; often hibernate together in groups in mud under water; home range size ~28 ha.	No	Suitable habitat requirements have not been observed in the Project Location.
Colubridae	Snakes	<i>Thamnophis sauritus</i>	Eastern Ribbonsnake (Great Lakes population)	SC	SC	S3	OHA	FALSE	Sunny grassy areas with low dense vegetation near bodies of shallow permanent quiet water; wet meadows, grassy marshes or sphagnum bogs; borders of ponds, lakes or streams; hibernates in groups.	No	Suitable habitat requirements have not been observed in the Project Location.

Family	Group	Scientific Name	Common Name	SARA Status <sup>1</sup>	ESA Status <sup>2</sup>	SRank <sup>3</sup>	Information Source <sup>4</sup>	Regulated Habitat	Habitat Requirements <sup>2,5</sup>	Potential Habitat in the Project Location	Rationale for Potential to Occur
Emydidae	Turtle	<i>Emydoidea blandingii</i>	Blanding's Turtle	THR	THR	S3	OHA	FALSE	Shallow water marshes, bogs, ponds or swamps, or coves in larger lakes with soft muddy bottoms and aquatic vegetation; basks on logs, stumps, or banks; surrounding natural habitat is important in summer as they frequently move from aquatic habitat to terrestrial habitats; hibernates in bogs; not readily observed.	No	Suitable habitat requirements have not been observed in the Project Location.
Emydidae	Turtle	<i>Graptemys geographica</i>	Northern Map Turtle	SC	SC	S3	OHA	FALSE	Inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female's mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled.	No	Suitable habitat requirements have not been observed in the Project Location.
Kinosternidae	Turtle	<i>Sternotherus odoratus</i>	Eastern Musk Turtle	SC	SC	S3	OHA	FALSE	Aquatic, except when laying eggs; shallow slow moving water of lakes, streams, marshes and ponds; hibernate in underwater mud, in banks or in muskrat lodges; eggs are laid in debris or under stumps or fallen logs at waters edge; often share nest sites; sometimes congregate at hibernation sites; not readily observed.	No	Suitable habitat requirements have not been observed in the Project Location.
	Turtle	<i>Lampropeltis triangulum</i>	Milksnake	SC	SC		OHA		Found in a variety of habitats but tend to use open habitats such as rocky outcrops, fields and forest edge. In rural areas this snake may be common, especially around barns where they thrive on the abundant mice. The milksnake hibernates underground, in rotting logs or in the foundations of old buildings.	No	Suitable habitat requirements have not been observed in the Project Location.
<b>Mammals</b>											
Canidae	Dogs, Foxes and Wolves	<i>Urocyon cinereoargenteus</i>	Gray Fox	THR	THR	S1	MWH	FALSE	Hardwood forests with a mix of fields and woods; swamps; wooded, brushy or rocky habitats; woodland farmland edge; old fields with thickets; dens in hollow log or tree; individual has numerous winter dens throughout its range which is > 40 ha.	No	Suitable habitat requirements have not been observed in the Project Location.
Vespertilionidae	Plain-nosed Bats	<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	MWH	FALSE	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.	Yes	Woodland adjacent to Project Location may provide suitable roosting habitat for the species.
Vespertilionidae	Plain-nosed Bats	<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3	MWH	FALSE	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.	Yes	Woodland adjacent to Project Location may provide suitable roosting habitat for the species.
Vespertilionidae	Plain-nosed Bats	<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	MWH	FALSE	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.	Yes	Woodland adjacent to Project Location may provide suitable roosting habitat for the species.



Family	Group	Scientific Name	Common Name	SARA Status <sup>1</sup>	ESA Status <sup>2</sup>	SRank <sup>3</sup>	Information Source <sup>4</sup>	Regulated Habitat	Habitat Requirements <sup>2,5</sup>	Potential Habitat in the Project Location	Rationale for Potential to Occur
Vespertilionidae	Plain-nosed Bats	<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?	MWH	FALSE	Can be found in a variety of forested habitats. They form day roosts and maternity colonies in older forest and occasionally in barns or other structures, and overwinter in caves. They forage over water and along streams in the forest.	Yes	Woodland adjacent to Project Location may provide suitable roosting habitat for the species.
<b>Plants</b>											
Juglandaceae	Walnuts	<i>Juglans cinerea</i>	Butternut	END	END	S3?	City	FALSE	Butternut usually grows alone or in small groups in deciduous forests. Prefers moist, well-drained soil and is often found along streams.	Yes	Butternut was identified by the City of Hamilton within the Project Location.

1 – Status identified by the Committee on the Status of Endangered Wildlife in Canada under the federal SARA, 2002;

2 – SAR in Ontario List under the provincial ESA, 2007;

3 – Ontario SRank; S5 = secure; S4= apparently secure; S3 = vulnerable; S2 = imperilled; SX = Extirpated; SH = Possibly Extirpated; SNA = non-native or exotic species to Ontario;

4 – NHIC = MNRF Natural Heritage Information Centre, MNRF Reg. Habitat = MNRF Regulated Habitat (O. Reg. 242/08); OBBA = Ontario Breeding Bird Atlas, MWH = Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0, OHA = Ontario Herpetofaunal Atlas; OBA = Ontario Butterfly Atlas; CBC = Christmas Bird Count; City = Correspondence with City of Hamilton.

5 – MNRF Significant Wildlife Technical Guide - Appendix G (2000).

# Appendix D

## *Site Photos*

Photo 1  
July 20, 2020  
Residential  
lands facing  
northeast



Photo 2  
July 20, 2020  
Woodlands  
facing  
northwest

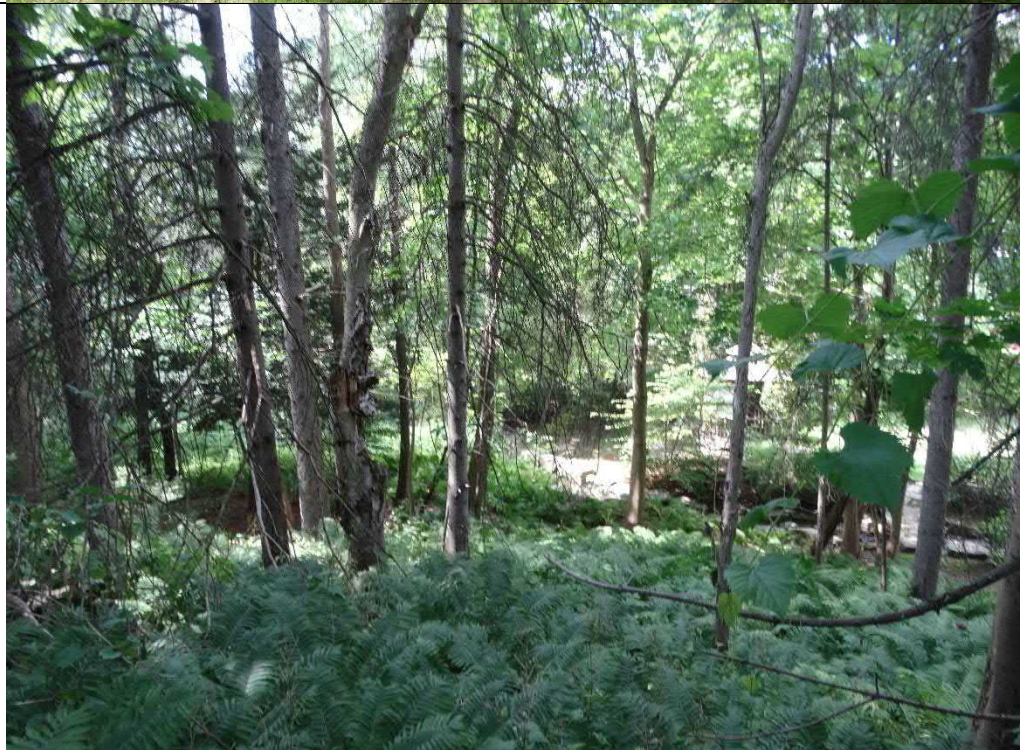


Photo 3  
July 20, 2020  
Edge of woodland facing north



Photo 4  
July 20, 2020  
Residential lands facing northeast



Photo 5  
July 20, 2020  
Residential  
lands facing  
east

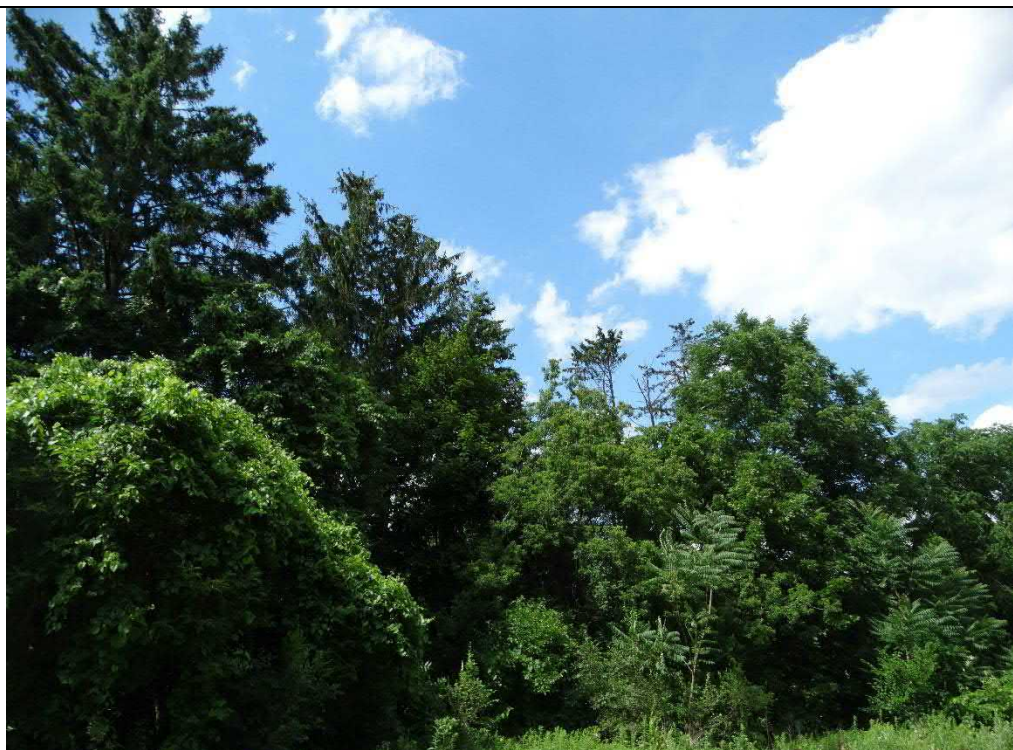


Photo 6  
July 20, 2020  
Residential  
lands facing  
southeast



Photo 7

August 27,  
2020

Butternut  
Health  
Assessment



Photo 8

August 27,  
2020

Butternut  
Health  
Assessment



Photo 9

August 27,  
2020

Butternut  
Health  
Assessment



Photo 10

August 27,  
2020

Butternut  
Health  
Assessment



Photo 11

August 27,  
2020

Butternut  
Health  
Assessment



Photo 12

August 27,  
2020

Butternut  
Health  
Assessment





# Appendix E

## *Botanical Inventory*

Table E1: Botanical Inventory at 890 Meadow Wood completed on July 27, 2020

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>2</sup>	S-Rank <sup>3</sup>	CC <sup>4</sup>
<i>Abies balsamea</i>	Balsam Fir	---	---	S5	5
<i>Acer platanoides</i>	Norway Maple	---	---	SNA	---
<i>Acer saccharum</i>	Sugar Maple	---	---	S5	4
<i>Ailanthus altissima</i>	Tree-of-heaven	---	---	SNA	---
<i>Alliaria petiolata</i>	Garlic Mustard	---	---	SNA	---
<i>Arctium minus</i>	Common Burdock	---	---	SNA	---
<i>Asclepias syriaca</i>	Common Milkweed	---	---	S5	0
<i>Carex spicata</i>	Spiked Sedge	---	---	SNA	---
<i>Chenopodium album</i>	White Goosefoot	---	---	SNA	---
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	---	---	S5	3
<i>Cirsium arvense</i>	Canada Thistle	---	---	SNA	---
<i>Convallaria majalis</i>	European Lily-of-the-valley	---	---	SNA	---
<i>Daucus carota</i>	Wild Carrot	---	---	SNA	---
<i>Dianthus armeria</i>	Deptford Pink	---	---	SNA	---
<i>Digitaria ischaemum</i>	Smooth Crabgrass	---	---	SNA	---
<i>Eragrostis cilianensis</i>	Stinkgrass	---	---	SNA	---
<i>Erigeron canadensis</i>	Canada Horseweed	---	---	S5	0
<i>Fallopia japonica</i>	Japanese Knotweed	---	---	SNA	---
<i>Fraxinus americana</i>	White Ash	---	---	S4	4
<i>Hedera helix</i>	English Ivy	---	---	SNA	---
<i>Juglans cinerea</i>	Butternut	END	END	S3?	6
<i>Juglans nigra</i>	Black Walnut	---	---	S4	5
<i>Matteuccia struthiopteris</i>	Ostrich Fern	---	---	S5	5
<i>Medicago lupulina</i>	Black Medic	---	---	SNA	---
<i>Morus alba</i>	White Mulberry	---	---	SNA	---
<i>Nepeta cataria</i>	Catnip	---	---	SNA	---
<i>Oxalis stricta</i>	European Wood-sorrel	---	---	S5	0
<i>Parthenocissus inserta</i>	Thicket Creeper	---	---	S5	3
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	---	---	S4?	6
<i>Picea abies</i>	Norway Spruce	---	---	SNA	---
<i>Poa compressa</i>	Canada Bluegrass	---	---	SNA	0
<i>Poa pratensis ssp. pratensis</i>	Kentucky Bluegrass	---	---	S5	0
<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	---	---	S5	4
<i>Quercus rubra</i>	Northern Red Oak	---	---	S5	6
<i>Rubus allegheniensis</i>	Alleghany Blackberry or Common Blackberry	---	---	S5	2
<i>Rubus occidentalis</i>	Black Raspberry	---	---	S5	2
<i>Rumex crispus</i>	Curly Dock	---	---	SNA	---
<i>Setaria viridis</i>	Green Foxtail	---	---	SNA	---

<b><i>Solanum dulcamara</i></b>	Climbing Nightshade or Bittersweet Nightshade	---	---	SNA	---
<b><i>Solidago altissima</i> ssp. <i>altissima</i></b>	Eastern Late Goldenrod	---	---	S5	1
<b><i>Sonchus oleraceus</i></b>	Common Sow-thistle	---	---	SNA	---
<b><i>Thlaspi arvense</i></b>	Field Penny-cress	---	---	SNA	---
<b><i>Thuja occidentalis</i></b>	Eastern White Cedar	---	---	S5	4
<b><i>Trifolium pratense</i></b>	Red Clover	---	---	SNA	---
<b><i>Trifolium repens</i></b>	White Clover	---	---	SNA	---
<b><i>Ulmus pumila</i></b>	Siberian Elm	---	---	SNA	---
<b><i>Vinca minor</i></b>	Periwinkle	---	---	SNA	---
<b><i>Wisteria sinensis</i></b>	Chinese wisteria	---	---	No rank	---
<b><i>Xanthium strumarium</i></b>	Rough Cocklebur	---	---	S5	2