

E.S. FOX LTD.

# MONTROSE ROAD NIAGARA - PARCEL D ENVIRONMENTAL IMPACT STUDY

APRIL 11, 2023





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E.S. FOX LTD.

PROJECT NO.: 221-01147-00  
DATE: APRIL 11, 2023

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# TABLE OF CONTENTS

1	INTRODUCTION .....	1
2	APPROACH .....	2
2.1	<b>Background Review .....</b>	<b>2</b>
2.2	<b>Field Assessments .....</b>	<b>3</b>
2.2.1	Vegetation and Ecological Land Classification (ELC) .....	3
2.2.2	Wildlife Surveys .....	4
2.2.3	Fish Habitat.....	4
3	POLICY REVIEW .....	6
3.1	<b>Provincial Policy Statement .....</b>	<b>6</b>
3.2	<b>Official Plan Policies .....</b>	<b>7</b>
3.2.1	Region of Niagara Official Plan (2022) .....	7
3.2.2	City of Niagara Falls Official Plan (2019).....	8
3.3	<b>Niagara Peninsula Conservation Authority .....</b>	<b>9</b>
3.4	<b>Migratory Birds Convention Act, 1994 .....</b>	<b>11</b>
3.5	<b>Federal Fisheries Act, 1985 .....</b>	<b>11</b>
3.6	<b>Endangered Species Act, 2007 .....</b>	<b>11</b>
4	EXISTING CONDITIONS .....	13
4.1	<b>Designated Features .....</b>	<b>13</b>
4.1.1	Environmental Planning Designations .....	13
4.1.2	Natural Heritage Features .....	14
4.2	<b>Vegetation and ELC .....</b>	<b>15</b>
4.3	<b>Wildlife .....</b>	<b>15</b>
4.3.1	Significant Wildlife Habitat .....	16
4.4	<b>Fish Habitat .....</b>	<b>17</b>
4.5	<b>Species at Risk .....</b>	<b>20</b>



5	PROPOSED WORKS .....	21
6	IMPACT ASSESSMENT .....	22
6.1	<b>Designated Features .....</b>	<b>22</b>
6.1.1	Wetlands.....	22
6.1.2	Woodlands.....	22
6.2	<b>Vegetation .....</b>	<b>22</b>
6.2.1	Cultural Vegetation Community Impacts.....	23
6.2.2	Indirect Impacts .....	23
6.3	<b>Wildlife and SAR.....</b>	<b>24</b>
6.3.1	SWH.....	24
6.3.2	SAR.....	25
6.4	<b>Fish Habitat .....</b>	<b>25</b>
7	MITIGATION MEASURES .....	26
7.1	<b>Project Planning .....</b>	<b>26</b>
7.2	<b>Vegetation and Flora.....</b>	<b>26</b>
7.3	<b>Wildlife and Wildlife Habitat .....</b>	<b>27</b>
7.4	<b>Fish Habitat.....</b>	<b>28</b>
8	POLICY COMPLIANCE .....	29
8.1	<b>Region of Niagara Official Plan (2022) .....</b>	<b>29</b>
8.2	<b>City of Niagara Falls Official Plan (2019) .....</b>	<b>29</b>
8.3	<b>Niagara Peninsula Conservation Authority .....</b>	<b>30</b>
9	CONCLUSIONS .....	31
10	REFERENCES.....	32



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***TABLES***

TABLE 4.1 EXISTING FISH HABITAT CONDITIONS  
SUMMARY TABLE ..... 19

TABLE 4.2 EXISTING FISH COMMUNITY SUMMARY  
TABLE..... 19

TABLE 6.1 DIRECT IMPACTS TO VEGETATION  
COMMUNITIES ..... 23

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***APPENDICES***

**A** FIGURES

**B** SPECIES LISTS

**B-1** Plant List

**B-2** Wildlife List

**C** SPECIES AT RISK SCREENING

**D** SIGNIFICANT WILDLIFE HABITAT SCREENING

**E** SITE PLAN

**F** AGENCY CORRESPONDENCE

# 1 INTRODUCTION

WSP has been retained by E.S. Fox Ltd. to provide engineering and environmental services for development of four parcels on Montrose Road and Grassy Brook Road in the City of Niagara Falls. Pre-consultation with the Region of Niagara and Niagara Peninsula Conservation Authority (NPCA) indicated the requirement for an Environmental Impact Study (EIS) for two of the parcels – Parcel A and Parcel D. This EIS has been prepared for Parcel D to characterise the natural heritage features, assess potential impacts to natural heritage features of the proposed works, and identify design and mitigation measures to minimize impacts.

Parcel D is located at 9515 Montrose Road, bounded by Montrose Road to the east, existing commercial development to the south, open greenspace with stormwater management pond to the west, and the Lower Grassy Brook Wetland Complex Provincially Significant Wetland (PSW) to the north. The Parcel is composed entirely of open cultural meadow, with PSW and wooded areas on the adjacent lands to the north. The Study Area considered in this EIS includes the Parcel, and adjacent lands up to 120 m from the Parcel limits, depending on property access. The Parcel and Study Area are illustrated on the figures in Appendix A.

The Terms of Reference (TOR) for the study were developed by WSP and submitted to regulatory agencies for comment on November 12, 2021. Feedback from Niagara Region and NPCA was received and incorporated, and the updated TOR was approved February 23, 2022. Correspondence with agencies regarding the TOR is included in Appendix F.

The study incorporates existing background data from publicly available databases and natural heritage mapping. To confirm and supplement background data, environmental agencies were contacted to request additional comment and data, and WSP undertook field investigations in spring and summer of 2022. This report documents the existing natural environment conditions, presence of Natural Heritage Features (NHF) as defined by regulatory policy and guidance documents, an assessment of Species at Risk (SAR) potential, and an analysis of potential impacts from the proposed development. Mitigation measures are proposed to minimize potential impacts, and permit requirements are identified.

# 2 APPROACH

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## 2.1 BACKGROUND REVIEW

### PLANNING, LEGISLATION AND POLICY DOCUMENTS

The following planning, legislation, and policy documents have been reviewed in the context of the project:

#### **FEDERAL**

- Species at Risk Act (SARA) (Government of Canada 2002)
- Migratory Birds Convention Act (MBCA) (Government of Canada 1994)
- Fisheries Act (Government of Canada 1985)

#### **PROVINCIAL**

- Provincial Policy Statement (Ontario Ministry of Municipal Affairs and Housing 2020)
- Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (Ontario Ministry of Natural Resources 2010)
- Endangered Species Act (ESA) (Government of Ontario 2007)
- Ontario Regulation 242/08 under Endangered Species Act (Government of Ontario 2008)
- Growth Plan for the Greater Golden Horseshoe (Government of Ontario 2020)
- Lake and Rivers Improvement Act (Government of Ontario 1990)
- Public Lands Act (Government of Ontario 1990)
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (Ontario Ministry of Natural Resources and Forestry 2015)

#### **REGIONAL / LOCAL**

- Draft Consolidated Niagara Official Plan (Region of Niagara, Draft March 2022)
- Niagara Falls Official Plan (City of Niagara Falls, Office Consolidation 2019)
- NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and The Planning Act (NPCA, 2020)

For a complete list of information sources consulted, please refer to the References in Section 10.

### PREVIOUS STUDIES AND DATABASE RESOURCES

- Montrose Road and Lyons Creek / Biggar Road Municipal Class Environmental Assessment (MCEA) (Parsons Inc. 2021) – This study covers the Montrose Road corridor which extends onto the eastern side of Parcel D
- Grand Niagara Secondary Plan – Environmental Impact Study (Savanta, 2017) – This study covers the area north of Parcel D including the Grassy Brook corridor
- Niagara Falls Viewer, Environment and Land Regulation Mapping (City of Niagara Falls)
- Niagara Natural Areas Inventory (2009)
- NPCA Regulation Mapping and Open Data Portal
- Land Information Ontario (LIO) Mapping (Government of Ontario 2020)

- Ministry of Natural Resources and Forestry’s (MNR) Natural Heritage Information Center (NHIC) database
- Department of Fisheries and Oceans (DFO) Aquatic SAR Mapping (Government of Canada 2021)
- Google Maps Current and Historical Aerial Photography (Google 2021)

## ONLINE SPECIES OBSERVATION DATABASES

- Ontario Reptile and Amphibian Atlas (Ontario Nature 2021)
- Ontario Breeding Bird Atlas (Bird Studies Canada 2021)
- eBird (Cornell Lab of Ornithology 2021)
- iNaturalist (Canadian Wildlife Federation et.al. 2021)
- Ontario Butterfly Atlas (Toronto Entomologists Association 2021)

## AGENCY CORRESPONDENCE

Natural heritage information for the Study Area was requested from NPCA, the MNR, and the Ontario Ministry of the Environment, Conservation and Parks (MECP) on March 17, 2022. Correspondence is included in Appendix F.

- MNR – Response Received March 18, 2022
  - Provided wetland evaluation records for the Welland River East PSW Complex and Lower Grassy Brook PSW Complex
  - Provided timing window for in-water work: No in-water work from March 1 to July 1
- MECP – no response received at this time
- NPCA – Response received March 23, 2022
  - A response was received providing GIS Open Data Mapping

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## 2.2 FIELD ASSESSMENTS

Field survey components, as confirmed by Niagara Region and NPCA in the TOR, are described below. Data analysis and evaluation has included preparation of species inventories, habitat assessments, and evaluations of significance and sensitivity using relevant guidelines and policy, as described herein.

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### 2.2.1 VEGETATION AND ECOLOGICAL LAND CLASSIFICATION (ELC)

Surveys were conducted by a qualified ecologist certified in Ecological Land Classification (ELC) for Southern Ontario. These surveys documented the characteristics of the natural and culturally influenced vegetation communities. Vegetation fieldwork and associated data assessment involved:

- Classifying, mapping and evaluating vegetation communities within the Study Area conducted over 3 visits on May 17, July 11, and September 7, 2022. Data collected on these dates include:
  - Vegetation communities were classified using ELC (Lee et. al. 1998) and ELC Ecosystem Catalogue: 2008 Version (Lee 2008).
  - Botanical inventory and preparation of a vascular plant species list
  - A targeted search for significant or sensitive flora, including SAR
  - Taking general notes on community health and site disturbance; and representative site photos.

- The delineation of wetland communities as determined through ELC analysis was staked on July 11, 2022 and confirmed at a site walk on July 12, 2022, with a WSP qualified ecologist, the client, NPCA, and Niagara Region in attendance.

The data collected through the above field surveys were analyzed for classification and sensitivity with the following methods and references:

- Evaluation of plant species status using the List of the Vascular Plants of Ontario's Carolinian Zone Ecoregion 7E (Oldham 2017) for regional significance; the NHIC website for provincial rarity ranks (i.e., S-Ranks); the Species at Risk in Ontario list (MECP; updated periodically) for provincial status designations; and the Canadian Species at Risk list (COSEWIC; updated periodically) for national status designations. Nomenclature generally follows NHIC and VASCAN (2021)
- Analysis of floristics of all inventoried plant species was completed by using their Coefficient of Conservatism (CC) and Coefficient of Wetness (CW), per the Floristic Quality Assessment System for Southern Ontario (Oldham et. al. 1995), which uses an objective, quantitative method to compare the relative quality of two or more vegetation communities. The quality of a particular vegetation community can be reflected in the richness of conservative species within the community (Oldham et. al. 1995)
- Evaluation of vegetation community significance using Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario (Bakowsky 1996; NHIC website)

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## 2.2.2 WILDLIFE SURVEYS

General wildlife surveys and habitat assessments were undertaken during the field survey, as follows:

- Amphibian Calling Surveys at potential wetland habitat in the Lower Grassy Brook PSW, conducted over three visits on April 12, May 24 and June 21, 2022. Station AC2 at the Montrose Road crossing of Grassy Brook, and Station AC3 at the northwest corner of the Parcel (see Figure 3 for locations)
- Turtle emergence survey conducted under suitable weather conditions in spring (Sunny, temperature >10°C) at potential overwintering habitat in the Lower Grassy Brook PSW on April 12, 2022
- Potential bat habitat survey in early spring to assess cavity trees or other potential habitat in the Study Area
- Breeding Bird Surveys following standard methodology of the Ontario Breeding Bird Atlas, conducted over two visits on May 25 and June 13, 2022 (see Figure 3 for Point Count locations)
- Recording all direct wildlife observations and wildlife signs (including browse, track / trails, animal scat, bird nesting activity, tree cavities, burrows and vocalizations) and identifying potential wildlife usage and habitat functions associated with vegetation communities at all other site visits
- Assessing SAR habitat availability
- Assessing potential for Significant Wildlife Habitat (SWH) features within the Study Area

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## 2.2.3 FISH HABITAT

Fish habitat was assessed in existing and potential watercourses within 120 m of Parcel D on September 1, 2022. Specifically, Grassy Brook and any possible contributing sources to the watercourse were assessed for fish habitat. Where fish habitat was identified, the aquatic assessment included collection of representative photographs and general notes on the following:

- Flow condition, clarity, general gradient and velocities
- Channel dimensions and general character
- Morphology (e.g., riffles, pools) and substrate type
- Cover opportunities (i.e., woody debris, undercut banks, boulders, aquatic vegetation)

- Bank height, character and stability / evidence of erosion
- Riparian vegetation (general)
- Physical barriers to fish movement
- Potential specialized and important habitat areas including potential spawning habitat, good nursery cover, holding habitat (deeper refuge pools)
- Evidence of groundwater discharge
- Disturbances, habitat limitations and potential habitat enhancement opportunities
- No fish sampling was conducted given the existing background data available on the fish community in Grassy Brook.

# 3 POLICY REVIEW

Planning legislation and policies pertinent to the Site have been reviewed and are summarized in the following sections. An overview of key policies and implications is provided along with an assessment of the policy as it relates to NHFs within and adjacent to the Site.

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## 3.1 PROVINCIAL POLICY STATEMENT

The PPS (OMMAH, 2020) is a planning document that provides a framework for, and governs development within, the Province of Ontario. In order to preserve various ecological resources deemed significant in the Province, development lands must be assessed for the presence of NHFs prior to construction. These NHFs (listed below) are both defined and afforded protections under the PPS. Linkages between NHF, surface water and groundwater features are also recognized and afforded similar protections under the policy. Section 2.1.2 of the PPS also requires that the diversity and connectivity of all NHFs and the long-term ecological function of natural heritage systems be maintained, restored or improved where possible. Further to this, natural heritage systems within Ecoregion 7E are to be identified as per Section 2.1.3.

Under the PPS (OMMAH, 2020), development or site alteration is prohibited within significant wetlands and in significant coastal wetlands, but may be allowed adjacent to these features provided the adjacent lands have been evaluated and it has been demonstrated that there will be no negative impacts to these features or their ecological functions. Development may be permitted in or adjacent to significant woodlands and significant valleylands in Ecoregion 7E, significant wildlife habitat (SWH), significant areas of natural and scientific interest (ANSI), and coastal wetlands in Ecoregion 7E provided there will be no negative impacts to these features or their ecological function due to the proposed undertaking. In addition, development and site alteration is not permitted in fish habitat, or habitat of endangered or threatened species, unless in accordance with provincial and federal legislation.

NHFs relevant to Parcel A as defined by the PPS (OMMAH, 2020) include:

- Fish Habitat;
- Habitats of Endangered and Threatened Species;
- Area of Natural or Scientific Interest (ANSI);
- Significant Wetlands;
- Significant Coastal Wetlands;
- Other Coastal Wetlands in Ecoregion 7E;
- Significant Wildlife Habitat;
- Significant Woodlands in Ecoregion 7E
- Significant Valleylands in Ecoregion 7E.

An assessment of the presence of these NHF's on Parcel D and adjacent lands is included in the Existing Conditions – Designated Features section below (Section 4.1). The identified impacts and recommended mitigation measures for NHFs identified in the Study Area is provided in Section 6.

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## 3.2 OFFICIAL PLAN POLICIES

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### 3.2.1 REGION OF NIAGARA OFFICIAL PLAN (2022)

The Natural Environment System in the Niagara Region Official Plan (ROP) is composed of a Natural Heritage System (NHS) including wetlands, woodlands, valleylands, wildlife habitat areas, and linkages, and a Water Resource System (WRS) composed of groundwater and surface water areas. The intent of the natural environment system is to preserve and enhance the biodiversity, connectivity of natural features, and long-term ecological function and the ecological and hydrological integrity of water resources and the various watersheds in Niagara.

Natural Heritage Features (NHF) and Hydrological Features (HF) that comprise the Natural Environment System in the ROP are:

#### *Key Natural Heritage Features*

- Habitat of Endangered and Threatened Species
- Fish Habitat
- Provincially Significant Wetlands (PSW)
- Other Wetlands
- Life Science Areas of Natural and Scientific Interest (ANSI)
- Significant Valleylands
- Significant Woodlands
- Significant Wildlife Habitat (SWH)

#### *Key Hydrologic Features*

- Permanent and Intermittent Streams
- Inland lakes
- Seepage Areas and Springs
- Wetlands

#### *Other Natural Heritage Areas*

- Other woodlands
- Earth Science ANSI
- Linkages

Some of these features are mapped in Schedule C2 of the ROP, however not all features comprising the NES are mapped. Other features, for example, SWH, habitat of Endangered or Threatened species, and Fish Habitat, are defined as part of the NES, but are not mapped in the ROP. All features are defined in Schedule L of the ROP, and assessments through environmental studies may be required to identify these features. Additional hydrologic features including groundwater features and hazard lands are included in the NES, but are not considered as part of this ecological assessment.

Policy 3.1.4 states that changes to the classification or limits of NHFs may be considered through submission of an EIS based on an approved TOR by the Region. If the changes can be justified to the satisfaction of the region, an amendment to the ROP is not required.

Policies in section 3.1.9 of the ROP are specific to development and setbacks to the NES features outside of the Provincial Natural Heritage System and within a Settlement Area (i.e., urban areas).

3.1.9.5.1 Development and site alteration shall not be permitted in the following natural heritage features and areas:

- a) provincially significant wetlands;
- b) significant coastal wetlands; and
- c) significant woodlands

3.1.9.5.2 Development and site alteration shall not be permitted in the following natural heritage features and areas unless it has been demonstrated through the preparation of an environmental impact study that there will be no negative impacts on the natural features or their ecological functions:

- a) other woodlands;
- b) significant valleylands;
- c) significant wildlife habitat;

3.1.9.5.4 Notwithstanding any other policies of this Plan, development and site alteration in, and adjacent to watercourses, provincially significant wetlands, and other wetlands that are regulated by the Conservation Authority, may also be subject to the regulations and land use planning policies of the Conservation Authority.

The ROP does note that offsetting policies allowing impacts to wetlands are not supported by the Region, limiting options for encroachment of development into those features.

For development adjacent to natural heritage features outside of a Provincial Natural Heritage System (i.e., within a Settlement area), setbacks are required from identified Natural Heritage Features and Hydrologic Features. Minimum buffer widths are specified for features outside of Settlement Areas, however, within settlement areas the policy states that buffers are to be determined through an EIS. However, policy 3.1.9.3 states that where Conservation Authority buffer requirements apply, those shall be followed and reductions must be approved by the local municipality, Region, and the Conservation Authority.

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## 3.2.2 CITY OF NIAGARA FALLS OFFICIAL PLAN (2019)

The City of Niagara Falls Official Plan (2019) intends to play a major role in the protection and conservation of resources. The Natural Heritage Policies of the Official Plan apply to Natural Heritage Features identified in the Official Plan, the Regional Official Plan, or by the Ministry of Natural Resources and Forestry. Natural Heritage Features are mapped on Schedules A and A-1, and Appendices III-A to III-E, and composed of features designated as Environment Protection Area (EPA), Environmental Conservation Area (ECA), linkages and natural corridors, water resources, Municipal Drains and other natural heritage features. Under Policy 11.1.17 an EIS is required for proposed development within or adjacent to an EPA or ECA, or natural heritage feature.

Section 11.2 of the Official Plan provides policies in relation to EPA and ECA designations.

*11.2.3 The limits of the EPA and ECA designations and their adjacent lands may be expanded or reduced from time to time as new environmental mapping and studies are produced by the Ministry of Natural Resources or the Niagara Peninsula Conservation Authority or through site specific applications where produced by qualified environmental consultants and approved by the appropriate authority.*

*Where an Environmental Impact Study has concluded that an expansion to the EPA designation or its adjacent lands is warranted by the identification of a significant natural feature/function or habitat, the Official Plan shall be amended to appropriately reflect the areas to be protected. Minor reductions or minor expansions to the limits of EPA or its adjacent lands on Schedule A may be made without amendment to this Plan.*

Development or site alteration is not permitted within the EPA designation except where permitted by the NPCA for wildlife management, conservation, or passive recreational uses.

*11.2.13 The EPA designation shall apply to Provincially Significant Wetlands, NPCA regulated wetlands greater than 2ha in size, Provincially Significant Life ANSIs, significant habitat of threatened and endangered species, floodways and erosion hazard areas and environmentally sensitive areas*

A vegetated buffer must be established around natural features within the EPA.

*11.2.16 A minimum vegetated buffer established by an Environmental Impact Study (EIS) shall be maintained around Provincially Significant Wetlands and Niagara Peninsula Conservation Area Wetlands greater than 2 ha in size. A 30m buffer is illustrated on Schedule A-1 for reference purposes. The precise extent of the vegetated buffer will be determined through an approved EIS and may be reduced or expanded. New development or site alteration within the vegetated buffer is not permitted.*

The ECA designation is intended to provide for the protection of natural heritage features, and allows for some uses within the area including wildlife management, conservation, recreational uses and uses ancillary to these activities.

*11.2.22 The Environmental Conservation Areas designation contains significant woodlands, significant valleylands, significant wildlife habitat, fish habitat, significant Life and Earth Science ANSIs, sensitive ground water areas, and locally significant wetlands or NPCA wetlands less than 2ha in size.*

Vegetated buffers are required under policies in Section 11.2.26 and 11.2.28 for fish habitat and valleylands respectively, as determined through provincial, federal, and Conservation Authority requirements and policies. Policy for buffers to woodlands is covered in Policy 11.1.40, stating that vegetative buffer targets set through watershed studies and EIS's should be met through the protection of land adjacent to water features and woodlands.

Within the Parcel D Study Area, the Lower Grassy Brook PSW is designated as EPA, the wooded area to the west of the Parcel is designated as ECA, and the remainder of the Parcel is mapped as Adjacent Lands on Schedule A-1. However, the boundary of the wetland as delineated in this study (see Section 4.1.2 for details) has been amended to include the wooded (swamp) area as part of the PSW, which would define it as EPA per the text of the Official Plan.

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### 3.3 NIAGARA PENINSULA CONSERVATION AUTHORITY

The Conservation Authorities Act gives individual conservation authorities the power to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and large inland lakes and shorelines, watercourses, hazardous lands and wetlands. Regulations made under the Conservation Authorities Act specify the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations managed by individual Conservation Authorities. These regulations apply to lands within river or stream valleys, flood plains, wetlands, watercourses, lakes, hazardous lands or lands within 120 m of a PSW or wetlands greater than 2 hectares, or lands within 30 m of non-provincially significant wetlands. Development or site alteration within these regulated areas may be permitted provided development is conducted in accordance with existing policies.

The majority of the Site occurs within the jurisdiction of the NPCA and a permit under Ontario Regulation 155/06 may be required for work within the regulated area. It is noted that sections of the provincial Bill 23 that came into force on January 1, 2023 removes the function of Conservation Authorities to provide commenting services on municipal planning applications or to issue permits under their regulation on the basis of Natural Heritage. The mandate of Conservation Authorities is limited to regulation of flooding, erosion, and hazard lands. Therefore, the policies of the NPCA regarding development in and adjacent to wetlands, may be considered natural heritage and not applicable for permits under Regulation 155/06. However, the protections and mitigations regarding natural heritage features addressed in existing NPCA policies still reflect the in-force protections of these features in municipal and provincial legislation and policy. Therefore, compliance with the NPCA wetland policies is an accepted industry standard of best practices and will align with compliance for planning applications under municipal jurisdiction as well.

The NPCA released an updated policy document Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority (November 2022). However, communication from NPCA with the release indicated that applications received by November 18, 2023 for projects that had pre-consultation meetings prior to November 18, 2022 would be subject to the previous policy document (Policies for the Administration of

Ontario Regulation 155/06 and The Planning Act). The relevant policies from the 2018 guidance document are summarized below.

Section 6 is regarding development within valleylands, erosion hazards, and setbacks. It is not within the scope of the EIS to determine these limits and setbacks on the site, however for context the setback is defined below:

*6.2.5.1 Erosion Access Allowance – A minimum setback of 7.5 metres (25 feet) from the NPCA approved physical top of slope (surveyed by the applicant in accordance with the policies of this document) or the location of the Stable Top of Slope (whichever is furthest landward) shall be required.*

Section 8 is regarding development in wetlands and associated areas of interference.

*8.2.2.1 Development and Interference – Unless otherwise stated in this Document, no development and/or site alteration shall be permitted within a wetland.*

Provision for development within a wetland is provided in Policy 8.2.2.8, provided the wetland has been evaluated under the Ontario Wetland evaluation System (OWES) as non-significant, that the development will not have a negative impact on the hydrological or ecological function of the wetland, and that a restoration and monitoring program has been approved. The OWES protocol has recently been updated by MNRF, and MNRF is no longer an approval body for the designation of PSW, as long as evaluation is conducted by a qualified person trained in the OWES protocol.

The Area of Interference of a PSW is defined as 120 m from the boundary of the wetland. Policies regarding development within the area of interference are found in Section 8.2.3.

*8.2.3.1 Development within 30 metres of a Wetland – Unless otherwise stated in this Document, no development and site alteration shall be permitted within 30 metres (98 feet) of a wetland.*

*8.2.3.5 Proposed New Development within 30 metres of a Wetland*

*c) For major development (as determined by the NPCA) including, but not limited to; plans of subdivision; extensions of draft approval for existing plans; and, major commercial, industrial, or institutional uses, no new development is permitted within 30m of a PSW. Reductions will only be considered based on a site specific evaluation by NPCA staff to determine whether a reduction is warranted, depending on scale, nature and proximity of the proposed development, the following may be taken into consideration:*

- I. The nature of the proposed development/site alteration;*
- II. The proximity to the wetland;*
- III. Adjacent land use;*
- IV. The condition of the 30 metre Regulated area;*
- V. The extent of existing natural buffer;*
- VI. Restoration of buffer functions;*
- VII. Presence of existing roads;*
- VIII. Removal of invasive species;*
- IX. Presence of sensitive ecological features; and,*
- X. Other ecological or hydrological function considerations specific to the site; and,*
- XI. Other items as required*

Policy 8.2.3.6 state that in general, development may be permitted between 30 metres and 120 metres of a PSW where there are no negative impacts on the ecological or hydrological function of the wetland.

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## 3.4 MIGRATORY BIRDS CONVENTION ACT, 1994

Most birds in Canada are protected by the federal *Migratory Birds Convention Act* (MBCA; Canada 1994), which prohibits the disturbance or destruction of migratory birds, their eggs and nests on all lands in Canada, even incidentally. Upon the enforcement of the Migratory Birds Regulations, 2022 (MBR, 2022; Canada 2022) in July 2022, nest protection has been limited to active nests for most migratory bird species. Schedule 1 of the MBR, 2022 identifies 18 migratory bird species whose nests are protected year-round and must be confirmed inactive for a defined period (ranging between 12 and 36 months depending on the species) before they can be disturbed or destroyed. The nests must also be registered at the start of the defined period.

Although Environment and Climate Change Canada (ECCC) can issue permits allowing the destruction of nests or to prevent damage being caused by birds, there are currently no permits available to exempt development, including maintenance and rehabilitation activities. ECCC advises that proponents schedule activities outside of the migratory bird nesting season to avoid incidental take. Proponents can apply for a damage or danger permit to remove or actively deter migratory birds from structures if it can be clearly demonstrated that the bird activity is causing damage to the structure or poses a health and safety concern for people (e.g., large nesting gull colonies generating waste in public places).

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## 3.5 FEDERAL FISHERIES ACT, 1985

The purpose of the federal *Fisheries Act* (Canada 1985) is to maintain healthy, sustainable, and productive Canadian fisheries through the prevention of pollution and the protection of fish and their habitat. Under the *Fisheries Act* (Canada 1985), work in and near water must comply with the fish and fish habitat protection provisions of the *Fisheries Act* by incorporating measures to avoid (DFO 2019):

- causing the death of fish
- harmful alteration, disruption, or destruction (HADD) of fish habitat in your work, undertaking or activity .

All projects where work is being proposed that cannot avoid impacts to fish or fish habitat or are at high risk of causing impacts require a Fisheries and Oceans Canada (DFO) project review (DFO 2019). If potential impacts can be avoided, project approval is not required (DFO 2020).

When reviewing a project, DFO will identify potential risks of the project to the conservation and protection of fish and fish habitat. If it is determined that the project is likely to result in death of fish or HADD of fish habitat, an Authorization is typically required under the *Fisheries Act*. Proponents of projects requiring a *Fisheries Act* authorization may be required to also submit a habitat offsetting plan, which provides details of how the death of fish and/or HADD of fish habitat will be offset, and outlines associated costs and monitoring commitments. Proponents also have a duty to notify DFO of any unforeseen activities during the project that cause harm to fish or fish habitat.

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## 3.6 ENDANGERED SPECIES ACT, 2007

SAR designations for species in Ontario are initially determined by the Committee on the Status of Species at Risk in Ontario (COSSARO), and if approved by the provincial MECP, species are added to the provincial *Endangered Species Act* (ESA) which came into effect June 30, 2008 (Ontario 2007). The legislation prohibits the killing or harming of species identified as endangered or threatened in the various schedules to the Act. The ESA also provides habitat protection to all species listed as threatened or endangered. The Species at Risk Ontario (SARO) list is contained in O. Reg. 230/08.

Subsection 9(1) of the ESA prohibits the killing, harming or harassing of species identified as ‘endangered’ or ‘threatened’ in the various schedules to the Act. Subsection 10(1)(a) of the ESA states that “*No person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario (SARO) list as an endangered or threatened species*”.

General habitat protection is provided by the ESA to all threatened and endangered species listed in O. Reg. 230/08. Species-specific habitat protection is only afforded to those species for which a habitat regulation has been prepared and passed into law as a regulation of the ESA. The ESA has permitting, registration and other processes (e.g., Species at Risk Conservation Fund) to allow some activities that would otherwise not be permitted under the ESA.

The SAR screening table is provided in Appendix C with further information is provided in Section 4.5.

# 4 EXISTING CONDITIONS

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## 4.1 DESIGNATED FEATURES

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### 4.1.1 ENVIRONMENTAL PLANNING DESIGNATIONS

The previously listed planning and policy documents from the provincial, regional and municipal levels, online mapping resources, and agency consultation were reviewed to determine existing natural heritage land use designations within the Study Area. The review of relevant designations within the Study Area are summarized below. Available mapping layers are delineated on Figure 2 (Appendix A).

- Provincial Plan Area: Parcel D is within the Greater Golden Horseshoe Growth Plan Area. However, because the Parcel is within the City of Niagara Falls limits, it is not subject to the policies of the Growth Plan Area, as these will have been incorporated into the Municipal Official Plans. The Parcel is not within Greenbelt Plan Area, or Niagara Escarpment Plan Area.
  
- City of Niagara Falls Official Plan
  - Natural Heritage Features
    - Environmental Protection Area – The Grassy Brook valley is designated as EPA outside the Parcel to the north. The mapped EPA area does not appear to extend onto the parcel.
    - Environmental Conservation Area – The northwest edge of the Parcel includes ECA associated with the buffer of Grassy Brook, and Significant Woodland in the creek valley north of the parcel.
    - Wetland Buffer Area – The Official Plan does not designate the Grassy Brook valley as a PSW, however it is designated as NPCA regulated wetland, and is designated as PSW on provincial mapping and the Grand Niagara Secondary Plan EIS (Savanta, 2017) (see Natural Heritage Features, below). Given provincial and regional designations as a PSW, a 30 m buffer is required, which encroaches into the northwestern edge of the parcel.
    - Adjacent Land – The majority of the Parcel is designated as Adjacent Land to the natural heritage feature associated with the Grassy Brook valley (wetland and Significant Woodland).
  
- Niagara Region Official Plan
  - Natural Environment System
    - The Grassy Brook valley, including the watercourse, wetland, and woodland are designated as part of the NES.
    - The wetland along Grassy Brook is mapped as a PSW, and the associated woodland is mapped as a Significant Woodland, both components of the NES.
  
- Niagara Peninsula Conservation Authority Regulated Area
  - The northwest corner of the Parcel is within the NPCA regulated area associated with the buffer to the Grassy Brook wetland and the top of slope allowance.

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## 4.1.2 NATURAL HERITAGE FEATURES

The Site occurs within Ecoregion 7E. NHFs that are defined in the PPS and by extension protected under municipal official plans that were identified on or adjacent to the Site during the background review are depicted on Figure 2 of Appendix A.

- **Significant Wetland (PSW):** The Lower Grassy Brook Wetland Complex PSW is present along the Grassy Brook corridor north of the parcel. Note that the feature staking exercise attended by NPCA and Niagara Region resulted in modification to the boundary of the PSW to include the wooded swamp community extending south of the valley along the west boundary of Parcel D. Based on the updated OWES protocols, MNRF is no longer an approval body for classification or changes to PSW boundaries, therefore based on WSP's survey by a qualified wetland ecologist, and on-site approval by NPCA and municipal staff, the boundary of the PSW is considered to be the wetland boundary staked by WSP in 2022 for the purposes of this assessment.
- **Significant Woodlands.** All wooded areas in the Grassy Brook corridor, north and west of the Parcel are identified as Significant Woodland in the Niagara Falls Official Plan, Appendix III-C.
- **Significant Valleylands.** No significant valleylands are identified within the Site in provincial or municipal mapping. However, the Top of Slope associated with the Grassy Brook valley is defined by NPCA and the City of Niagara Falls.
- **Significant Wildlife Habitat (SWH).** Identification of SWH specific to the proposed development site is generally the responsibility of proponents through completion of an EIS. SWH was assessed along the Montrose Road corridor in the Montrose Road and Lyons Creek/Biggar Road MCEA (Parsons, 2021), and in the EIS to support the Grand Niagara Secondary Plan (Savanta, 2017). Several candidate SWH were identified in the area of Parcel D in these studies. These potential SWH were assessed through targeted field surveys as part of this EIS, and some were ruled out as SWH in the Study Area. An assessment of SWH is included in this report in Section 4.3.5, and Appendix D. Candidate SWH identified in the 2021 MCEA and 2017 Secondary Plan EIS that were assessed through field surveys in this report and are:
  - Bat Maternity Colonies – In all woodlands within the MCEA Study Area, which extends into the Parcel D Study Area
  - Reptile Hibernaculum – Potential in all vegetation communities, to be confirmed on site potentially during construction
  - Amphibian Breeding Habitat (Woodland) – Potential in swamp communities in Grassy Brook PSW
  - Terrestrial Crayfish – Potential in all marsh and swamp communities
  - Habitat of Special Concern Species – Habitat for Eastern Wood-Pewee (SC) and Wood Thrush (SC) in wooded areas of Grassy Brook PSW
- **Area of Natural and Scientific Interest (ANSI).** No ANSIs are present within or adjacent to the Site.
- **Fish habitat.** No fish habitat is present within the Parcel. Grassy Brook, north of the parcel, is designated as Type 1 Critical Fish Habitat. The stormwater ponds located immediately west of the Parcel also contain fish, however, as a Stormwater Management (SWM) pond with no surface connection (defined channel) to fish habitat in Grassy Brook, it is not considered Fish Habitat for the purposes of this assessment.
- **Habitat of endangered and threatened species.** Five endangered or threatened species are thought to have moderate potential to be present within the Study Area. All are associated with wetland and wooded habitats in the Grassy Brook valley adjacent to the parcel, with no suitable habitat within the proposed development area (refer to Section 4.4).

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## 4.2 VEGETATION AND ELC

The Study Area consists of a cultural meadow with swamp and marsh associated with Grassy Brook to the north of the parcel.

In total, 73 vascular plant species were recorded in the Study Area. Of these, 37 species (including 15 non-native species [41%]) were recorded within the Parcel, and 45 species were recorded in the adjacent swamp and marsh communities (including 9 non-native species [20%]). Of the species recorded:

- No SAR were recorded
- No globally rare species (i.e., G-rank G1 - G3) were recorded
- All of the vascular plants recorded during WSP field surveys are common and secure or apparently secure in Ontario (i.e., ranked S5, S4, SE5 or SE4)

Three natural / semi-natural vegetation communities were delineated in the Study Area, based on field surveys. None of the vegetation communities in the Study Area are provincially significant (per Bakowsky 1996; NHIC website). Vegetation communities are mapped on Figure 3 in Appendix A, and a full species list is included in Appendix B.

**Dry – Moist Old Field Meadow (CUM1-1)** – This community comprises nearly the entire Parcel, and the entire proposed development area. This pioneer community has a sparse canopy and subcanopy of Canadian Poplar (*Populus × canadensis*) and Staghorn Sumac (*Rhus typhina*). It has a sparse understory of Green Ash (*Fraxinus pennsylvanica*) and Gray Dogwood (*Cornus racemosa*). The groundcover is dominated by Kentucky Bluegrass (*Poa pratensis*), Goldenrods (*Solidago sp.*), Reed Canary Grass (*Phalaris arundinacea*) and Common Reed (*Phragmites australis*).

**Reed Canary Grass Mineral Meadow Marsh (MAM2-2)** – This small community located as a pocket within the swamp in the Study Area north of the Parcel is dominated by Reed Canary Grass with occasional grasses and wetland plants.

**Green Ash Mineral Deciduous Swamp (SWD2-2)** – This community is located north and west of the parcel, and comprises the majority of the Grassy Brook valley and associated PSW. It has a canopy and subcanopy of Green Ash, many of which are dead. Its sparse understory was dominated by Green Ash, Gray Dogwood and European Buckthorn (*Rhamnus cathartica*). Its sparse ground layer includes Knotweed species (*Persicaria sp.*), Reed Canary Grass and Spotted Jewelweed (*Impatiens capensis*).

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## 4.3 WILDLIFE

### AMPHIBIAN

Amphibian calling surveys were located at two stations; AC2 was completed from Montrose Road facing west towards the Grassy Brook Creek and AC3 from the northwest corner of the parcel, facing north towards the Grassy Brook valley. No amphibians were recorded at either station, however, approximately eight Western Chorus Frogs (*Pseudacris triseriata*) were recorded incidentally during the first survey from north of Parcel D, likely within the SWD2-2 north of the Creek. One Bullfrog (*Lithobates catesbeianus*) was recorded incidentally during the second survey in the adjacent SWM Pond, west of Parcel D. Frogs were observed jumping into the creek during daytime field surveys but species level could not be identified.

### BIRDS

In 2022, 14 bird species were recorded with breeding evidence within the Parcel (i.e., possible, probable, or confirmed breeding evidence according to OBBA standards). Refer to the Avifauna List in Appendix B. There were no observed species of conservation concern. Breeding avifaunal species recorded were a mix of edge and generalist species within the meadow, as expected given site conditions.

Twenty-one bird species were recorded with breeding evidence within the SWD2-2 north of Parcel D. No SAR were recorded.

## TURTLE BASKING

No species were recorded during the basking surveys within Grassy Brook Creek. Turtle basking habitat is not expected in the Grassy Brook corridor or PSW due to shaded conditions, and the lack of basking structures and emergent vegetation.

Despite the lack of observations of basking turtles, one Midland Painted Turtle (*Chrysemys picta marginata*) was observed dead on Montrose Road on May 25, 2022, and one Snapping Turtle (*Chelydra serpentina*) was observed as an incidental on July 11, 2022 within the SWM Pond west of Parcel D. These observations indicate suitable habitat and potential threats to turtles in the Study Area.

## INCIDENTALS

Wildlife observation consisted of American Woodcock (*Scolopax minor*), Eastern Cottontail (*Sylvilagus floridanus*), Northern Watersnake (*Nerodia sipedon*) and White-tail Deer (*Odocoileus virginianus*) within the Study Area.

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### 4.3.1 SIGNIFICANT WILDLIFE HABITAT

A screening of criteria for SWH for Ecoregion 7E was undertaken by assessing the vegetation communities, habitat characteristics, and results of wildlife surveys recorded during field studies. The full SWH Screening Table is included in Appendix D.

No SWH was confirmed in the Study Area. Four types of Candidate SWH were identified within the Study Area, two of which are within the Parcel (Waterfowl Nesting Areas, and Special Concern Species - Monarch):

- **Waterfowl Nesting Areas**
  - The Cultural Meadow upland area within the Parcel adjacent to the Grassy Brook PSW is suitable habitat for waterfowl nesting, according to the SWH criteria. However, no waterfowl were observed in the Study Area including Grassy Brook during any field surveys, and the area lacks larger areas of open water, reducing the likelihood of waterfowl using the area.
- **Amphibian Breeding Habitat (Woodland)**
  - No pools or ponds were observed within the SWD community / PSW area, however, Western Chorus Frog was recorded within the SWD community outside the Study Area, therefore the SWD unit is considered candidate habitat.
- **Amphibian Breeding Habitat (Wetland)**
  - The SWD community / PSW is classified as candidate habitat in the SWH criteria, and Western Chorus Frog was recorded within the SWD unit outside the Study Area.
- **Special Concern and Rare Wildlife Species**
- Candidate (unconfirmed) SWH is present within the development Parcel for one species listed as Special Concern:
  - Monarch (*Danaus plexippus*)
- Candidate (unconfirmed) SWH is present within the Grassy Brook PSW for seven species listed as Special Concern:
  - Eastern Musk Turtle (*Sternotherus odoratus*)
  - Northern Map Turtle (*Graptemys geographica*)
  - Snapping Turtle (*Chelydra serpentina*)
  - Grass Pickerel (*Esox americanus*)
  - Spotted Sucker (*Minytrema melanops*)

- Green Dragon (*Arisaema dracontium*)
- Schumard Oak (*Quercus shumardii*)

Of the Candidate SWH identified in the Montrose Road MCEA (Parsons, 2021) in the area of this Parcel (Montrose Road corridor), and the Grand Niagara EIS (Savanta, 2017), the following were determined as not present following targeted field surveys that did not result in any observations of criteria species or high quality habitat features:

- Bat Maternity Colonies
- Reptile Hibernaculum
- Habitat of Special Concern Species – Eastern Wood-Pewee (SC) and Wood Thrush (SC)

See the full SWH Screening in Appendix D for detailed discussion of results.

## 4.4 FISH HABITAT

### GRASSY BROOK

The Grassy Brook is within 30 m of Parcel D and conveys flow from the surrounding agricultural, residential, recreational, and commercial lands along the northside of the Study Area. The permanent watercourse flows from west to east along the northside of Parcel D then converges with the Welland River approximately 1.5 km downstream of the Montrose Road culvert crossing. The assessed reach of Grassy Brook extended approximately 300 m upstream of the Montrose Road culvert crossing, where permission to enter was granted.

In the assessed reach, the channel morphology is dominated by flats (80%), with some riffles and runs present. The channel velocities are slow with a low-gradient present. Grassy Brook had a mean wetted width of 2.7 m and an average wetted depth of 0.3 m within the flat morphology at the time of the survey. The bankful width in the flats averages 3 m with a bankful depth averaging 0.3 m. Riffles measured instream had a wetted width of 0.45 m and a wetted depth of 0.04 m at the time of the survey. The substrates along the assessed reach of Grassy Brook are composed of clay (40%), silt (20%), sand (15%), gravel (10%), cobble (10%), and detritus (5%). Banks along the assessed reach are stable with minor erosion. In-stream cover is comprised of overhanging vegetation (15%), instream vegetation (10%), woody/organic debris (10%), and cobble (5%). Riparian vegetation is dominated by Gray Dogwood, European Buckthorn, Ash and Willow trees. Two separate debris jams were observed instream that create seasonal barriers for fish, these measured 0.2 m and 0.35 m respectively. A summary of the existing fish habitat conditions are presented in Table 1.

### STORMWATER MANAGEMENT POND

A SWM pond, associated with the nearby recreational complex, was visually assessed during the September 1, 2022 field program. The SWM pond is approximately 40 m west of Parcel D and there were fish (*Lepomis* sp.) observed in the pond at the time of the aquatic assessment. The SWM pond is approximately 20 m by 65 m in size and is greater than 1 m deep. The pond ultimately outlets into the nearby forest through a closed concrete pipe approximately 35 m south of Grassy Brook. Due to the permanent barriers from the SWMP outlet structure, fish are not able to move upstream into the pond. Although the pond is inhabited by fish, under the *Fisheries Act* SWMPs are considered an ‘artificial waterbody’ therefore not considered fish habitat and do not have protection under the *Fisheries Act*.

### FISH COMMUNITY

No fish sampling was conducted in Grassy Brook, given the existing background data available on the fish community. Fish community was designated following background review of existing fish collection records for Grassy Brook which identifies the community as consisting of a variety of sportfish, native forage and bait fish species (please refer to Table 2).

No freshwater mussels or shells were observed instream or along the shoreline. Both adult and young of year (YOY) fish were observed in Grassy Brook during the September 1, 2022, however were not captured to confirm species. The watercourse provides spawning, rearing and foraging habitat for various species of fish.

**Table 4.1 Existing Fish Habitat Conditions Summary Table**

WATERBODY ID	DATE	FLOW	THERMAL REGIME	FISH HABITAT	SUBSTRATE TYPE	CHANNEL MORPHOLOGY	VEGETATION	CONSTRAINTS & OPPORTUNITIES	SIGNIFICANT FISH HABITAT
Grassy Brook	September 1, 2022	Permanent	Warm	Direct	Sand, Gravel, boulder	Flat, Riffle, Run Bankfull Width 3.0 m Bankfull Depth 0.3 m	<u>Riparian:</u> Gray Dogwood, European Buckthorn, and Green Ash. <u>In-water:</u> Grass Sp., Sedge Sp.	<u>Design Considerations:</u> Ensure appropriate setback restrictions from Grassy Brook	<u>Specialized Habitat:</u> spawning and nursery habitat.

**Table 4.2 Existing Fish Community Summary Table**

Waterbody ID	Date	Fish Species (Potentially) Present	Year Class	Species at Risk Potential (SARA/ESA)	In-water Works Timing Window	
Grassy Brook	September 1, 2022	<ul style="list-style-type: none"> <li>— Black Crappie (<i>Pomoxis nigromaculatus</i>)</li> <li>— Bluegill (<i>Lepomis macrochirus</i>)</li> <li>— Bluntnose Minnow (<i>Pimephales notatus</i>)</li> <li>— Bowfin (<i>Amia calva</i>)</li> <li>— Brook Stickleback (<i>Culaea inconstans</i>)</li> <li>— Brown Bullhead (<i>Ameiurus nebulosus</i>)</li> <li>— Central Mudminnow (<i>Umbra limi</i>)</li> <li>— Common Carp (<i>Cyprinus carpio</i>)</li> <li>— Creek Chub (<i>Semotilus atromaculatus</i>)</li> <li>— Emerald Shiner (<i>Notropis atherinoides</i>)</li> <li>— Fathead Minnow (<i>Pimephales promelas</i>)</li> <li>— Freshwater Drum (<i>Aplodinoyus grunniens</i>)</li> <li>— Gizzard Shad (<i>Dorosoma cepedianum</i>)</li> <li>— Golden Shiner (<i>Notemigonus crysoleucas</i>)</li> <li>— Green Sunfish (<i>Lepomis cyanellus</i>)</li> <li>— Johnny Darter (<i>Etheostoma nigrum</i>)</li> </ul> <p><i>Source: LIO database for Grassy Brook</i></p>	<ul style="list-style-type: none"> <li>— Largemouth Bass (<i>Micropterus salmoides</i>)</li> <li>— Logperch (<i>Percina caprodes</i>)</li> <li>— Moxostoma sp.</li> <li>— Muskellunge (<i>Esox masquinongy</i>)</li> <li>— Northern Pike (<i>Esox Lucius</i>),</li> <li>— Pumpkinseed (<i>Lepomis gibbosus</i>),</li> <li>— Rock Bass (<i>Ambloplites rupestris</i>)</li> <li>— Round Goby (<i>Neogobius melanostomus</i>)</li> <li>— Shorthead Redhorse (<i>Moxostoma macrolepidotum</i>)</li> <li>— Smallmouth Bass (<i>Micropterus dolomieu</i>)</li> <li>— Spottail Shiner (<i>Notropis hudsonius</i>)</li> <li>— Tadpole Madtom (<i>Noturus gyrinus</i>)</li> <li>— Trout-Perch (<i>Percopsis omiscomaycus</i>)</li> <li>— White Crappie (<i>Pomoxis annularis</i>)</li> <li>— White Sucker (<i>Catostomus commersonii</i>)</li> <li>— Yellow Perch (<i>Perca flavescens</i>)</li> </ul>	YOY & Adult	<p>Grass Pickerel (<i>Esox americanus</i>)** SC, SC</p> <p>Spotted Sucker (<i>Minytrema melanops</i>) ** SC, SC</p> <p>Eastern Pondmussel (<i>Ligumia nasuta</i>) * SC, SC</p> <p>Round Hickorynut (<i>Obovaria subrotunda</i>) * END, END</p> <p>*NHIC **DFO-SAR Mapping</p>	Works Permitted July 1 – February 28

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## 4.5 SPECIES AT RISK

A screening exercise was completed to identify which SAR have reasonable potential to be present within Parcel A based on known occurrences of the species and the habitats present. A list of SAR known to occur within the vicinity of the Parcel and Niagara Region from review of various sources including: NHIC data; DFO SAR mapping; Ontario Breeding Bird Atlas; Ontario Reptile and Amphibian Atlas; and personal / WSP experience on projects within the area. Each species' known preferred habitat was then cross-referenced against habitats identified within the Study Area, with consideration of species distribution and range, to determine the reasonable likelihood of the species being present within the Study Area. The full SAR habitat evaluation is included in Appendix C.

No SAR were observed during field assessments. For the majority of species screened, no suitable habitat is present within the Parcel which is limited to cultural meadow habitat. Most species with moderate or high likelihood of occurrence in the overall Study Area would rely on habitat limited to the swamp and riparian areas within the Grassy Brook valley north of the parcel.

Of the 29 SAR listed as **Threatened or Endangered** (that receive species and habitat protection under the ESA) that were screened, five were identified with **moderate likelihood to be present in the Study Area**. All of these are associated with habitat adjacent to the Parcel in the Grassy Brook valley.

- Blanding's Turtle (*Emydoidea blandingii*)
- Butternut (*Juglans cinerea*)
- Cucumber Tree (*Magnolia acuminata*)
- American Water-willow (*Justicia americana*)
- Virginia Mallow (*Sida hermaphrodita*)

Eight species listed as **Special Concern** have **moderate to high potential for presence in the Study Area**. Of these, one has potential within the Parcel (proposed development area):

- Monarch (*Danaus plexippus*)

And seven have potential habitat within Grassy Brook, and the associated wetland and wooded areas adjacent to the parcel:

- Eastern Musk Turtle (*Sternotherus odoratus*)
- Northern Map Turtle (*Graptemys geographica*)
- Snapping Turtle (*Chelydra serpentina*)
- Grass Pickerel (*Esox americanus*)
- Spotted Sucker (*Minytrema melanops*)
- Green Dragon (*Arisaema dracontium*)
- Schumard Oak (*Quercus shumardii*)

# 5 PROPOSED WORKS

The proposed development involves the construction of one two-storey commercial / industrial building and a surface parking lot containing 129 parking spaces. Access to the proposed development is provided off the adjacent Montrose Road, with additional private connections to the existing employment lands to the south also being proposed.

The total area of the Parcel is 8,718.79 sq. m. The proposed development will encompass the full area of the parcel, and will be composed of:

- Building Area: 1,660.99 sq. m.
- Asphalt (parking) Area: 4,474.77 sq. m.
- Other impact area (grading and landscape): 2,583.03 sq. m.

Stormwater management included in the proposed development consists of a plan for minor flows (up to 5-year storm) and major flows (above 5-year storm). Minor storm flows will be directed via a new proposed storm sewer from the north side of the development to outlet to the Montrose Road drainage ditch, ultimately flowing into Grassy Brook. Low Impact Development (LID) design components are proposed where feasible including directing roof runoff to pervious areas and infiltration trenches, use of permeable pavement for parking lots, and adding extra depth of topsoil to improve infiltration. No quantity control measures are recommended.

Major flows above the 5-year storm will be directed via site grading to overland flow paths north to Grassy Brook. This may involve grassed swales, which would direct flows through the PSW to the River.

The proposed development does not require removal or direct impact to any NHFs but is within prescribed setbacks. Details of potential impacts to natural features are presented in the following sections.

The site plan is included in Appendix E, and proposed development is illustrated overlaid with natural heritage constraints in Figure 4 of Appendix A.

# 6 IMPACT ASSESSMENT

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## 6.1 DESIGNATED FEATURES

The proposed development will have no direct impacts on designated NHFs. Areas of impact within prescribed buffer areas for NHFs (PSW, Significant Woodland) are presented here. More detailed discussion of the implications of vegetation removals are discussed in Section 6.2 and 6.3 on Vegetation and Wildlife.

### 6.1.1 WETLANDS

#### **Provincially Significant Wetlands**

There are no proposed footprint impacts to PSWs as a result of the proposed development.

#### **PSW Buffers**

A 30 m buffer is required for PSWs. The 2022 field surveys conducted by WSP, and feature staking exercise attended by both the Region of Niagara and NPCA resulted in a modified boundary of the wetland community comprising the Lower Grassy Brook PSW. According to the new protocols for designating PSW under OWES, reconfigurations no longer need to be approved by MNRF. Therefore, the boundary of the wetland identified during field investigations is considered the existing area of PSW for this assessment. Therefore the 30 m buffer has been applied to the 2022 staked wetland boundary.

The area of vegetation removals within 30 m of the wetlands are:

- 2,920.72 sq. m.

The impacted area within the PSW buffer is composed of previously impacted upland cultural vegetation. There are no hydrologic features within the development area, and no apparent hydrological connection between the development area and the PSW outside of surface runoff patterns due to side topography. Therefore, if the recommended mitigation measures and SWM design are incorporated into the proposed development, and quantity and quality of runoff inputs to the wetland are maintained in the post-development condition, encroachment within the 30 m buffer is not anticipated to cause negative impacts to the form and function of the PSW.

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### 6.1.2 WOODLANDS

#### **Significant Woodlands**

The wooded areas on the Parcel are designated as Significant Woodlands on municipal and NPCA mapping. The wooded areas are classified as swamp communities and are therefore considered part of the wetland and are captured in the wetland impact areas calculated above. There are no direct footprint impacts to Significant Woodlands as a result of the proposed development. The required buffer for woodlands is generally less than is required for wetlands (10 to 15 m), and is therefore captured within the 30 m buffer for the PSW. Therefore impacts to the buffer are as discussed above.

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## 6.2 VEGETATION

The proposed development will have direct impacts involving removal of culturally-impacted vegetation communities. While the majority of the existing vegetation present on the Parcel would be removed under the

proposed development, these types of communities and habitats are already culturally impacted by clearing and commercial / roadway activity. Higher quality open meadow habitats are common in the surrounding landscape immediately east of the QEW in Baden-Powell (Grassy Brook) Park, and in large tracts of land (>100 ha) on the North side of the Welland River. The impacts to specific ELC communities are summarized in Table 6.1, below.

**Table 6.1 Direct Impacts to Vegetation Communities**

ELC COMMUNITY	REMOVAL AREA (SQ.M)
CUM1 – Mineral Cultural Meadow	7,938
CGL – Green Lands	725
<b>TOTAL CULTURAL COMMUNITY IMPACT</b>	<b>8,663</b>
MAM2-2 – Reed-canary Grass Mineral Meadow Marsh	0
SWD2-2 – Green Ash Mineral Deciduous Swamp	0
<b>TOTAL NATURAL COMMUNITY IMPACT</b>	<b>0</b>
<b>TOTAL VEGETATION REMOVAL</b>	<b>8,663</b>

### 6.2.1 CULTURAL VEGETATION COMMUNITY IMPACTS

The entire area directly impacted on the Parcel is currently composed of Cultural Meadow or manicured green space (lawn). While the Cultural Meadow community is characterized by some degree of degradation and anthropogenic influence, some ecological and hydrological functions are expected to be impacted by removal. Reduction in biodiversity on the Parcel may be expected due to loss of meadow vegetation species not occurring in other communities within the Study Area, such as Milkweed. Native plant species removed within the meadow community can be incorporated into landscape restoration plans to maintain some similar habitat and diversity. Loss of habitat for meadow species such as birds and insects would occur on the parcel, as discussed in Section 6.3 below. Despite the removal of this habitat on the parcel, it is expected that other open meadow habitats in the general area will continue to support these species. Construction of impervious surfaces (buildings and paved surfaces) will also reduce infiltration and increase runoff to adjacent communities including wetlands, as discussed in Section 6.2.2, below.

### 6.2.2 INDIRECT IMPACTS

There is potential for indirect impacts to the remaining vegetation communities adjacent to the Parcel from construction and development. Indirect impacts may include:

- Release of construction-generated sediment to adjacent habitats
- Vegetation clearing / damage beyond the working area
- Spills of contaminants, fuels and other materials that may reach natural areas
- Damage to adjacent natural areas from roadway / parking lot maintenance such as salting / sanding, structure or culvert repairs or ditch clean-outs
- Changes in drainage patterns (groundwater and/or surface runoff flow) that can impact hydrophytic dependent vegetation along watercourses and wetland areas in adjacent habitats. Blocking of existing surface / subsurface drainage patterns can result in vegetation dieback / condition changes. An increase in downstream runoff can result in erosion impacts on receiving vegetation.

These potential indirect impacts to vegetation and habitat features can generally be managed through the implementation of standard mitigation measures outlined in Section 7.

Indirect impacts from stormwater runoff may be experienced in the PSW as a result of untreated runoff of major storm events (above the 5-year storm level) carrying contaminants from parking lot surfaces through the PSW before draining to Grassy Brook.

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## 6.3 WILDLIFE AND SAR

The proposed development will result in removal of cultural vegetation communities that provide limited habitat for a variety of wildlife. Removal of meadow communities will remove some potential foraging habitat for birds, mammals, reptiles, and insects. Breeding potential for wildlife in the development area is low due to the open and impacted nature of the community. One exception observed is the potential for Monarch breeding, due to the presence of Milkweed in the Cultural Meadow. The removal of these plants may reduce potential Monarch breeding habitat, however, this can be mitigated by incorporating Milkweed into landscape and restoration plantings in the development design.

Impacted habitat types are abundant in the surrounding landscape immediately east of the QEW in Baden-Powell (Grassy Brook) Park, and in large tracts of land (>100 ha) on the North side of the Welland River. The Grassy Brook valley and wetland will not be impacted by the development, allowing it to continue to function as a wildlife corridor connecting these other habitat areas.

Specific potential impacts to SWH and SAR are discussed below.

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### 6.3.1 SWH

Two types of candidate SWH was identified within the development parcel.

- Waterfowl Nesting Areas
- Habitat for Special Concern and Rare Wildlife Species
  - Monarch

This potential habitat would be mostly removed within the Parcel as the development footprint encompasses the majority of the upland meadow area adjacent to the wetland. However, no waterfowl were observed in the Study Area, and the wetland and watercourse are not ideal waterfowl habitat (swamp with trees and dense vegetation, small creek with little open water area). Therefore, the likely impact to nesting waterfowl is low.

Potential breeding habitat for Monarch (Milkweed) would be removed due to the footprint in the Cultural Meadow vegetation unit. Milkweed should be included in landscape and restoration plantings to mitigate this impact and provide breeding sites for Monarch in the developed condition.

Four types of candidate SWH were identified within the Grassy Brook PSW, adjacent to but outside the development parcel.

- Amphibian Breeding Habitat (Woodland)
- Amphibian Breeding Habitat (Wetland)
- Terrestrial Crayfish
- Habitat for Special Concern and Rare Wildlife Species
  - Eastern Musk Turtle
  - Northern Map Turtle
  - Snapping Turtle
  - Grass Pickerel
  - Spotted Sucker
  - Green Dragon
  - Schumard Oak

No direct impacts to these habitats will result from the proposed development. However, indirect impacts from encroachment within the 30 m buffer may impact the candidate SWH in several ways. Edge impacts of noise and light may disturb breeding amphibians or turtles in the wetland habitat. Additionally, changes in stormwater and runoff quantity and quality due to increased impervious surfaces in the development may impact hydrologic conditions in the wetland, which may reduce habitat quality for hydrophytic animal and plant species.

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### 6.3.2 SAR

All of the potential SAR listed as Threatened or Endangered that were screened in this assessment were determined to have no or low likelihood of being impacted by the proposed development. Five species listed as threatened or endangered were assessed with moderate likelihood of occurring in the Study Area, all of which are associated with the wetland habitat in the Grassy Brook PSW. These species were not observed, and there are no direct impacts to potential wetland or woodland habitat. There is potential for indirect impacts to habitat due to development within the wetland buffer as described for SWH above, however these are expected to be mitigated through design of lighting and stormwater management. Therefore there is low potential for impacts to any species with protections under the ESA.

Species listed as Special Concern do not receive species or habitat protection under the ESA, however are protected under SWH and should be considered in planning and mitigation as best practices for the promotion of biodiversity. Of the eight Special Concern species with moderate potential to occur in the Study Area, seven are associated with habitats adjacent to the Parcel in the Grassy Brook PSW. Potential for impacts to these species or their habitats is low, as described above.

One species with moderate potential for presence in the cultural meadow habitat, Monarch, has **moderate potential to be negatively impacted** by the development. The removal of the Cultural Meadow vegetation, including Milkweed would remove potential breeding habitat for the species. Adhering to permitted timing windows for all vegetation removal (including meadow vegetation) would avoid impacting breeding Monarchs, eggs, or larvae. Including Milkweed in landscape and restoration plantings would mitigate loss of the existing potential habitat and provide potential breeding habitat for the species.

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## 6.4 FISH HABITAT

The proposed development does not have any direct footprint impacts within direct fish habitat (Grassy Brook). A setback of 30 m from the bank of Grassy Brook, with retained treed and wetland vegetation will function to mitigate indirect impacts of the development, such as mobilization of soils or sediment during construction, increased runoff and potential contaminants from treatment of driveway surfaces (e.g. sand and salt).

Stormwater management involves directing up to 5-year storm flows to the Montrose Road ditch via storm sewer. Water quality controls including LID considerations, and OGS units are proposed, however no quantity control is proposed. Concentration of flow through the storm sewer outlet may result in increased velocity, scour and erosion potentially carrying sediment and excess organic materials downstream to Grassy Brook.

With incorporation of recommended mitigation measures and stormwater management design, neither direct nor indirect impacts to fish habitat in Grassy Brook are anticipated as a result of the proposed development.

# 7 MITIGATION MEASURES

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## 7.1 PROJECT PLANNING

- All vegetation removals shall occur outside breeding bird period (April 1<sup>st</sup> to August 31<sup>st</sup>) and the bat active season (April 1<sup>st</sup> to September 30<sup>th</sup>) to avoid impacts to nesting birds and roosting bats. **Vegetation removal only permitted October 1<sup>st</sup> to March 31<sup>st</sup>.**
  - For all work areas adjacent to natural features, fencing designed to effectively exclude turtles from entering the work area shall be installed prior to the turtle nesting season. **Wildlife Exclusion fencing must be installed prior to May 1<sup>st</sup>.**
  - All work in water or on banks of a watercourse shall respect the warmwater timing window specified by the MNRF to protect sensitive life stages of fish. **In water work only permitted July 1<sup>st</sup> to February 28<sup>th</sup>.**
- 

## 7.2 VEGETATION AND FLORA

Recommended mitigation measures to minimize effects to the local vegetation communities and their associated habitat functions are listed below. Mitigation measures will be reviewed and refined at detail design.

- Limit vegetation removals to the extent required for construction, and as delineated on contract drawings.
- Follow Canadian Food and Inspection Agency (CFIA) Directive D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread Within Canada of the Emerald Ash Borer, *Agrilus planipennis* (Fairmaire).
- Install temporary erosion and sediment control measures prior to construction and maintain in an effective, functioning, stable condition. This will require routine inspections, including after storm events, and repair as required. Erosion and sediment control measures should remain in place until all site restoration activities are completed and disturbed areas are no longer susceptible to erosion and sedimentation.
- Maintain and protect all trees not identified for removal (to be determined in an arborist report at detail design). Retained trees to be protected using tree protection fencing.
- Re-stabilize and re-vegetate exposed soil surfaces as soon as possible (no later than 45 days post-construction), using native seed mix.
- Incorporate native plantings and landscape design to support quality and quantity of stormwater runoff (to be prepared during detail design)
- All activities, including equipment maintenance and refueling, shall be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into the natural environment. The Contractor will have an Environmental Incident Plan and required materials on site at all times.
- Environmental inspection shall be implemented during construction to ensure that protection measures are implemented, maintained, repaired, and remedial measures are initiated in a timely manner where warranted
- All vehicles and equipment exposed to invasive plants should be cleaned prior to leaving the construction site where these species occur.
- Recommend adhering to guidelines in Ontario Invasive Plant Council document: Clean Equipment Protocol for Industry (OIPC 2013). General measures include:
  - Clean equipment prior to entering another site.
  - Clean equipment on a mud-free, gravel covered and hard surface or well maintained, grassy area
  - Equipment must be cleaned at least 30 m away from any watercourse, water body or natural vegetation
  - Use compressed air where appropriate (e.g. radiators and grills) and high-pressure hose in combination with a stiff brush to further remove dirt, mud and plant parts.

- Emphasis should be placed the underside of the vehicle, wheel arches, guards, radiators etc.
- Avoid driving through wastewater.
- Contaminated soil should only be disposed at a site where the material can be contained, monitored and, if necessary, treated, or at an appropriate municipal staging or disposal location.

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## 7.3 WILDLIFE AND WILDLIFE HABITAT

The mitigation measures outlined above are designed to minimize effects to vegetation and protect adjacent vegetation areas, which in turn protect the associated wildlife habitat functions. However, it is also necessary to ensure the protection of breeding birds according to the MBCA, as well as other wildlife that may nest or otherwise use areas where construction is proposed. Wildlife-specific mitigation measures are outlined below:

### Migratory Birds

As noted, nesting migratory birds are protected under the MBCA. In order to protect nesting migratory birds, in accordance with the MBCA, the following mitigation measures should be implemented:

- Ensure that timing constraints are applied to avoid vegetation clearing (including grubbing and removal of trees, shrubs, plants, grasses and brush piles) during the breeding bird season (April to August – see 7.1 Project Planning). It should be noted that occasionally bird species will precede (e.g., mid-March) or exceed (e.g., September) the approximate breeding bird season window.
- The Contractor shall not destroy active nests (nests with eggs or young birds) of protected migratory birds. If active bird nests are encountered, the Contractor Administrator must be contacted.
- If a nesting migratory bird is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area would result in a contravention of the MBCA **all activities will stop and the Contract Administrator will contact the MTO Environmental Planner to discuss mitigation options.**
- One species listed on Schedule 1 of the *Migratory Birds Regulations, 2022* for which nests are re-used and are therefore protected even outside the breeding season when birds and eggs are not present – Pileated Woodpecker may occur in the area. Any suitable trees (>25 cm DBH, solid trees with heart rot) shall be inspected by a qualified biologist for potential nesting cavities prior to tree removal. If any nesting cavities are located, no permitting pathways currently exist to allow removal of nests until it has been demonstrated through regular monitoring that a nest is inactive for 36 months prior to removal. In that case, consultation with Environment and Climate Change Canada (ECCC) is recommended.

### Other Wildlife

The following measures are recommended for the protection of wildlife in general:

- For all work areas adjacent to natural features, wildlife exclusion fencing designed to effectively exclude turtles from entering the work area will be installed prior to the turtle nesting season (May 1<sup>st</sup>). Fencing should be paige-wire backed and follow the OMNR Best Practices Technical Guide for Reptile and Amphibian Exclusion Fencing (<https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing>). Temporary exclusion fencing can be combined with erosion and sediment control fencing, following the OMNR Best Practices Technical Guide. Fencing should be minimum 60 cm in height and buried 10 to 20 cm.
- In the event that an animal encountered during construction does not move from the construction zone and construction activities are such that continuing construction in the area would result in harm to the animal, **all activities that could potentially harm the animal will cease immediately and the Contract Administrator will be notified.**
- In the event that an injured animal is encountered in the construction zone, **all activities that could potentially harm the animal will cease immediately and the Contract Administrator will be notified.** The Contract Administrator will immediately contact a Wildlife Custodian (authorized under the Fish and Wildlife Conservation Act) to provide care for the animal. A list of authorized Wildlife Custodians, their locations and their specialties is available at <https://www.ontario.ca/page/find-wildlife-rehabilitator>.

- Milkweed should be included in re-vegetating seed mix to mitigate potential loss of Monarch habitat through vegetation removal in meadow habitats.
- 

## 7.4 FISH HABITAT

No in-water work is proposed, and all works are restricted to the Parcel area which is greater than 30 m from fish habitat (Grassy Brook). The following measures should be implemented to avoid any indirect impacts to fish habitat during construction due to runoff or lack of containment of construction materials or activities.

- In water work must adhere to the permitted warmwater timing window in Section 7.1 Project Planning
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, poured concrete or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the watercourses and wetlands during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized. The plan should, where applicable, include:
  - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering waterbodies and wetlands.
  - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, Dewatering discharge will be released to vegetated ground surface at least 30 m from the watercourse where possible and allowed to flow overland through vegetated areas before entering a watercourse.
  - Measures for containing and stabilizing waste material (e.g., construction waste and materials, uprooted or cut aquatic plants, accumulated debris) above the high-water mark of nearby waterbodies to prevent re-entry.
  - Regular inspection and maintenance of erosion and sediment control measures and structures during construction.
  - Repairs to erosion and sediment control measures and structures if damage occurs.
  - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.

# 8 POLICY COMPLIANCE

The federal policies summarized in Section 3, the MBCA and *Fisheries Act*, can be adhered to by applying the recommended design and mitigation measures in this EIS Report.

The provincial ESA and associated prohibitions and restrictions can be adhered to by applying the recommended design and mitigation measures in this EIS Report. The SAR screening assessment completed as part of this EIS determined that there is low likelihood of impacting any SAR protected under the ESA from the proposed development. No further action or approvals under the ESA are anticipated.

Provincial policies described in the Provincial Policy Statement, administered under the *Planning Act* are implemented through lower tier municipal Official Plans and Conservation Authority policies. Compliance with these specific policies are discussed in the sections below. There are several policies with which the proposed development is not in compliance. Further consultation with approval agencies is recommended to resolve the policy conflicts.

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## 8.1 REGION OF NIAGARA OFFICIAL PLAN (2022)

*3.1.9.5.1 Development and site alteration shall not be permitted in the following natural heritage features and areas:*

- a) provincially significant wetlands;*
- b) significant coastal wetlands; and*
- c) significant woodlands*

The proposed development does not include any development within the limits of PSW and Significant Woodlands, and is therefore in compliance with this policy.

*3.1.9.5.4 Notwithstanding any other policies of this Plan, development and site alteration in, and adjacent to watercourses, provincially significant wetlands, and other wetlands that are regulated by the Conservation Authority, may also be subject to the regulations and land use planning policies of the Conservation Authority.*

Discussion of these policies including development with the 30 m setback to the wetland communities is discussed in Section 8.2.3, below.

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## 8.2 CITY OF NIAGARA FALLS OFFICIAL PLAN (2019)

*11.2.13 The EPA designation shall apply to Provincially Significant Wetlands, NPCA regulated wetlands greater than 2ha in size, Provincially Significant Life ANSIs, significant habitat of threatened and endangered species, floodways and erosion hazard areas and environmentally sensitive areas*

Development or site alteration is not permitted within the EPA designation except where permitted by the NPCA for wildlife management, conservation, or passive recreational uses. The proposed development does not involve any encroachment within the EPA area (the PSW), and therefore is in compliance with with this policy.

A vegetated buffer must be established around natural features within the EPA.

*11.2.16 A minimum vegetated buffer established by an Environmental Impact Study (EIS) shall be maintained around Provincially Significant Wetlands and Niagara Peninsula Conservation Area Wetlands greater than 2 ha in size. A 30m buffer is illustrated on Schedule A-1 for reference purposes. The precise extent of the vegetated buffer will be determined through an approved EIS and may be reduced or expanded. New development or site alteration within the vegetated buffer is not permitted.*

The vegetated buffer specified in this EIS is 30 m from the boundary of the PSW (as defined by the WSP staked boundary in 2022). The proposed development does not impact the PSW but does include encroachment within the 30 m vegetated buffer. The limit of the proposed development is between approximately 8 and 28 m from the PSW limit.

Only limited uses are permitted within the ECA designation, if it can be demonstrated that there will be no negative impacts to natural features.

*11.2.22 The Environmental Conservation Areas designation contains significant woodlands, significant valleylands, significant wildlife habitat, fish habitat, significant Life and Earth Science ANSIs, sensitive ground water areas, and locally significant wetlands or NPCA wetlands less than 2ha in size.*

The ECA designation applies to the Significant Woodland in municipal mapping, which is also within the WSP staked boundary for the PSW. The proposed development does not involve any encroachment into the ECA designation. Policy for buffers to woodlands is covered in Policy 11.1.40, stating that vegetative buffer targets set through watershed studies and EIS's should be met through the protection of land adjacent to water features and woodlands. ECA buffer width is incorporated into the 30 m wetland buffer specified above. The proposed development encroaches into the specified buffer but is generally between 8 and 28 m from the woodland dripline, with the closest corner of development approximately 3 m from the dripline.

## 8.3 NIAGARA PENINSULA CONSERVATION AUTHORITY

The top of slope for the valley of Grassy Brook is illustrated on Figures 2 and 4, as mapped by the NPCA.

*6.2.5.1 Erosion Access Allowance – A minimum setback of 7.5 metres (25 feet) from the NPCA approved physical top of slope (surveyed by the applicant in accordance with the policies of this document) or the location of the Stable Top of Slope (whichever is furthest landward) shall be required.*

Field assessment of the stable top of slope is outside the scope of this EIS. However, based on the existing mapped top of slope, the majority of the proposed development limit is outside the mapped 'Top of Slope Allowance', with only the northwest corner of the development encroaches slightly within the allowance.

NPCA policies regarding development within and adjacent to wetlands state that no development is permitted within wetlands or the vegetated buffers. Exceptions to these policies only apply if the wetland is evaluated as Non-Significant, and if development within the buffer can be demonstrated to have no negative impacts to the satisfaction of NPCA.

*8.2.2.1 Development and Interference – Unless otherwise stated in this Document, no development and/or site alteration shall be permitted within a wetland.*

*8.2.3.5 Proposed New Development within 30 metres of a Wetland*

*c) For major development (as determined by the NPCA) including, but not limited to; plans of subdivision; extensions of draft approval for existing plans; and, major commercial, industrial, or institutional uses, no new development is permitted within 30m of a PSW. Reductions will only be considered based on a site specific evaluation by NPCA staff to determine whether a reduction is warranted, depending on scale, nature and proximity of the proposed development*

The Lower Grassy Brook Wetland Complex is designated as PSW, and the boundary has been amended based on the field assessment as described in this report. No development is proposed within the PSW boundary. The proposed development encroaches within the 30 m buffer, and provides a buffer of between 8 and 28 m from the staked wetland boundary. As discussed in Section 6.1.1. above, the buffer area impacted is previously disturbed cultural vegetation, and hydrologic connection to the PSW is limited to overland stormwater runoff, which can be managed by appropriate stormwater management design for water quality. Therefore encroachment within the 30 m buffer is not anticipated to cause negative impacts to the form and function of the PSW.

## 9 CONCLUSIONS

The proposed development does not have direct impacts on designated NHFs or natural vegetation communities. Overall, the proposed development will remove 7,938 sq. m of cultural meadow vegetation within the parcel, including encroachment within the prescribed 30 m buffer of the Lower Grassy Brook PSW.

The impacts of these removals include direct and indirect effects. Direct impacts within the cultural meadow include removal of biomass, potential reduction of biodiversity, loss of wildlife habitat, and alteration of permeable surfaces impacting water infiltration. Indirect impacts may include alteration of infiltration, and filtration of surface runoff to wetland communities before reaching Grassy Brook, potentially reducing the quality of water inputs. Indirect impacts to wildlife may also occur at the edges of the wetland and treed habitats adjacent to development as a result of increased noise and artificial lighting. Because of the culturally impacted nature of the development area and lack of interference with the existing wetland and woodland edge, with the recommended mitigation measures, these indirect impacts to natural features adjacent to the Parcel can be avoided or mitigated.

Two types of Candidate SWH, habitat for Special Concern species (Monarch), and Waterfowl Nesting Habitat, have potential to be impacted by the development. However, none of the species with potential to be present were recorded during field surveys in spring and summer of 2022, and larger higher quality habitat areas of similar type are available in the general area. Similarly, no SAR listed as Threatened or Endangered were identified with significant potential to be impacted by the development, and of the eight species listed as Special Concern with moderate potential for presence in the Study Area, only Monarch has moderate potential to be impacted by loss of breeding habitat in the cultural meadow. Monarch is listed as Special Concern and no approvals under the ESA are required. The remaining SAR with potential habitat in the Study Area would be associated with wetland, treed, or aquatic habitats in the Lower Grassy Brook PSW, which are not within the impact area of the proposed development.

The proposed development will have no direct impact on natural heritage features. The above impacts result in potential contravention of environmental policies regarding wetland buffers. However, implementing the recommended design and mitigation measures in this report, and stormwater management design will minimize the likelihood of indirect impacts to designated features.

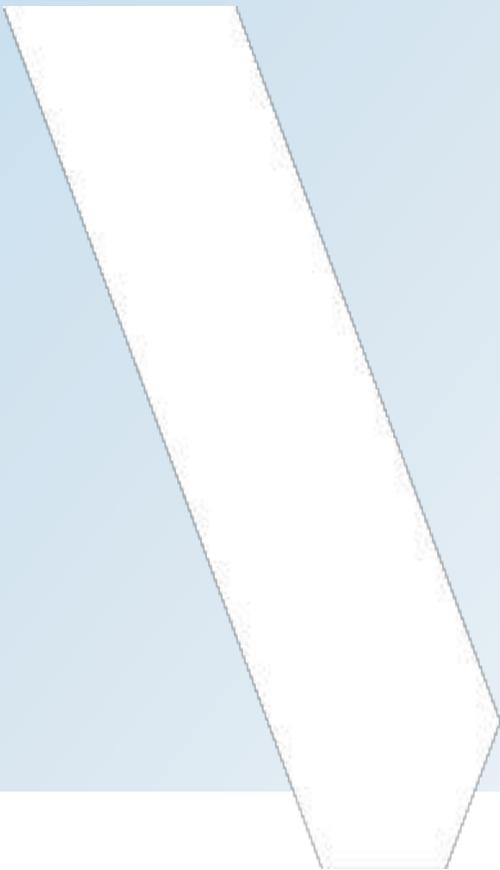
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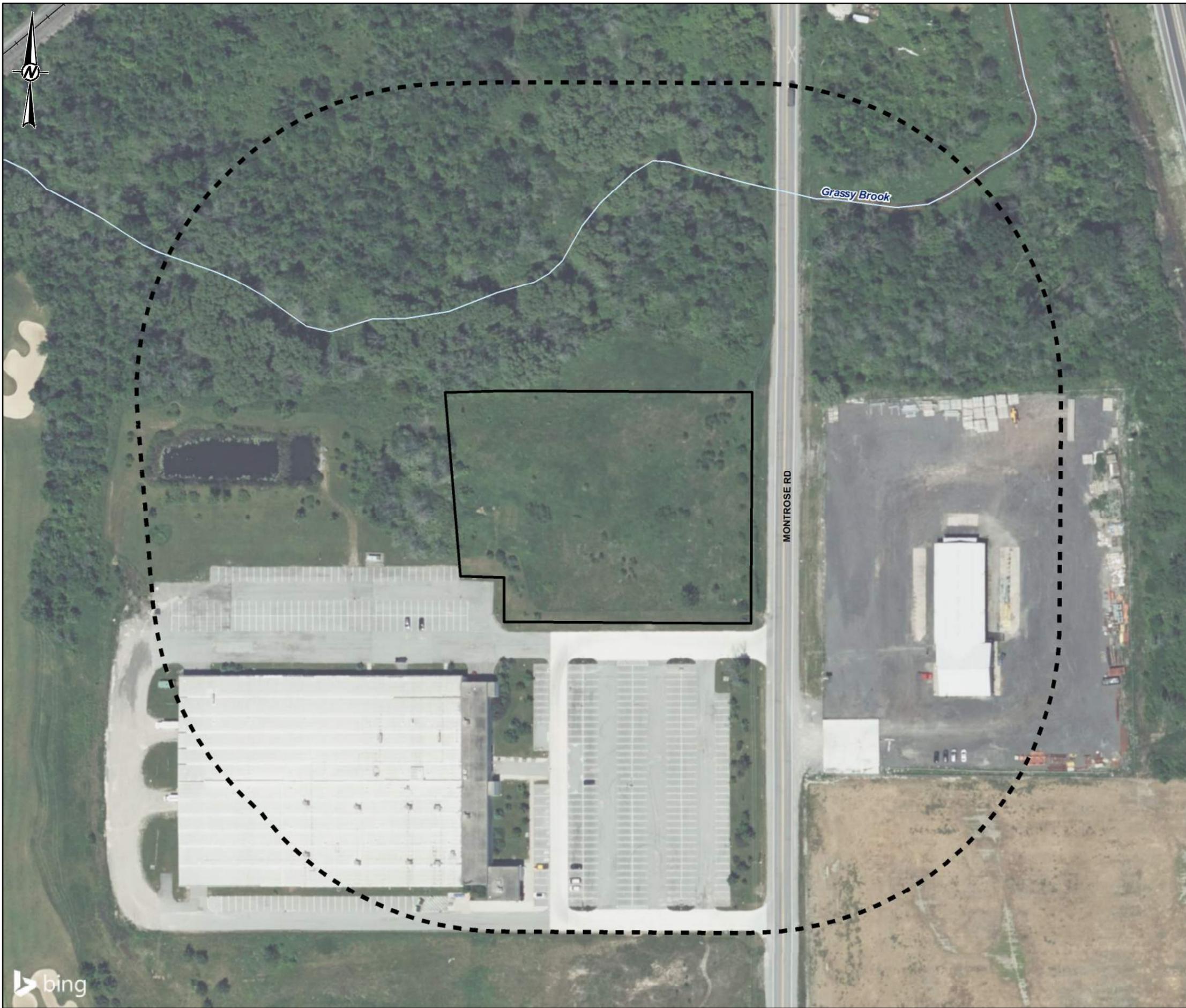
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# APPENDIX

## A FIGURES



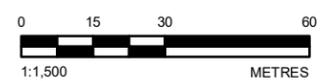
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SCALE 1:50,000

**LEGEND**

-  STUDY AREA LIMIT
-  PARCEL D BOUNDARY



**NOTE(S)**

1. ALL LOCATIONS ARE APPROXIMATE

**REFERENCE(S)**

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N

**CLIENT**

ES FOX LIMITED

**PROJECT**

ENVIRONMENTAL IMPACT STUDY  
9515 MONTROSE ROAD  
NIAGARA FALLS, ONTARIO

**TITLE**

KEY MAP OF LOCATION

**CONSULTANT**



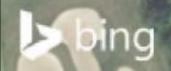
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APPROVED	---

PROJECT NO.  
221-01147-00

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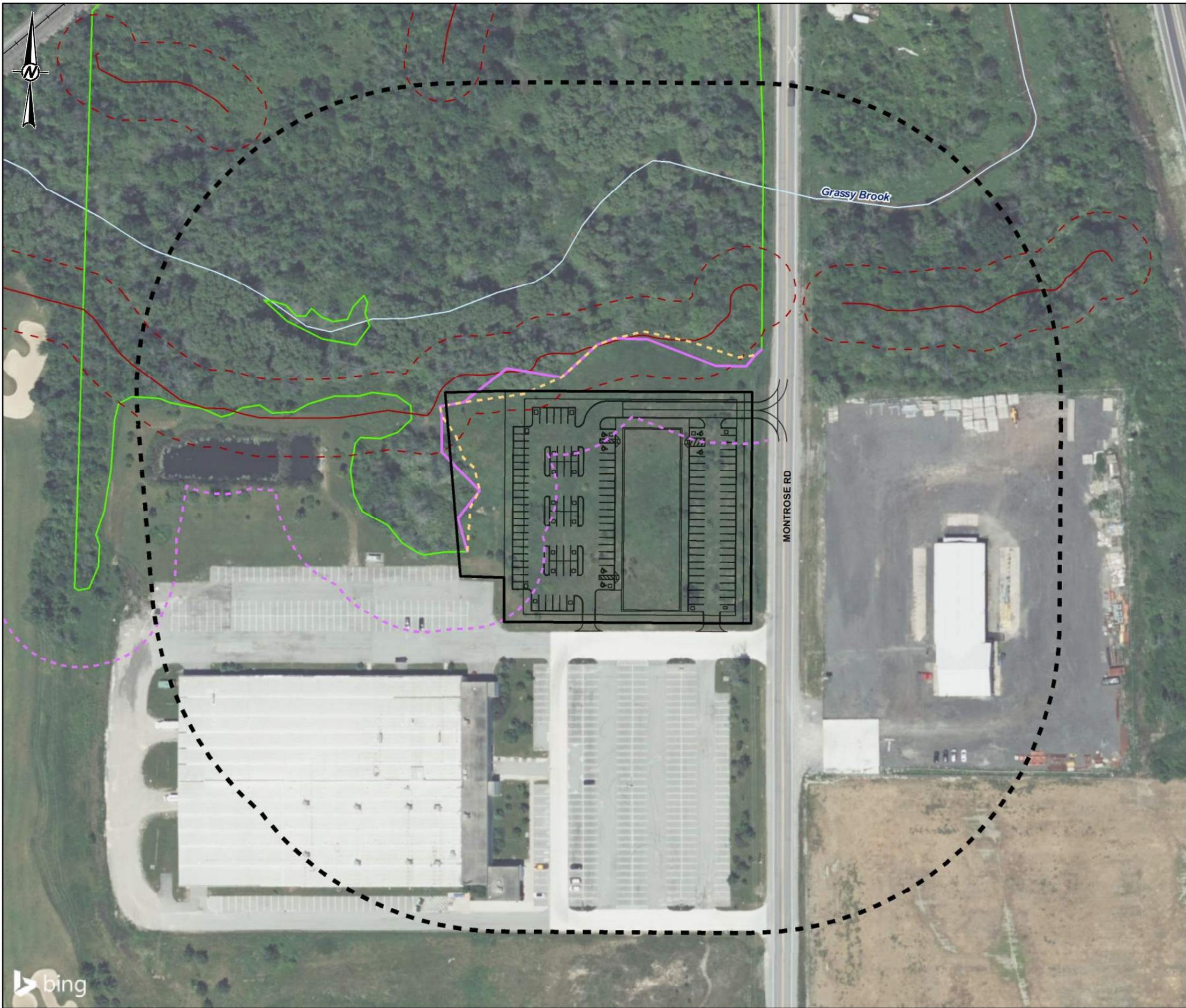
FIGURE  
1



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

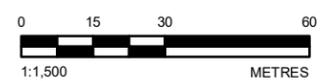






SCALE 1:50,000

- LEGEND**
- STUDY AREA LIMIT
  - PARCEL D BOUNDARY
  - TOP OF SLOPE
  - TOP OF SLOPE ALLOWANCE
  - SURVEYED WOODLAND LIMIT (DELINEATED BY WSP JULY 2022. APPROVED AT SITE WALK WITH REGION OF NIAGARA AND NPCA)
  - SURVEYED WETLAND LIMIT (DELINEATED BY WSP JULY 2022. APPROVED AT SITE WALK WITH REGION OF NIAGARA AND NPCA)
  - SURVEYED WETLAND LIMIT 30M SETBACK
  - WETLAND BOUNDARY (WSP ELC 2022, NOT REVIEWED BY AGENCIES)
  - SITE PLAN



**NOTE(S)**  
1. ALL LOCATIONS ARE APPROXIMATE

**REFERENCE(S)**  
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO  
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N

CLIENT  
**ES FOX LIMITED**

PROJECT  
**ENVIRONMENTAL IMPACT STUDY  
9515 MONTROSE ROAD  
NIAGARA FALLS, ONTARIO**

TITLE  
**CONSTRAINTS AND SITE PLAN**

CONSULTANT	YYYY-MM-DD	2023-03-23
	DESIGNED	---
	PREPARED	---
	REVIEWED	---
	APPROVED	---

PROJECT NO. 221-01147-00 CONTROL 0001 REV. A FIGURE 4

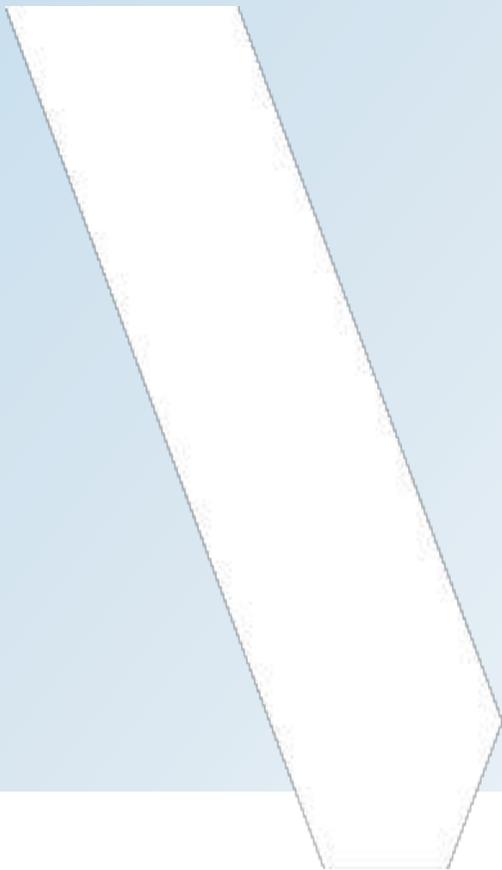
PATH: S:\Client\ES\_Fox\_Limited\9157\_Montrose\_Road\9157\_Montrose\_Road\9157\_PROD\EIS\_Figures\_Plan\Parcel\_D.mxd PRINTED ON: 2023-03-23 AT: 2:01:12 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



# APPENDIX

## **B** SPECIES LISTS



# APPENDIX

## ***B-1*** *PLANT LIST*

Montrose Road Niagara - Parcel D  
Environmental Impact Study  
Appendix B1 - Plant List

Common Name	Scientific Name	cc <sup>1</sup>	cw <sup>1</sup>	OWES Wetland Plant List	Grank <sup>2</sup>	Srank <sup>3</sup>	Tracked by NHC	Native Status	Parcel D	Adjacent Lands	
									CUM1-1	SWD2-2	MAM2-2
Box Elder	<i>Acer negundo</i>	7	3	X	G5	S4?	N	N	X	X	
Common Yarrow	<i>Achillea millefolium</i>		3		G5	SNA	N	I	X		
Garlic Mustard	<i>Alliaria petiolata</i>				GNR	SNA	N	I		x	
Indian Hemp	<i>Apocynum cannabinum</i>	3			GNR	S5			X		
Common Burdock	<i>Arctium minus</i>		3		GNR	SE5				X	
Common Milkweed	<i>Asclepias syriaca</i>		5		G5	S5	N	N	X		
Devil's Beggarticks	<i>Bidens frondosa</i>	3	-3	X	G5	S5	N	N			X
Hedge False Bindweed	<i>Calystegia sepium</i>	2			G5	S5				X	
Pointed Broom Sedge	<i>Carex scoparia</i>	5	-3		G5	S5			X		
Spotted Water-hemlock	<i>Cicuta maculata</i>	6	-5		G5	S5		N			X
Canada Enchanter's Nightshade	<i>Circaea canadensis</i>	3	3		G5	S5		N		X	
Canada Thistle	<i>Cirsium arvense</i>		3		G5	SNA	Y	I	X		
Bull Thistle	<i>Cirsium vulgare</i>		3		GNR	SNA	N	I	X		
Gray Dogwood	<i>Cornus racemosa</i>	2		X	G5	S5	N	N	X	X	
Redosier Dogwood	<i>Cornus sericea</i>	2	-3	X	G5	S5	N	N		X	
Cockspur Hawthorn	<i>Crataegus crus-galli</i>	4			G5	S4				X	
Fuller's Teasel	<i>Dipsacus fullonum</i>		3		GNR	SNA	N	I	X		
Quackgrass	<i>Elymus repens</i>		3		GNR	SNA	N	I	X		
Virginia Wild-rye	<i>Elymus virginicus</i>										X
Field Horsetail	<i>Equisetum arvense</i>			X	G5	S5	N	N		X	
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	2			G5	S5		N	X		
Woodland Strawberry	<i>Fragaria vesca ssp. americana</i>	4	3		G5T5	S5	N	N		X	
Green Ash	<i>Fraxinus pennsylvanica</i>	3	-3	X	G5	S4	N	N	X	X	
Catchweed Bedstraw	<i>Galium aparine</i>	4	3		G5	S5	N	N		X	
Herb Bennet	<i>Geum urbanum</i>		5		G5	SNA	N	I		X	
Dame's Rocket	<i>Hesperis matronalis</i>		3		G4G5	SE5	N	I		X	
St. John's Wort	<i>Hypericum perforatum</i>		5		GNR	SNA	N	I	X		
Spotted Touch-me-not	<i>Impatiens capensis</i>	4	-3	X	G5	S5	N	N		X	X
Elecampane Inula	<i>Inula helenium</i>		3	X	GNR	SNA	N	I	X		
Iris Species	<i>Iris sp.</i>									X	
Soft Rush	<i>Juncus effusus</i>	4	-5		G5	S5				X	
Slender Rush	<i>Juncus tenuis</i>				G5	S5	N	N		X	
Eastern Red Cedar	<i>Juniperus virginiana</i>	4	3		G5	S5		N	X		
Tuberous Sweet Pea	<i>Lathyrus tuberosus</i>		5		GNR	SE3			X		
Rice Cutgrass	<i>Leersia oryzoides</i>	3	-5	X	G5	S5	N	N			X
White Cut Grass	<i>Leersia virginica</i>	6	-3		G5	S4		N		X	
Cardinal Flower	<i>Lobelia cardinalis</i>	7	-5		G5	S5					X
Tartarian Honeysuckle	<i>Lonicera tatarica</i>		3		GNR	SNA	N	I		X	

Montrose Road Niagara - Parcel D  
Environmental Impact Study  
Appendix B1 - Plant List

Common Name	Scientific Name	cc <sup>1</sup>	cw <sup>1</sup>	OWES Wetland Plant List	Grank <sup>2</sup>	Srank <sup>3</sup>	Tracked by NHIC	Native Status	Parcel D	Adjacent Lands	
									CUM1-1	SWD2-2	MAM2-2
Garden Bird's-foot-trefoil	<i>Lotus corniculatus</i>		3		GNR	SNA	N	I	X		
Creeping Jenny	<i>Lysimachia nummularia</i>		-3		GNR	SNA	Y	I		X	
Apple Species	<i>Malus sp.</i>								X		
Thicket Creeper	<i>Parthenocissus vitacea</i>	4	3		G5	S5	N	N	X		
Arrow-leaved Tearthumb	<i>Persicaria sagittata</i>	5	-5		G5	S4S5					X
Virginia Knotweed	<i>Persicaria virginiana</i>	6			G5	S4				X	
Reed Canary Grass	<i>Phalaris arundinacea</i>		-3	X	G5	S5	N	N	X	X	X
Common Timothy	<i>Phleum pratense</i>		3		GNRTNR	SNA	N	I	X		
European Reed	<i>Phragmites australis ssp. Australis</i>		-3		G5T5	SE5		I	X		
Kentucky Bluegrass	<i>Poa pratensis ssp. pratensis</i>		3		G5T5	S5	N	I	X		
Plains Cottonwood	<i>Populus deltoides ssp. monilifera</i>				G5T5	S2?			X		
Common Buckthorn	<i>Rhamnus cathartica</i>		3	X	GNR	SNA	N	I	X	X	
Staghorn Sumac	<i>Rhus typhina</i>	1	3		G5	S5	N	N	X		
American Red Raspberry	<i>Rubus idaeus var. strigosus</i>										X
White Willow	<i>Salix alba</i>		-3		G5	SE4		I		X	
Common Elderberry	<i>Sambucus nigra ssp. canadensis</i>	5	-3	X	G5	S5	N	N		X	
Crownvetch	<i>Securigera varia</i>		5		GNR	SNA	N	I	X		
Water Parsnip	<i>Sium suave</i>	4	-5		G5	S5		N		X	
Tall Goldenrod	<i>Solidago altissima</i>	1	3		G5	S5		N	X	X	
Wrinkle-leaf Goldenrod	<i>Solidago rugosa</i>	4			G5	S5				X	
Field Sow-thistle	<i>Sonchus arvensis</i>		3		GNR	SE5			X		
Heath Aster	<i>Symphotrichum ericoides</i>	4	3		G5	S5			X		
White Panicked Aster	<i>Symphotrichum lanceolatum var.</i>	3	-3		G5TNR	S4S5		N	X	X	
Calico Aster	<i>Symphotrichum lateriflorum</i>	3			G5	S5		N	X		
New England Aster	<i>Symphotrichum novae-angliae</i>	2	-3		G5	S5		N	X	X	
Common Tansy	<i>Tanacetum vulgare</i>		5		GNR	SE5		I	X		
American Basswood	<i>Tilia americana</i>	4	3		G5	S5	N	N	X		
American Elm	<i>Ulmus americana</i>	3	-2	X	G4	S5	N	N		X	
Stinging Nettle	<i>Urtica dioica ssp. dioica</i>	2			G5T5?	SNA	N	I		X	X
Nannyberry	<i>Viburnum lentago</i>	4	-1		G5	S5		N		X	
European Cranberrybush	<i>Viburnum opulus</i>	5	-3		G5	S5		I		X	
Tufted Vetch	<i>Vicia cracca</i>		5		GNR	SNA	N	I	X		
Woolly Blue Violet	<i>Viola sororia</i>	4	1		G5	S5		N		X	
Riverbank Grape	<i>Vitis riparia</i>		-2		G5	S5	N	N	X	X	
Rough Cocklebur	<i>Xanthium strumarium</i>	2			G5	S5		N			X

Note: No ESA or SARA designated species were recorded

## **PLANT LIST LEGEND**

### **Scientific Name, Common Name, and Family**

Based on Vascan and NHIC (September 21, 2022)

Vascan: <http://data.canadensys.net/vascan/search>

NHIC: [https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO\\_SPECIES\\_LISTS.zip](https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO_SPECIES_LISTS.zip)

### **Coefficient of Conservatism, Coefficient of Wetness, Weediness, and Physiology/Habit**

Oldham, M. J., W. D. Bakowsky and D. A. Sutherland. 1995. *Floristic Quality Assessment System for Southern Ontario*. Natural Heritage Information Centre, Ministry of Natural Resources. Peterborough, Ontario.

CC and CW values reflect updates by NHIC, current as of February 28, 2020).

- CC: Coefficient of Conservatism. Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters.
- CW: Coefficient of Wetness. Value between 5 and -5. A value of -5 is assigned to Obligate Wetland (OBL) and 5 to Obligate Upland (UPL), with intermediate values assigned to the remaining categories.
- Weediness: Assigned to all non-native species and range from -1 (low impact of the species on natural areas) to -3 (high impact of the species on natural areas).
- Habit: Physiology/Habit. The growth form of the species (e.g. forb, shrub, tree).

### **OWES Wetland Plant List**

Ontario Ministry of Natural Resources. 2013. *Ontario Wetland Evaluation System Southern Manual. 3rd Edition, Version 3.3*; Ontario Ministry of Natural Resources. 2013. *Ontario Wetland Evaluation System Northern Manual. 1st Edition, Version 1.3*

Species presence or absence from the Ontario Wetland Evaluation System (OWES) Wetland Plant List.

Codes are defined as follows:

X: Present on the list

### **G-Rank (Global)**

Global Status from Nature Serve (via NHIC, February 28, 2020)

Nature Serve: <http://explorer.natureserve.org/>

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

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

#### *Global (G) Conservation Status Ranks*

- G1: Critically Imperiled - At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
- G2: Imperiled - at high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- G3: Vulnerable - At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- G4: Apparently Secure - At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- G5: Secure - At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.

- G#G#:** Range Rank – A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).
- GX:** Presumed Extinct - Not located despite intensive searches and virtually no likelihood of rediscovery.
- GH:** Possibly Extinct - Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
- GU:** Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- GNR:** Unranked – Global rank not yet assessed
- GNA:** Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities. A global conservation status rank may be not applicable for several reasons, related to its relevance as a conservation target. For species, typically the species is a hybrid without conservation value, or of domestic origin. For ecosystems, the type is typically non-native (e.g., many ruderal vegetation types), agricultural (e.g. pasture, orchard) or developed (e.g. lawn, garden, golf course).
- ?:** Inexact Numeric Rank – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.
- T#:** Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species, for example, a G1T2 subrank should not occur. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.
- Q:** Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower priority (numerically higher) conservation status rank. The “Q” modifier is only used at a global level and not at a national or subnational level.
- C:** Captive or Cultivated Only – Taxon or ecosystem at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population or ecosystem restoration, not yet established. The “C” modifier is only used at a global level and not at a national or subnational level. Possible ranks are GXC or GHC. This is equivalent to “Extinct” in the Wild (EW) in IUCN’s Red List terminology (IUCN 2001).

### **S-Ranks (Provincial)**

*Provincial Status from the NHIC (February 28, 2020)*

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

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

#### *Provincial/Sub-national (S) Conservation Status Ranks*

- S1:** Critically Imperiled – At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
- S2:** Imperiled – At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- S3:** Vulnerable – At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- S4:** Apparently Secure – At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or Secure – At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

- S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
- SX: Presumed Extirpated – Species or ecosystem is believed to be extirpated from the jurisdiction (province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. [equivalent to “Regionally Extinct” in IUCN Red List terminology]
- SH: Possibly Extirpated (Historical) – Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
- SNR: Unranked – Nation of state/province conservation status not yet assessed.
- SU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities (e.g., long distance aerial and aquatic migrants, hybrids without conservation value, and non-native species).
- ?: Inexact or Uncertain - Denotes inexact or uncertain numeric rank.
- T#: Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the subnational rank of a critically imperiled subspecies of an otherwise widespread and common species would be S5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species, for example, a S1T2 subrank should not occur. A vertebrate animal population may be tracked as an intraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

### **Native Status**

*Based on Vascan and NHIC (February 28, 2020)*

Vascan: <http://data.canadensys.net/vascan/search>

NHIC: [https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO\\_SPECIES\\_LISTS.zip](https://www.sdc.gov.on.ca/sites/MNRF-PublicDocs/EN/ProvincialServices/ONTARIO_SPECIES_LISTS.zip)

Codes are defined as follows:

- N: Native  
I: Introduced

## APPENDIX

# ***B-2 WILDLIFE LIST***

Common Name	Scientific Name	Grank <sup>1</sup>	Srank <sup>2</sup>	MNR Area Sensitive <sup>7</sup>	Habitat Use <sup>8</sup>	Dependency on Wetlands <sup>9</sup>	NHIC Tracked	Early Nest Date <sup>10</sup>	Late Nest Date <sup>12</sup>	Area Sensitive Birds - Ecoregion <sup>7E</sup>	Protected Under MBCA	Parcel D				Adjacent Lands			
												25-May-22		13-Jun-22		25-May-22		13-Jun-22	
												Breeding Evidence	Abundance						
American Crow	<i>Corvus brachyrhynchos</i>	G5	S5B		E		N	3-Mar	20-Jun						H	1			
American Goldfinch	<i>Spinus tristis</i>	G5	S5B		E		N	13-Jun	24-Sep		✓	S	3	S	4	S	4	T	4
American Robin	<i>Turdus migratorius</i>	G5	S5B		E		N	8-Apr	15-Aug		✓	S	4	S	1	S	7		
Baltimore Oriole	<i>Icterus galbula</i>	G5	S4B		E		N	18-May	24-Jun		✓	S	1			P	3	P	2
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	G5	S4B,SZN		I/E		N	20-May	8-Sep		✓					H	2		
Blue Jay	<i>Cyanocitta cristata</i>	G5	S5		I/E		N	15-Apr	8-Jul							H	1	T	3
Brown-headed Cowbird	<i>Molothrus ater</i>	G5	S4B		E		N	17-Apr	5-Aug							S	3		
Cedar Waxwing	<i>Bombycilla cedrorum</i>	G5	S5B		E		N	21-May	16-Sep		✓			S	2				
Common Grackle	<i>Quiscalus quiscula</i>	G5	S5B		E		N	4-Apr	12-Jul									H	2
Common Yellowthroat	<i>Geothlypis trichas</i>	G5	S5B		I/E	D	N	19-May	29-Jul		✓			S	1	S	2	T	3
Eastern Phoebe	<i>Sayornis phoebe</i>	G5	S5B		I/E		N	6-Apr	4-Aug		✓					S	1		
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	G5	S4B		I/E		N	6-May	13-Aug		✓					S	1		
European Starling	<i>Sturnus vulgaris</i>	G5	SNA		E		N	26-Mar	19-Jul			H	1	H	1				
Gray Catbird	<i>Dumetella carolinensis</i>	G5	S4B		I/E		N	2-May	18-Aug		✓					H	1	T	2
Hairy Woodpecker	<i>Picoides villosus</i>	G5	S5	X	I	P	N	16-Apr	8-Jun		✓							H	1
House Finch	<i>Carpodacus mexicanus</i>	G5	SNA				N	21-Mar	3-Aug		✓	S	1			S	1		
Mourning Dove	<i>Zenaida macroura</i>	G5	S5		E		N	19-Mar	28-Sep		✓	H	4					H	1
Northern Cardinal	<i>Cardinalis cardinalis</i>	G5	S5		I/E		N	13-Apr	15-Aug		✓					S	1	T	1
Red-eyed Vireo	<i>Vireo olivaceus</i>	G5	S5B		I/E		N	26-May	10-Aug		✓							S	1
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	G5	S4		E	P	N	5-Apr	3-Aug			S	3	S	2	S	9	T/P	4
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	G5	S4B		I/E		N	10-May	16-Jul		✓			H	1				
Song Sparrow	<i>Melospiza melodia</i>	G5	S5B		E		N	17-Apr	3-Sep		✓	S	2	S	1	S	4	T	2
Warbling Vireo	<i>Vireo gilvus</i>	G5	S5B		E		N	20-May	5-Jul		✓			S	1	S	2		
Willow Flycatcher	<i>Empidonax traillii</i>	G5	S5B,SZN				N	13-Jun	20-Jul		✓	S	1						
Yellow Warbler	<i>Setophaga petechia</i>	G5	S5B		E	P	N	15-May	17-Jul		✓	S	2			P	5	T	4

Species Recorded: 25

14

21

Note: No ESA or SARA designated species recorded

## **WILDLIFE LIST LEGEND**

### **<sup>1</sup>G-Rank (global)**

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

- G1 Extremely rare - usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to Extinction.
- G2 Very rare - usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to Extinction.
- G3 Rare to uncommon - usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4 Common - usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5 Very common - demonstrably secure under present conditions.

### **<sup>2</sup>S-Rank (provincial)**

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

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

### **<sup>6</sup> MNR Area Sensitive Species**

Area Sensitivity is defined as species requiring large areas of suitable habitat in order to sustain population numbers

*From: Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch, Wildlife Section. Science Development and Transfer Branch, Southcentral Science Section. 151pp. + appendices.*

From: Ministry of Natural Resources and Forestry. 2015. *Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E*. January, 2015. Regional Operations Division, Southern Region Resources Section. 41pp.

#### **7 Habitat Use**

I=interior species,

I/E=interior edge species,

E=edge species (Freemark and Collins, 1989);

M/F=Marsh/Fen,

S/B=Treeed Swamp/Bog.

Interior bird species require habitat which is often found 100m from the forest edge while Interior/Edge species are found within both interior and edge habitat. Often Interior and Interior/Edge are more sensitive to urban encroachment as they require these large, relatively undisturbed forest habitats to support viable populations. The increasing urbanization of rural areas often results in increased parasitism and predation as well as disturbance from human recreational activities (e.g. illegal bike trails, dumping and pets.) (Freemark, K. and Collins, B. 1989. *Landscape ecology of birds breeding in temperate forest fragments*. – In: Hagan III, J. M. and Johnston, D. W. (eds), *Ecology and conservation of neotropical migrant landbirds*. Smithsonian Inst. Press, pp. 443–454)

#### **8 Dependancy on Wetlands**

Wetlands are home to many species of birds. Wetland birds are determined by the kind of habitat and the seasonal movement of migrating species.

Dependant (D) - These species depend on wetlands for their survival. Most nest within wetlands, a few such as the Great Blue Heron, nest elsewhere but feed extensively in wetlands, and other such as the Wood Duck, nest away from wetlands but rear their young in marshes and fens.

Partially Dependant (P) - These species use wetlands habitats extensively for breeding or feeding, as well as other types of habitat.

*Van Patter, Mark and Stewart Hilts. 1985. Some Important Wetlands of Ontario South of the Precambrian Shield. Federation of Ontario Naturalists.*

### **Ontario Breeding Bird Atlas - Breeding Evidence Codes**

#### **OBSERVED**

X Species observed in its breeding season (no breeding evidence).

#### **POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat.

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

#### **PROBABLE**

P Pair observed in suitable nesting habitat in nesting season.

T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult.

B Brood Patch on adult female or cloacal protuberance on adult male.

N Nest-building or excavation of nest hole.

**CONFIRMED**

- DD Distraction display or injury feigning.
- NU Used nest or egg shells found (occupied or laid within the period of the survey).
- FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.
- AE Adult leaving or entering nest sites in circumstances indicating occupied nest.
- FS Adult carrying fecal sac.
- CF Adult carrying food for young.
- NE Nest containing eggs.
- NY Nest with young seen or heard.

# APPENDIX

## C SPECIES AT RISK SCREENING



Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Birds								
<b>Bank Swallow (Riparia riparia)</b>	THR	Species and General Habitat Protection	OBBA (Square 17TPH56)	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. steep vertical riparian banks) within Study Area.	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	None - Low likelihood of presence, no suitable habitat impacted.
<b>Barn Swallow (Hirundo rustica)</b>	SC	Species and General Habitat Protection	OBBA (Square 17TPH56)	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc. (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. bridges) within Study Area	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	None - Low likelihood of presence, no suitable habitat impacted.
<b>Bobolink (Dolichonyx oryzivorus)</b>	THR	Species and General Habitat Protection	NHIC (Square 17PH5267)	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. >10ha grasslands) occurs within Study Area.	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, meadow area impacted is too small to be considered suitable habitat.
<b>Chimney Swift (Chaetura pelagica)</b>	THR	Species and General Habitat Protection	OBBA (Square 17TPH56)	Historically found in deciduous and coniferous, usually wet forest types, all with a well-developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. chimneys) occurs within Study Area	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	None - Low likelihood of presence, no suitable habitat impacted.
<b>Eastern Meadowlark (Sturnella magna)</b>	THR	Species and General Habitat Protection	OBBA (Square 17TPH56)	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. >5ha grasslands) occurs within Study Area	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, meadow area impacted is too small to be considered suitable habitat.
<b>Eastern Whip-poor-will (Caprimulgus vociferus)</b>	THR	Species and General Habitat Protection	OBBA (Square 17TPH56)	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. >100ha of open forest with little ground cover) occurs within Study Area	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	None - Low likelihood of presence, no suitable habitat impacted.
<b>Eastern Wood-pewee (Contopus virens)</b>	SC	N/A	OBBA (Square 17TPH56)	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. deciduous and mixed forest) occurs within Study Area. Adjacent habitat is a young SWD2-2.	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, adjacent wooded area not preferred habitat.
<b>Least Bittern (Ixobrychus exilis)</b>	THR	Species and General Habitat Protection	OBBA (Square 17TPH56)	Generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. large wetlands with equal amounts of open water and dense emergent vegetation) is within Study Area	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	None - Low likelihood of presence, no suitable habitat impacted.
<b>Northern Bobwhite (Colinus virginianus)</b>	END	Species and General Habitat Protection	NHIC (Square 17PH5267)	Generally inhabits a variety of edge and grassland type - habitats including non-intensively farmed agricultural lands (MNRF Guelph - Waterloo List, 2014)	Low - Habitat in Study Area (i.e. cultural meadow, edges with swamp and marsh) not ideal habitat (i.e. mosaic of croplands, pine-hardwood forests and fields)	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, impacted habitat in Study Area not suitable.
<b>Red-headed Woodpecker (Melanerpes erythrocephalus)</b>	END	N/A	OBBA (Square 17TPH56)	Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks (MNRF Guelph - Waterloo List, 2014)	Low - Habitat in Study Area (i.e. cultural meadow, edges with riparian, swamp and marsh habitat) present but not ideal breeding habitat (i.e. open treed habitats)	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, impacted habitat in Study Area not suitable.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Short-eared Owl (Asio flammeus)</b>	SC	N/A	OBBA (Square 17TPH56)	Generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. open or wetland habitats) occurs within Study Area	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, impacted habitat in Study Area not suitable.
<b>Wood Thrush (Hylocichla mustelina)</b>	THR	N/A	OBBA (Square 17TPH56)	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments (MNRF Guelph - Waterloo List, 2014)	Low - No suitable breeding habitat (i.e. >1ha deciduous or mixed forest with sapling understory) occurs within Study Area. Adjacent habitat is a young SWD2-2	2 Breeding Bird Surveys and SAR Habitat Assessment	No observations	Low - Species not observed, adjacent wooded area not preferred habitat.
Insects								
<b>Monarch (Danaus plexippus)</b>	SC	N/A	OBA (Square 17PH56)	Exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces (MNRF Guelph - Waterloo List, 2014)	Moderate - Suitable breeding habitat (i.e. Milkweed) was recorded as frequent within Study Area	SAR Habitat Assessment	No observations	<b>Moderate</b> - Species not observed during field studies, however suitable breeding habitat proposed for removal in cultural meadow.
Mammals								
<b>Little Brown Bat (Little Brown Myotis) (Myotis lucifugus)</b>	END	Species and General Habitat Protection	Niagara Region Correspondence (Nov 25, 2021)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh) (MNRF Guelph - Waterloo List, 2014)	Low - No suitable habitat, the deciduous swamp adjacent to Parcel D is composed of young trees. One cavity tree identified adjacent to Montrose Rd in 2017 EIS appears to have been removed. No rock pile / crevice habitat present.	SAR Habitat Assessment	No observations	Low - Low likelihood of presence in Study Area. No suitable roosting habitat impacted.
<b>Northern Long-eared Bat (Northern Myotis) (Myotis septentrionalis)</b>	END	Species and General Habitat Protection	Niagara Region Correspondence (Nov 25, 2021)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)(MNRF Guelph - Waterloo List, 2014)		SAR Habitat Assessment	No observations	
<b>Small-footed Bat (Myotis leibii)</b>	END	Species and General Habitat Protection	Niagara Region Correspondence (Nov 25, 2021)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark (MNRF Guelph - Waterloo List, 2014)		SAR Habitat Assessment	No observations	
<b>Tri-colored Bat (Perimyotis subflavus)</b>	END	Species and General Habitat Protection	Niagara Region Correspondence (Nov 25, 2021)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Manmade structures or tree cavities. Foraging over still water, rivers, or in forest gaps (COSEWIC 2013f)		SAR Habitat Assessment	No observations	

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Reptiles								
<b>Blanding's Turtle</b> ( <i>Emydoidea blandingii</i> )	THR	Species and General Habitat Protection	ORAA (Square 17PH56)	Generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - Suitable habitat (i.e. shallow water, soft substrates and vegetation) is present within Grassy Brook. Potential for individuals to walk through parcel.	1 Turtle Basking Survey and SAR Habitat Assessment	No observations	Low - Potential for presence in Grassy Brook valley, and transiting the parcel, however no impacts to wetland habitat are proposed, and mitigation measures can avoid impacts to individuals.
<b>Eastern Musk Turtle</b> ( <i>Sternotherus odoratus</i> )	SC	N/A	ORAA (Square 17PH56)	Found in ponds, lakes, marshes and rivers that are generally slow-moving, have abundant emergent vegetation, and muddy bottoms. Nesting is in soil, decaying vegetation and rotting wood close to the water and exposed to direct sunlight (MNRF Species Profile Online 2014).	<b>Moderate</b> - Suitable habitat (i.e. shallow water, soft substrates and vegetation) is present within Grassy Brook. Potential for individuals to walk through parcel.	1 Turtle Basking Survey and SAR Habitat Assessment	No observations	
<b>Northern Map Turtle</b> ( <i>Graptemys geographica</i> )	SC	N/A	ORAA (Square 17PH56)	Generally inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - Suitable habitat (i.e. shallow water with soft substrates) is present within Grassy Brook, however species typically inhabits larger waterbodies.	1 Turtle Basking Survey and SAR Habitat Assessment	No observations	
<b>Snapping Turtle</b> ( <i>Chelydra serpentina</i> )	SC	N/A	NHIC (Square 17PH5267), ORAA (Square 17PH56)	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits (MNRF Guelph - Waterloo List, 2014)	<b>High</b> - Suitable habitat (i.e. shallow water with soft substrates) is present within Grassy Brook. Potential for individuals to walk through parcel.	1 Turtle Basking Survey and SAR Habitat Assessment	One Snapping Turtle observed within the SWM Pond west of Parcel D	
Fish								
<b>Grass Pickerel</b> ( <i>Esox americanus</i> )	SC	N/A	NHIC (Square 17PH5267), DFO SAR Map	generally occur in wetlands with warm, shallow water and an abundance of aquatic plants; occurrence in Hamilton: Twenty Mile Creek and all tributaries of the Welland River (MNRF Guelph - Hamilton List, 2013)	<b>High</b> - Grassy Brook provides suitable habitat, and DFO notes records in Welland River tributaries	Aquatic Habitat Assessment	No observations	None - Potential for presence in Grassy Brook is high but unconfirmed, however proposed development will not impact within 30 m of the watercourse.
<b>Spotted Sucker</b> ( <i>Minytrema melanops</i> )	SC	N/A	DFO SAR Map	Clear Creeks and small to moderate sized rivers with sand, gravel, or hard-clay bottoms, usually free of silt. Spawning occurs in rocky riffle areas in late spring (MNRF Species Profile Online 2014).	<b>Moderate</b> - Grassy Brook provides habitat with sandy substrate, but turbid / silty water not ideal habitat.	Aquatic Habitat Assessment	No observations	None - Potential presence in Grassy Brook, however proposed development will not impact within 30 m of the watercourse.
Mussels								
<b>Eastern Pondmussel</b> ( <i>Ligumia nasuta</i> )	SC	Species and General Habitat Protection	NHIC (Square 17PH5267)	Generally inhabit sheltered areas of lakes or slow streams in substrates of fine sand and mud (MNRF Guelph - Hamilton List, 2013)	Low - Grassy Brook substrates not suitable.	Aquatic Habitat Assessment	No observations	None - Low likelihood of presence, no impact within 30m of watercourse.
<b>Round Hickorynut</b> ( <i>Obovaria subrotunda</i> )	END	Species and General Habitat Protection	NHIC (Square 17PH5267)	Mainly found in rivers with clay, sand, or gravel bottoms with moderately fast moving water; may also occur in shallow areas of lakes with firm sand. (MNRF Species Profile Online 2014)	Low - Typically found in medium to large rivers at depths up to 2 m. Grassy Brook does not provide suitable habitat.	Aquatic Habitat Assessment	No observations	None - Low likelihood of presence, no impact within 30m of watercourse.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Plants								
<b>American Columbo (Fraseria caroliniensis)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Most commonly associated with open deciduous forested slopes, thickets and clearings; grows in a variety of relatively stable habitats as well as on a wide variety of soils (MNRF Guelph - Hamilton List, 2013).	Low - No suitable habitat (i.e. thicket slope) occurs within the Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>American Chestnut (Castanea dentata)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils (MNRF Guelph - Waterloo List, 2014).	Low - No suitable habitat (i.e. forest with acidic soils) occurs within the Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>American Water-willow (Justicia americana)</b>	THR	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Grows along the shores and in the waters of streams, rivers, lakes, ditches and occasionally wetlands. It can grow on wet soil and in up to 1.2 metres of water, but appears to require periodic flooding and wave action to reduce competition from other aquatic plants. The underlying subsoil on which it grows is usually gravel, sand or organic matter (MNRF Species Profile Online 2014).	<b>Moderate</b> - Suitable habitat (i.e. shoreline) occurs along Grassy Brook	3 Season Botanical Inventory	No observations	Low - Impact area more than 30 m from Grassy Brook, limited to Cultural Meadow vegetation.
<b>Broad Beech Fern (Phegopteris hexagonoptera)</b>	SC	N/A	Vascular Plants at Risk in Ontario (2018)	Generally inhabits shady areas of beech and maple forests where the soil is moist or wet (MNRF Guelph - Hamilton List, 2013).	Low - No suitable habitat (i.e. shady forest) occurs within the Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>Butternut (Juglans cinerea)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows (MNRF Guelph - Waterloo List, 2014).	<b>Moderate</b> - Suitable habitat (i.e. treed area along stream) is present within the adjacent SWD2-2 however, Butternut was not observed	3 Season Botanical Inventory	No observations	Low - Species not observed. Impact area limited to Cultural Meadow vegetation.
<b>Cherry Birch (Betula lenta)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	In Ontario, the Cherry Birch is found on moist, well-drained clay loam soil over limestone bedrock with White Oak, Red Oak, Eastern Hemlock, Sugar Maple and other deciduous trees.	Low - No suitable habitat (i.e. forest) occurs within the Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>Common Hoptree (Ptelea trifoliata)</b>	THR	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Rare in Canada, though plentiful in the eastern United States. It is only known to occur in southwestern Ontario on the north shore of Lake Erie (MNRF Species Profile Online 2014).	Low - Parcel D is not located on Lake Erie	3 Season Botanical Inventory	No observations	None - Parcel outside known range of species.
<b>Cucumber Tree (Magnolia acuminata)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	In Ontario, Cucumber Trees are found in upland moist deciduous or mixed forest habitats, where they grow in rich, well-drained soils, often in headwater areas or on rises within low swampy areas.	<b>Moderate</b> - Suitable habitat (i.e. rise within swampy area) is present within the adjacent SWD2-2, however, Cucumber Tree was not observed	3 Season Botanical Inventory	No observations	Low - Species not observed. Impact area limited to Cultural Meadow vegetation.
<b>Deerberry (Vaccinium stamineum)</b>	THR	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	In Canada, Deerberry is found in habitats where the climate is moderated by their proximity to large bodies of water such as the Niagara and St. Lawrence rivers and to Lake Ontario. Within Ontario, Deerberry is found predominately in dry open woods on sandy and well-drained soils growing under oaks, Pitch Pine or White Pine (MNRF Species Profile Online 2014).	Low - No suitable habitat (i.e. dry forest) occurs within Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Eastern Flowering Dogwood (<i>Cornus florida</i>)</b>	END	Species Protection and Habitat Regulation	Vascular Plants at Risk in Ontario (2018)	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows (MNRF Guelph - Waterloo List, 2014).	Low - No suitable habitat (i.e. dry forest) occurs within Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>Green Dragon (<i>Arisaema dracontium</i>)</b>	SC	N/A	Vascular Plants at Risk in Ontario (2018)	Generally grows in damp deciduous forests and along streams (MNRF Guelph - Waterloo List, 2014).	<b>Moderate</b> - Suitable habitat (i.e. stream) occurs along Grassy Brook	3 Season Botanical Inventory	No observations	Low - Impact area more than 30 m from Grassy Brook, limited to Cultural Meadow vegetation.
<b>Red Mulberry (<i>Morus rubra</i>)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; can grow in open areas such as hydro corridors (MNRF Guelph - Hamilton List, 2013).	Low - No suitable habitat (i.e. forest) occurs within Study Area	3 Season Botanical Inventory	No observations	Low - Species not observed. Impact area limited to Cultural Meadow vegetation.
<b>Round-leaved Greenbriar (<i>Smilax rotundifolia</i>)</b>	THR	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	In Ontario, Round-leaved greenbrier is found mainly in the warmer climate of the Carolinian Forest. It prefers open moist to wet woodlands, often growing on sandy soil (MNRF Species Profile Online 2014).	Low - No suitable habitat (i.e. sandy forest) occurs within Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>Shumard Oak (<i>Quercus shumardii</i>)</b>	SC	N/A	Vascular Plants at Risk in Ontario (2018)	Shumard oak requires rich, moist, poorly-drained clay or clay loam soil; it's typically found in open-canopy deciduous forests, swamps, and hedgerows (Vascular Plants at Risk in Ontario 2018).	<b>Moderate</b> - Suitable habitat (i.e. forest and swamp) occurs within the SWD2-2 unit north of the parcel.	3 Season Botanical Inventory	No observations	Low - Species not observed. Impact area limited to Cultural Meadow vegetation.
<b>Spotted Wintergreen (<i>Chimaphila maculata</i>)</b>	END	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Generally grows in sandy habitats in dry-mesic oak-pine woods. In Canada, they grow very close to the Great Lakes (MNRF Guelph - Hamilton List, 2013).	Low - No suitable habitat (i.e. forest) occurs within Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.
<b>Virginia Mallow (<i>Sida hermaphrodita</i>)</b>	END	Species Protection and Habitat Regulation	Vascular Plants at Risk in Ontario (2018)	Virginia mallow grows in riparian habitats that are flooded in most years. It benefits from this moist environment and is usually found in sunny or partly shaded areas with sandy soils. Loose sandy or rocky soils of scoured riversides and floodplains, and disturbed areas along roadsides and railroad banks are its preferred habitats (MNRF Species Profile Online 2014).	<b>Moderate</b> - Suitable habitat (i.e. stream) occurs along Grassy Brook and roadside adjacent to Parcel D	3 Season Botanical Inventory	No observations	Low - Species not observed. Impact area limited to Cultural Meadow vegetation.
<b>White wood aster (<i>Eurybia divaricata</i>)</b>	THR	Species and General Habitat Protection	Vascular Plants at Risk in Ontario (2018)	Generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails (MNRF Guelph - Hamilton List, 2013).	Low - No suitable habitat (i.e. dry forest) occur within the Study Area	3 Season Botanical Inventory	No observations	Low - Low likelihood of occurrence in Study Area. Impact area limited to Cultural Meadow vegetation.

# APPENDIX

## **D** SIGNIFICANT WILDLIFE HABITAT SCREENING



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

## Table of Contents

1.1 Seasonal Concentration Areas of Animals.....	1
1. Waterfowl Stopover and Staging Areas (Terrestrial).....	1
2. Waterfowl Stopover and Staging Areas (Aquatic).....	2
3. Shorebird Migratory Stopover Area.....	3
4. Raptor Wintering Area.....	3
5. Bat Hibernacula.....	4
6. Bat Maternity Colonies.....	4
7. Turtle Wintering Areas.....	5
8. Reptile Hibernaculum.....	5
9. Colonially -Nesting Bird Breeding Habitat (Bank and Cliff).....	6
10. Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs).....	6
11. Colonially -Nesting Bird Breeding Habitat (Ground).....	7
12. Migratory Butterfly Stopover Areas.....	7
13. Landbird Migratory Stopover Areas.....	8
14. Deer Winter Congregation Areas.....	8
1.2 Rare Vegetation Communities or Specialized Habitat for Wildlife.....	9
1.2.1 Rare Vegetation Communities.....	9
15. Cliffs and Talus Slopes.....	9
16. Sand Barren.....	9
17. Alvar.....	10
18. Old Growth Forest.....	10
19. Savannah.....	11
20. Tallgrass Prairie.....	11
21. Other Rare Vegetation Communities.....	11
1.2.2 Specialized Habitat for Wildlife.....	12
22. Waterfowl Nesting Area.....	12
23. Bald Eagle and Osprey Nesting, Foraging and Perching Habitat.....	13
24. Woodland Raptor Nesting Habitat.....	13
25. Turtle Nesting Areas.....	14
26. Seeps and Springs.....	14
27. Amphibian Breeding Habitat (Woodland).....	15
28. Amphibian Breeding Habitat (Wetlands).....	15
29. Woodland Area-Sensitive Bird Breeding Habitat.....	16
1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species).....	17
30. Marsh Breeding Bird Habitat.....	17
31. Open Country Bird Breeding Habitat.....	17
32. Shrub/Early Successional Bird Breeding Habitat.....	18
33. Terrestrial Crayfish.....	18
34. Special Concern and Rare Wildlife Species.....	19
1.4 Animal Movement Corridors.....	20
35. Amphibian Movement Corridors.....	20
1.5 Exceptions for EcoRegion 7E.....	<b>Error! Bookmark not defined.</b>

## Criteria For Significant Wildlife Habitat in Ecoregion 7E

### 1.1 SEASONAL CONCENTRATION AREAS OF ANIMALS

Seasonal concentration areas are areas where wildlife species occur annually in aggregations at certain times of the year. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of seasonal concentration areas include deer wintering areas, breeding bird colonies and hibernation sites for reptiles, amphibians and some mammals

cxlviii. Table 1.1 outlines what wildlife habitats and defining criteria that are considered for seasonal concentration areas within Ecoregion 7E.

**Table 1.1 Seasonal Concentration Areas of Animals.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>1. Waterfowl Stopover and Staging Areas (Terrestrial)</b></p> <p><b>Rationale:</b> Habitat important to migrating waterfowl.</p>	<p>American Black Duck American Wigeon Blue-winged Teal Gadwall Green-winged Teal Northern Pintail Northern Shoveler Tundra Swan</p>	<p>CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. - Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.</p>	<p>Fields with sheet water during Spring (mid-March to May).</p> <ul style="list-style-type: none"> <li>Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</li> <li>Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available <sup>cxlviii</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence.</li> <li>Reports and other information available from Conservation Authorities</li> <li>Sites documented through waterfowl planning processes (eg. EHJV implementation plan)</li> <li>Field Naturalist Clubs</li> <li>Ducks Unlimited Canada</li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area</li> </ul>	<p>Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”<sup>ccxi</sup></p> <ul style="list-style-type: none"> <li>Any mixed species aggregations of 100<sup>ⓔ</sup> or more individuals required.</li> <li>The flooded field ecosite habitat plus a 100-300m radius, dependant on local site conditions and adjacent land use is the significant wildlife habitat .</li> <li>Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates).</li> <li>SWH MISTIndex #7 provides development effects and mitigation measures.</li> </ul>	<p>Cultural meadow is present within the study area however, presence of flooding not observed during field visit in April and is not expected.</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>2. Waterfowl Stopover and Staging Areas (Aquatic)</b></p> <p><b>Rationale:</b> Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p>	<p>American Black Duck American Wigeon Black Scoter Blue-winged Teal Brant Bufflehead Cackling Goose Canada Goose Canvasback Common Goldeneye Common Merganser Gadwall Greater Scaup Green-winged Teal Hooded Merganser Lesser Scaup Long-tailed Duck Northern Pintail Northern Shoveler Red-breasted Merganser Redhead Ring-necked duck Ruddy Duck Ruddy Duck Snow Goose Surf Scoter White-winged Scoter</p>	<p>MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7</p>	<ul style="list-style-type: none"> <li>Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.</li> <li>These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Environment Canada</li> <li>Naturalist clubs often are aware of staging/stopover areas.</li> <li>OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging.</li> <li>Sites documented through waterfowl planning processes (eg. EHJV implementation plan)</li> <li>Ducks Unlimited projects</li> <li>Element occurrence specification by Nature Serve: <a href="http://www.natureserve.org">http://www.natureserve.org</a></li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area</li> </ul>	<p>Studies carried out and verified presence of:</p> <ul style="list-style-type: none"> <li>Aggregations of 100<sup>ⓔ</sup> or more of listed species for 7 days<sup>ⓔ</sup>, results in &gt; 700 waterfowl use days.</li> <li>Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH<sup>cxlix</sup></li> <li>The combined area of the ELC ecosites and a 100m radius area is the SWH<sup>cxlviii</sup></li> <li>Wetland area and shorelines associated with sites identified within the SWHTG<sup>cxlviii</sup> Appendix Kcxlx are significant wildlife habitat.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”<sup>ccxi</sup></li> <li>Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).</li> <li>SWH MIST<sup>cxlix</sup> Index #7 provides development effects and mitigation measures.</li> </ul>	<p>No Candidate habitat is present. Although a swamp is adjacent, it is heavily treed and not suitable for substantive migratory stopover use.</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>3. Shorebird Migratory Stopover Area</b></p> <p><b>Rationale:</b> High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	<p>American Golden-Plover Baird's Sandpiper Black-bellied Plover Dunlin Greater Yellowlegs Hudsonian Godwit Least Sandpiper Lesser Yellowlegs Marbled Godwit Pectoral Sandpiper Purple Sandpiper Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Semipalmated Plover Semipalmated Sandpiper Short-billed Dowitcher Solitary Sandpiper Spotted Sandpiper Stilt Sandpiper White-rumped Sandpiper</p>	<p>BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5</p>	<ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</li> <li>Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October.</li> <li>Sewage treatment ponds and storm water ponds do not qualify as a SWH.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Western hemisphere shorebird reserve network.</li> <li>Canadian Wildlife Service (CWS) Ontario Shorebird Survey.</li> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist clubs</li> <li>NHIC Shorebird Migratory Concentration Area</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 3 or more of listed species and &gt; 1000<sup>1</sup> shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period)</li> <li>Whimbrel stop briefly (&lt;24hrs) during spring migration, any site with &gt;100<sup>1</sup> Whimbrel used for 3 years or more is significant.</li> <li>The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area <sup>cxlviii</sup></li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #8 provides development effects and mitigation measures.</li> </ul>	<p>No shoreline habitat is present.</p> <p><b>SWH is not present</b></p>
<p><b>4. Raptor Wintering Area</b></p> <p><b>Rationale:</b> Sites used by multiple species, a high number of individuals and used annually are most significant</p>	<p>American Kestrel Northern Harrier Red-tailed Hawk Rough-legged Hawk Snowy Owl</p> <p><b>Special Concern:</b> Bald Eagle Short-eared Owl</p>	<p><u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC.  Upland: CUM; CUT; CUS; CUW.  <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p>	<ul style="list-style-type: none"> <li>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</li> <li>Raptor wintering (hawk/owl)sites need to be &gt; 20 ha <sup>cxlviii, cxlix</sup> with a combination of forest and upland. <sup>xvi, xvii, xviii, xix, xx, xxi</sup></li> <li>Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15ha) with adjacent woodlands <sup>cxlix</sup></li> <li>Field area of the habitat is to be wind swept with limited snow depth or accumulation.</li> <li>Eagle sites have open water and large trees and snags available for roosting<sup>cxlix</sup></li> </ul> <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> <li>OMNR Ecologist or Biologist</li> <li>Naturalist clubs</li> <li>Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area</li> <li>Data from Bird Studies Canada</li> <li>Results of Christmas Bird Counts</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> <li>One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species<sup>ⓔ</sup></li> <li>To be significant a site must be used regularly (3 in 5 years)<sup>cxlix</sup> for a minimum of 20 days by the above number of birds<sup>ⓔ</sup>.</li> <li>The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area<sup>ⓔ</sup></li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #10 and #11 provides development effects and mitigation measures.</li> </ul>	<p>Adjacent natural areas along Grassy Brook, and Welland River in the general vicinity of the Study Area may function as raptor wintering habitat, however, Parcel D is too small an area and disturbed to function as part of raptor wintering habitat.</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>5. Bat Hibernacula</b></p> <p><b>Rationale:</b> Bat hibernacula are rare habitats in all Ontario landscapes.</p>	<p>Big Brown Bat Tri-coloured Bat</p>	<p>Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> <li>Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.</li> <li>Active mine sites should not be considered as SWH</li> <li>The locations of bat hibernacula are relatively poorly known.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>Natural Heritage Information Centre (NHIC) Bat Hibernaculum</li> <li>Ministry of Northern Development and Mines for location of mine shafts.</li> <li>Clubs that explore caves (eg. Sierra Club)</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>All sites with confirmed hibernating bats are SWH <sup>Ⓔ</sup>.</li> <li>The area includes 200m radius around the entrance of the hibernaculum , , <sup>Ⓔ</sup> for most development types and 1000m for wind farms<sup>ccv</sup>.</li> <li>Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”<sup>ccv</sup>.</li> <li>SWH MIST<sup>cxlix</sup> Index #1 provides development effects and mitigation measures.</li> </ul>	<p>No bat hibernacula are present.</p> <p><b>SWH is not present</b></p>
<p><b>6. Bat Maternity Colonies</b></p> <p><b>Rationale:</b> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>	<p>Big Brown Bat Silver-haired Bat</p>	<p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM</p>	<ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings<sup>xxii, xxv, xxvi, xxvii, xxxi</sup> (buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario<sup>xxii</sup>.</li> <li>Maternity colonies located in Mature deciduous or mixed forest stands<sup>ccix, ccx</sup> with &gt;10/ha large diameter (&gt;25cm dbh) wildlife trees<sup>ccvii</sup></li> <li>Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3<sup>ccxiv</sup> or class 1 or 2<sup>ccxii</sup>.</li> <li>Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred<sup>ccx</sup></li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>Maternity Colonies with confirmed use by; &gt;10 Big Brown Bats<sup>Ⓔ</sup> &gt;5 Adult Female Silver-haired Bats<sup>Ⓔ</sup></li> <li>The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies<sup>Ⓔ</sup>.</li> <li>Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”<sup>ccv</sup>.</li> <li>SWH MIST<sup>cxlix</sup> Index #12 provides development effects and mitigation measures.</li> </ul>	<p>No Candidate habitat is present. Although there is an adjacent swamp community present, the trees are healthy and young lacking cavity features and not suitable for maternity colonies.</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>7. Turtle Wintering Areas</b></p> <p><b>Rationale:</b> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Midland Painted Turtle</p> <p><b>Special Concern:</b> Northern Map Turtle Snapping Turtle</p>	<p>Snapping and Midland Painted turtles, ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle - Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<p>For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.</p> <ul style="list-style-type: none"> <li>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. cix, cx, cxi, cxviii</li> <li>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>EIS studies carried out by Conservation Authorities.</li> <li>Field Naturalists Clubs</li> <li>OMNRF ecologist or biologist</li> <li>Natural Heritage Information Centre (NHIC)</li> </ul>	<ul style="list-style-type: none"> <li>Presence of 5 over-wintering Midland Painted Turtles is significant<sup>1</sup>.</li> <li>One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant<sup>1</sup>.</li> <li>The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.</li> <li>Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) <sup>cvi</sup>. Congregation of turtles is more common where wintering areas are limited and therefore significant <sup>cix, cx, cxi, cxii</sup>.</li> <li>SWH MIST<sup>cxlix</sup> Index #28 provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>	<p>No suitable habitat is present. Grassy Brook Creek north of the study area is not deep enough. Adjacent stormwater ponds are not considered SWH.</p> <p><b>SWH is not present</b></p>
<p><b>8. Reptile Hibernaculum</b></p> <p><b>Rationale:</b> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p><b>Snakes:</b> Eastern Gartersnake Northern Brownsnake Northern Red-bellied Snake Northern Ring-necked Snake Northern Watersnake Smooth Green Snake</p> <p><b>Special Concern:</b> Eastern Ribbonsnake Milksnake</p>	<p>For all snakes, habitat may be found in any ecosite in central Ontario other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p>	<p>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line<sup>xliv, l, li, lii, cxii</sup>. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.</p> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells).</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalist Clubs</li> <li>University herpetologists</li> <li>Natural Heritage Information Centre (NHIC)</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp.</li> <li>Congregations of a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct)<sup>1</sup>.</li> <li><b>Note:</b> If there are Special Concern Species present, then site is SWH</li> <li><b>Note:</b> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population [i.e. strong hibernation site fidelity.]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The the feature in which the hibernacula is located plus a 30 m buffer is the SWH<sup>1</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #13 provides development effects and mitigation measures for snake hibernacula.</li> </ul>	<p>No suitable habitat was observed during site visits.</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>9. Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</b></p> <p><b>Rationale:</b> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario<sup>cxix</sup>.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> <li>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Reports and other information available from Conservation Authorities.</li> <li>Ontario Breeding Bird Atlas</li> <li>Bird Studies Canada; NatureCounts <a href="http://www.birdscanada.org/birdmon/">http://www.birdscanada.org/birdmon/</a></li> <li>Field Naturalist Clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.</li> <li>A colony identified as SWH will include a 50m radius habitat area from the peripheral nests</li> <li>Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #4 provides development effects and mitigation measures</li> </ul>	<p>No suitable bank or cliff habitat is present.</p> <p><b>SWH is not present</b></p>
<p><b>10. Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</b></p> <p><b>Rationale:</b> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Black-crowned Night-Heron Great Blue Heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<ul style="list-style-type: none"> <li>Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</li> <li>Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas<sup>ccv</sup>, colonial nest records.</li> <li>Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF).</li> <li>Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony</li> <li>Aerial photographs can help identify large heronries.</li> <li>Reports and other information available from Conservation Authorities.</li> <li>MNRF District Offices.</li> <li>Field Naturalist Clubs</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 2<sup>i</sup> or more active nests of Great Blue Heron.</li> <li>The edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island &lt;15.0ha with a colony is the SWH<sup>cc, ccvii</sup></li> <li>Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells</li> <li>SWH MIST<sup>cxlix</sup> Index #5 provides development effects and mitigation measures.</li> </ul>	<p>No Candidate habitat is present. Although there is an adjacent swamp community present, the trees are young and not suitable for colonial nesting, and no indicator species were recorded in the Study Area during field surveys.</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>11. Colonially -Nesting Bird Breeding Habitat (Ground)</b></p> <p><b>Rationale:</b> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Brewer's Blackbird Caspian Tern Common Tern Great Black-backed Gull Herring Gull Little Gull Ring-billed Gull</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1-6; MAS1-3; CUM CUT CUS</p>	<ul style="list-style-type: none"> <li>Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</li> <li>Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas, rare/colonial species records.</li> <li>Canadian Wildlife Service.</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area</li> <li>MNRF District Offices.</li> <li>Field Naturalist Clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of &gt; 25 active nests for Herring Gulls or Ring-billed Gulls, &gt;5 active nests for Common Tern or &gt;2 active nests for Caspian Tern<sup>Ⓔ</sup>.</li> <li>Presence of 5 or more pairs for Brewer's Blackbird<sup>Ⓔ</sup>.</li> <li>Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant <sup>Ⓔ</sup>.</li> <li>The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island &lt;3.0ha with a colony is the SWH <sup>cc,cvii</sup></li> <li>Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>cccxi</sup></li> <li>SWH MIST<sup>cxix</sup> Index #6 provides development effects and mitigation measures.</li> </ul>	<p>No suitable habitat is present.</p> <p><b>SWH is not present</b></p>
<p><b>12. Migratory Butterfly Stopover Areas</b></p> <p><b>Rationale:</b> Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady Red Admiral</p> <p><b>Special Concern:</b> Monarch</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each landclass:</p> <p><u>Field:</u> CUM      CUT CUS</p> <p><u>Forest:</u> FOC      FOD FOM      CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<p>A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Erie or Lake Ontario <sup>cxlix</sup>.</p> <ul style="list-style-type: none"> <li>The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south <sup>xxxii, xxxiii, xxxiv, xxxv, xxxvi</sup>.</li> <li>The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat <sup>cxlviii, cxlix</sup>.</li> <li>Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes <sup>xxxvii, xxxviii, xxxix, xl, xli</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNRF District Offices</li> <li>Natural Heritage Information Centre (NHIC)</li> <li>Agriculture Canada in Ottawa may have list of butterfly experts.</li> <li>Field Naturalist Clubs</li> <li>Toronto Entomologists Association</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct) <sup>xliii</sup>. MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day <sup>xxxvii</sup>, significant variation can occur between years and multiple years of sampling should occur <sup>xl, xlii</sup>.</li> <li>MUD of &gt;5000 or &gt;3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.<sup>l</sup></li> <li>SWHDSS <sup>cxlix</sup> Index #16 provides development effects and mitigation measures.</li> </ul>	<p>No Candidate habitat is present (not within 5km of Lake Ontario).</p> <p><b>SWH is not present</b></p>

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>13. Landbird Migratory Stopover Areas</b></p> <p><b>Rationale:</b> Sites with a high diversity of species as well as high numbers are most significant.</p>	<p>All migratory songbirds.</p> <p>Canadian Wildlife Service Ontario website: <a href="http://www.on.ec.gc.ca/wildlife_e.htm">http://www.on.ec.gc.ca/wildlife_e.htm</a></p> <p>All migrant raptors species:</p> <p>Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<ul style="list-style-type: none"> <li>Woodlots &gt;5 ha<sup>1</sup> in size and within 5 km<sup>iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv</sup> of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat.</li> <li>If multiple woodlands are located along the shoreline those Woodlands &lt;2km from Lake Erie and Lake Ontario are more significant<sup>cxlix</sup>. Sites have a variety of habitats; forest, grassland and wetland complexes<sup>cxlix</sup>.</li> <li>The largest sites are more significant<sup>cxlix</sup></li> <li>Woodlots and forest fragments are important habitats to migrating birds<sup>cxlviii</sup>, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH<sup>cxlviii</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and field naturalist club</li> <li>Ontario Important Bird Areas (IBA) Program</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Use of the woodlot by &gt;200 birds/day and with &gt;35 spp with at least 10 bird spp. recorded on at least 5 different survey dates<sup>1</sup>. This abundance and diversity of migrant bird species is considered above average and significant.</li> <li>Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #9 provides development effects and mitigation measures.</li> </ul>	<p>No Candidate habitat is present (not within 5km of Lake Ontario).</p> <p><b>SWH is not present</b></p>
<p><b>14. Deer Winter Congregation Areas</b></p> <p><b>Rationale:</b> Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions<sup>cxlviii</sup>.</p>	<p>White-tailed Deer</p>	<p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> <li>Woodlots &gt;100 ha in size or if large woodlots are rare in a planning area woodlots &gt;50ha<sup>ⓔ</sup></li> <li>Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands.</li> <li>Large woodlots &gt; 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha.</li> <li>Woodlots with high densities of deer due to artificial feeding are not significant<sup>ⓔ</sup>.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNRF District Offices.</li> <li>LIO/NRVIS</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF<sup>cxlviii</sup>.</li> <li>Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF<sup>1</sup>.</li> <li>Studies should be completed during winter (Jan/Feb) when &gt;20cm of snow is on the ground using aerial survey techniques<sup>ccxiv</sup>, ground or road surveys, or a pellet count deer density survey<sup>ccxv</sup>.</li> <li>SWH MIST<sup>cxlix</sup> Index #2 provides development effects and mitigation measures.</li> </ul>	<p>No deer yarding areas have been identified by MNRF in the Study Area.</p> <p><b>SWH is not present</b></p>

## 1.2 RARE VEGETATION COMMUNITIES OR SPECIALIZED HABITAT FOR WILDLIFE

### 1.2.1 Rare Vegetation Communities

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

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

The setting of criteria for significant wildlife habitat (SWH) has incorporated this ranking system into its process of determining rare vegetation communities and as such, a rare vegetation community is defined to include areas that contain a provincially rare vegetation community and/or areas that contain a vegetation community that is rare within the planning area. SWH Table 1.2.1 contains a listing of rare vegetation communities that are considered SWH for the planning area contained within Ecoregion 7E.

**Table 1.2.1 Rare Vegetation Communities.**

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p><b>15. Cliffs and Talus Slopes</b></p> <p><b>Rationale:</b> Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p>Any ELC Ecosite within Community Series:</p> <p>TAO CLO TAS CLS TAT CLT</p>	<p>A Cliff is vertical to near vertical bedrock &gt;3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris</p>	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>The Niagara Escarpment Commission has detailed information on location of these habitats.</li> <li>OMNRF Districts</li> <li>Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>Field Naturalist Clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Cliffs or Talus Slopes lxxviii</li> <li>SWH MIST<sup>cxlix</sup> Index #21 provides development effects and mitigation measures.</li> </ul>	<p>No cliffs or talus slopes present.</p> <p><b>SWH is not present</b></p>
<p><b>16. Sand Barren</b></p> <p><b>Rationale:</b> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites: SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p>	<p>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.</p>	<p>A sand barren area &gt;0.5ha in size<sup>ⓔ</sup>.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>Field Naturalist Clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Sand Barrens lxxviii</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics)<sup>1</sup>.</li> <li>SWH MIST<sup>cxlix</sup> Index #20 provides development effects and mitigation measures.</li> </ul>	<p>No sand barrens are present.</p> <p><b>SWH is not present</b></p>

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p><b>17. Alvar</b></p> <p><b>Rationale:</b> Alvars are extremely rare habitats in Ecos-region 7E.</p>	<p>ALO1 ALS1 ALT1 CUM2 CUS2 CUT2-1 CUW2 FOC1 FOC2</p> <p><b>Five Alvar Indicator Species:</b></p> <p>1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum</p> <p>These indicator species are very specific to Alvars within Ecoregion 7E<sup>exlix</sup></p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover<sup>lxxviii</sup>.</p>	<p>An Alvar site &gt; 0.5 ha in size<sup>lxxv</sup>. Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie.<sup>cxix</sup></p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Alvars of Ontario (2000), Federation of Ontario Naturalists .</li> <li>Ontario Nature – Conserving Great Lakes Alvars.</li> <li>Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>OMNRF Staff.</li> <li>Field Naturalist Clubs.</li> <li>Conservation Authorities.</li> </ul>	<ul style="list-style-type: none"> <li>Field studies that identify four of the five<sup>Ⓢ</sup> Alvar Indicator Species<sup>lxxv, cxlix</sup> at a Candidate Alvar site is Significant.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics).</li> <li>The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses<sup>lxxv</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #17 provides development effects and mitigation measures.</li> </ul>	<p>No alvar is present.</p> <p><b>SWH is not present</b></p>
<p><b>18. Old Growth Forest</b></p> <p><b>Rationale:</b> Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.</p>	<p>Forest Community Series: FOC FOD FOM SWC SWD SWM</p>	<p>Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.</p>	<p>Woodland area is &gt;0.5ha.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF Forest Resource Inventory mapping</li> <li>OMNRF Districts.</li> <li>Field Naturalist Clubs</li> <li>Conservation Authorities</li> <li>Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations.</li> <li>Municipal forestry departments</li> </ul>	<p>Field Studies will determine:</p> <ul style="list-style-type: none"> <li>If dominant trees species of the ecosite are &gt;140 years old, then stand is Significant Wildlife Habitat<sup>cxlviii</sup></li> <li>The stand will have experienced no recognizable forestry activities<sup>cxlviii</sup> (cut stumps will not be present)</li> <li>The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH.</li> <li>Determine ELC vegetation types for the forest area containing the old growth characteristics<sup>lxxviii</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #23 provides development effects and mitigation measures.</li> </ul>	<p>The SWD community adjacent to the site is &lt;100 years old (based on historical aerial photos), and does not display old growth characteristics.</p> <p><b>SWH is not present</b></p>

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p><b>19. Savannah</b></p> <p><b>Rationale:</b> Savannahs are extremely rare habitats in Ontario.</p>	<p>CUS2 TPS1 TPS2 TPW1 TPW2</p>	<p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p> <p>In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).</p>	<p>No minimum size to site <sup>Í</sup>. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.</p> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) has location data available on their website.</li> <li>OMNRF Districts.</li> <li>Field Naturalists Clubs.</li> <li>Conservation Authorities.</li> </ul>	<p>Field studies confirm one or more of the Savannah indicator species listed in <sup>lxxv</sup> Appendix N should be present <sup>Í</sup>. Note: Savannah plant spp. list from Ecoregion 7E should be used<sup>exlviii</sup>.</p> <ul style="list-style-type: none"> <li>Area of the ELC Ecosite is the SWH.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics).</li> <li>SWH MIST<sup>exlix</sup> Index #18 provides development effects and mitigation measures.</li> </ul>	<p>No Savannah is present.</p> <p><b>SWH is not present</b></p>
<p><b>20. Tallgrass Prairie</b></p> <p><b>Rationale:</b> Tallgrass Prairies are extremely rare habitats in Ontario.</p>	<p>TPO1 TPO2</p>	<p>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has &lt; 25% tree cover.</p> <p>In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).</p>	<p>No minimum size to site <sup>Í</sup>. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.</p> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>Field Naturalists Clubs.</li> <li>Conservation Authorities.</li> </ul>	<p>Field studies confirm one or more of the Prairie indicator species listed in <sup>lxxv</sup> Appendix N should be present <sup>Í</sup>. Note: Prairie plant spp. list from Ecoregion 7E should be used<sup>exlviii</sup>.</p> <ul style="list-style-type: none"> <li>Area of the ELC Ecosite is the SWH.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics).</li> <li>SWHDSS<sup>exlix</sup> Index #19 provides development effects and mitigation measures.</li> </ul>	<p>No Tallgrass Prairie is present.</p> <p><b>SWH is not present</b></p>
<p><b>21. Other Rare Vegetation Communities</b></p> <p><b>Rationale:</b> Plant communities that often contain rare species which depend on the habitat for survival.</p>	<p>Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG<sup>exlviii</sup>. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.</p>	<p>Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.</p>	<p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M <sup>exlviii</sup></p> <p>The OMNRF/NHIC will have up to date listing for rare vegetation communities.</p> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>OMNRF Districts.</li> <li>Field Naturalists Clubs.</li> <li>Conservation Authorities.</li> </ul>	<p>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG<sup>exlviii</sup></p> <ul style="list-style-type: none"> <li>Area of the ELC Vegetation Type polygon is the SWH.</li> <li>SWH MIST <sup>exlix</sup> Index #37 provides development effects and mitigation measures.</li> </ul>	<p>No Provincially Rare S1, S2 and S3 vegetation communities are present.</p> <p><b>SWH is not present</b></p>

### 1.2.2 Specialized Habitat for Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size<sup>cxlviii</sup>. Specialized habitat for wildlife is a community or diversity-based category, therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area. The largest and least fragmented habitats within a planning area will support the most significant populations of wildlife. The specialized habitats for wildlife that are considered as SWH are outlined in Table 1.2.2.

**Table 1.2.2 Specialized Habitats of Wildlife considered SWH.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>22. Waterfowl Nesting Area</b></p> <p><b>Rationale:</b> Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	<p>American Black Duck Blue-winged Teal Gadwall Green-winged Teal Hooded Merganser Mallard Northern Pintail Northern Shoveler Wood Duck</p>	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWT1 SWT2</p> <p><b>Note: includes adjacency to Provincially Significant Wetlands</b></p>	<p>A waterfowl nesting area extends 120 m<sup>cxlix</sup> from a wetland (&gt; 0.5 ha) or a wetland (&gt;0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (&lt;0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur<sup>cxlix</sup>.</p> <ul style="list-style-type: none"> <li>Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.</li> <li>Wood Ducks and Hooded Mergansers utilize large diameter trees (&gt;40cm dbh) in woodlands for cavity nest sites.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ducks Unlimited staff may know the locations of particularly productive nesting sites.</li> <li>OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirmed:</p> <ul style="list-style-type: none"> <li>Presence of 3 or more nesting pairs for listed species excluding Mallards<sup>I</sup>, or;</li> <li>Presence of 10 or more nesting pairs for listed species including Mallards<sup>I</sup>.</li> <li>Any active nesting site of an American Black Duck is considered significant.</li> <li>Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”<sup>ccxi</sup></li> <li>A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m<sup>cxlviii</sup> from the wetland and will provide enough habitat for waterfowl to successfully nest.</li> <li>SWH MIST<sup>cxlix</sup> Index #25 provides development effects and mitigation measures.</li> </ul>	<p>The upland CUM community within Parcel D is adjacent to the Grassy Brook PSW / SWD2 community, and may function as waterfowl nesting area. However, no waterfowl species were observed during breeding bird surveys or any other site visits in 2022.</p> <p><b>Candidate SWH is present.</b></p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>23. Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</b></p> <p><b>Rationale:</b> Nest sites are fairly uncommon in Eco-region 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	<p>Osprey</p> <p><b>Special Concern:</b> Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <p>Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree’s canopy.</p> <p>Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario.</li> <li>MNR values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat.</li> <li>Nature Counts, Ontario Nest Records Scheme data.</li> <li>OMNRF District.</li> <li>Check the Ontario Breeding Bird Atlas<sup>ccv</sup> or Rare Breeding Birds in Ontario for species documented</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalists clubs</li> </ul>	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> <li>One or more active Osprey or Bald Eagle nests in an area<sup>cxlviii</sup>.</li> <li>Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH.</li> <li>For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH<sup>ccvii</sup>, maintaining undisturbed shorelines with large trees within this area is important<sup>cxlviii</sup>.</li> <li>For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH.<sup>cvi, ccvii</sup> Area of the habitat from 400-800m is dependant on site lines from the nest to the development and inclusion of perching and foraging habitat<sup>cvi</sup></li> <li>To be significant a site must be used annually. When found inactive, the site must be known to be inactive for ≥3 years or suspected of not being used for &gt;5 years before being considered not significant.<sup>ccvii</sup></li> <li>Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”<sup>ccxi</sup></li> <li>SWH MIST<sup>cxlix</sup> Index #26 provides development effects and mitigation measures</li> </ul>	<p>Although a swamp community is adjacent to Parcel D, these are young trees and not suitable for Bald Eagle and Osprey nesting.</p> <p><b>SWH is not present</b></p>
<p><b>24. Woodland Raptor Nesting Habitat</b></p> <p><b>Rationale:</b> Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.</p>	<p>Barred Owl Broad-winged Hawk Cooper’s Hawk Northern Goshawk Red-shouldered Hawk Sharp-shinned Hawk</p>	<p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC, SWM, SWD and CUP3</p>	<p>All natural or conifer plantation woodland/forest stands &gt;30ha with &gt;4ha of interior habitat<sup>lxxxviii, lxxxix, xc, xci, xciii, xciv, xcvi, cxxxiii</sup>. Interior habitat determined with a 200m buffer<sup>cxlviii</sup></p> <ul style="list-style-type: none"> <li>Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.</li> <li>In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented.</li> <li>Check data from Bird Studies Canada.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more active nests from species list is considered significant<sup>cxlviii</sup>.</li> <li>Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha of suitable habitat is the SWH<sup>ccvii</sup>. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest)</li> <li>Barred Owl – A 200m radius around the nest is the SWH<sup>ccvii</sup>.</li> <li>Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is the SWH<sup>ccvii</sup>.</li> <li>Sharp-Shinned Hawk – A 50m radius around the nest is the SWH<sup>ccvii</sup>.</li> <li>Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.</li> <li>SWH MIST<sup>cxlix</sup> Index #27 provides development effects and mitigation measures.</li> </ul>	<p>No suitable habitat is present. Raptors were not observed.</p> <p><b>SWH is not present</b></p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>25. Turtle Nesting Areas</b></p> <p><b>Rationale:</b> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p>Midland Painted Turtle</p> <p><b>Special Concern Species:</b> Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (&lt;100m) <sup>cxlviii</sup> or within the following ELC Ecosites: BOO1 FEO1 MAS1 MAS2 MAS3 SAF1 SAM1 SAS1</p>	<ul style="list-style-type: none"> <li>Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.</li> <li>For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.</li> <li>Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels).</li> <li>Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.</li> <li>Natural Heritage Information Centre (NHIC)</li> <li>Field Naturalist Clubs</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 5 or more nesting Midland Painted Turtles<sup>I</sup></li> <li>One or more Northern Map Turtle or Snapping Turtle nesting is a SWH<sup>I</sup>.</li> <li>The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. <sup>cxlviii</sup></li> <li>Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat.</li> <li>Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.</li> <li>SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.</li> </ul>	<p>No suitable habitat is present. Although turtles are likely present in the Grassy Brook watercourse and wetland, no exposed sand / gravel for nesting was observed within the Study Area.</p> <p><b>SWH is not present</b></p>
<p><b>26. Seeps and Springs</b></p> <p><b>Rationale:</b> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Ruffed Grouse Salamander spp. Spruce Grouse White-tailed Deer Wild Turkey</p>	<p>Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.</p>	<p>Any forested area (with &lt;25% meadow/field/pasture) within the headwaters of a stream or river system <sup>cxvii, cxlix</sup>.</p> <ul style="list-style-type: none"> <li>Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species <sup>cxix, cxx, cxxi, cxxii, cxiii, cxiv</sup>.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>Topographical Map.</li> <li>Thermography.</li> <li>Hydrological surveys conducted by Conservation Authorities and MOE.</li> <li>Field Naturalists Clubs and landowners.</li> <li>Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of a site with 2 or more<sup>I</sup> seeps/springs should be considered SWH.</li> <li>The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat .</li> <li>SWH MIST Index #30 provides development effects and mitigation measures</li> </ul>	<p>No seeps or springs observed.</p> <p><b>SWH is not present</b></p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>27. Amphibian Breeding Habitat (Woodland)</b></p> <p><b>Rationale:</b> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations</p>	<p>Blue-spotted Salamander Eastern Newt Gray Treefrog Spotted Salamander Spring Peeper Western Chorus Frog Wood Frog</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOD FOM SWC SWD SWM</p> <p>Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians</p>	<ul style="list-style-type: none"> <li>Presence of a wetland, pond or woodland pool (including vernal pools) &gt;500m<sup>2</sup> (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size)., , , , , Some small wetlands may not be mapped and may be important breeding pools for amphibians.</li> <li>Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat<sup>cxlviii</sup></li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records</li> <li>Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property.</li> <li>OMNRF Districts and wetland evaluations</li> <li>Field Naturalist clubs</li> <li>Canadian Wildlife Service Amphibian Road Call Survey</li> <li>Ontario Vernal Pool Association: <a href="http://www.ontariovernalpools.org">http://www.ontariovernalpools.org</a></li> </ul>	<p>Studies confirm;</p> <ul style="list-style-type: none"> <li>Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3<sup>ⓔ</sup>.</li> <li>A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands.</li> <li>The habitat is the wetland area plus a 230m radius of woodland area <sup>lxiii, lxxv, lxxvi, lxxvii, lxxviii, lxxix, lxxx, lxxxi</sup>. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.</li> <li>SWH MIST <sup>cxlix</sup> Index #14 provides development effects and mitigation measures.</li> </ul>	<p>Potential habitat is present in the SWD community and the Grassy Brook PSW, however targeted surveys did not detect any amphibians calling within Parcel D or the study area (south of Grassy Brook). Western Chorus Frogs were recorded as Call Level code 1 north of the study area, therefore the SWD community adjacent to the parcel is not ruled out as potential breeding habitat.</p> <p><b>Candidate SWH is present</b></p>
<p><b>28. Amphibian Breeding Habitat (Wetlands)</b></p> <p><b>Rationale:</b> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>American Toad Blue-spotted Salamander Bullfrog Eastern Newt Four-toed Salamander Gray Treefrog Green Frog Mink Frog Northern Leopard Frog Pickerel Frog Spotted Salamander Western Chorus Frog</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>Typically these wetland ecosites will be isolated (&gt;120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands</p>	<ul style="list-style-type: none"> <li>Wetlands&gt;500m<sup>2</sup> (about 25m diameter) ,supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats .</li> <li>Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators.</li> <li>Bullfrogs require permanent water bodies with abundant emergent vegetation.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases)</li> <li>Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count.</li> <li>OMNRF Districts and wetland evaluations.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3<sup>ⓔ</sup>. or; Wetland with confirmed breeding Bullfrogs are significant.</li> <li>The ELC ecosite wetland area and the shoreline are the SWH.</li> <li>A combination of observational study and call count surveys <sup>cxviii</sup> will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.</li> <li>If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</li> <li>SWH MIST <sup>cxlix</sup> Index #15 provides development effects and mitigation measures.</li> </ul>	<p>Swamp wetland habitat is present in the Study Area adjacent to Parcel D, however targeted surveys did not detect any amphibians calling within Parcel D or the study area (south of Grassy Brook). Western Chorus Frogs were recorded as Call Level code 1 north of the study area, therefore the SWD community adjacent to the parcel is not ruled out as potential breeding habitat. One Bullfrog was recorded within an adjacent SWM pond however man-made features are not SWH.</p> <p><b>Candidate SWH is present</b></p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>29. Woodland Area-Sensitive Bird Breeding Habitat</b></p> <p>Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p>	<p>Blackburnian Warbler  Black-throated Blue Warbler  Black-throated Green Warbler  Blue-headed Vireo  Northern Parula  Ovenbird  Pileated Woodpecker  Red-breasted Nuthatch  Veery  Scarlet Tanager  Winter Wren  Yellow-bellied Sapsucker</p> <p><b>Special Concern:</b>  Canada Warbler  Cerulean Warbler</p>	<p>All Ecosites associated with these ELC Community Series;  FOC  FOM  FOD  SWC  SWM  SWD</p>	<ul style="list-style-type: none"> <li>Habitats where interior forest breeding birds are breeding, typically large mature (&gt;60 yrs old) forest stands or woodlots &gt;30 ha. <sup>cv, cxxxii, cxxxiii, cxxxiv, cxxxv, cxxxvi, cxxxvii, cxxxviii, cxxxix, cxi, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvi, clvii, clviii, clix</sup></li> <li>Interior forest habitat is at least 200 m from forest edge habitat. <sup>clxiv</sup></li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Local birder clubs.</li> <li>Canadian Wildlife Service (CWS) for the location of forest bird monitoring.</li> <li>Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. <sup>Ⓔ</sup></li> <li>Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. <sup>Ⓔ</sup></li> <li>Conduct field investigations in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” <sup>ccxi</sup></li> <li>SWH MIST <sup>cxlix</sup> Index #34 provides development effects and mitigation measures.</li> </ul>	<p>No interior forest habitat is present. No criteria species were recorded within the swamp north of the study area.</p> <p><b>SWH is not present</b></p>

### 1.3 HABITAT FOR SPECIES OF CONSERVATION CONCERN (NOT INCLUDING ENDANGERED OR THREATENED SPECIES)

Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act 2007. Table 1.3 assists with the identification of SWH for Species of Conservation Concern.

**Table 1.3. Habitats of Species of Conservation Concern considered SWH.**

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>30. Marsh Breeding Bird Habitat</b></p> <p><b>Rationale:</b> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>American Bittern American Coot Common Loon Common Moorhen Green Heron Marsh Wren Pied-billed Grebe Sandhill Crane Sedge Wren Sora Trumpeter Swan Virginia Rail</p> <p><b>Special Concern:</b> Black Tern Yellow Rail</p>	<p>BOO1 FEO1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAF1 SAM1 SAS1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none"> <li>Nesting occurs in wetlands.</li> <li>All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present<sup>cxiv</sup>.</li> <li>For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF District and wetland evaluations.</li> <li>Field Naturalist clubs</li> <li>Natural Heritage Information Centre (NHIC) Records.</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Ontario Breeding Bird Atlas.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species<sup>ⓔ</sup>.</li> <li>Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH<sup>ⓔ</sup>.</li> <li>Area of the ELC ecosite is the SWH.</li> <li>Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”</li> <li>SWH MIST Index #35 provides development effects and mitigation measures</li> </ul>	<p>No open marsh habitat is present. No Green Heron has been reported or observed within the Grassy Brook PSW.</p> <p><b>SWH is not present</b></p>
<p><b>31. Open Country Bird Breeding Habitat</b></p> <p><b>Rationale:</b> This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.</p>	<p>Grasshopper Sparrow Northern Harrier Savannah Sparrow Upland Sandpiper Vesper Sparrow</p> <p><b>Special Concern:</b> Short-eared Owl</p>	<p>CUM1 CUM2</p>	<p>Large grassland areas (includes natural and cultural fields and meadows) &gt;30 ha<sup>clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix</sup>. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years)<sup>Í</sup>.</p> <p>Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.</p> <p>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs.</li> <li>Ontario Breeding Bird Atlas</li> <li>EIS Reports and other information available from Conservation Authorities.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 2 or more of the listed species.<sup>Í</sup></li> <li>A field with 1 or more breeding Short-eared Owls is to be considered SWH.</li> <li>The area of SWH is the contiguous ELC ecosite field areas.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”<sup>ccxi</sup></li> <li>SWH MIST<sup>clix</sup> Index #32 provides development effects and mitigation measures</li> </ul>	<p>No Candidate habitat is present (no CUM units &gt;30 ha).</p> <p><b>SWH is not present</b></p>

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>32. Shrub/Early Successional Bird Breeding Habitat</b></p> <p><b>Rationale:</b> This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records <sup>cxix</sup>.</p>	<p><b>Indicator Spp:</b> Brown Thrasher Clay-coloured Sparrow</p> <p><b>Common Spp.:</b> Black-billed Cuckoo Eastern Towhee Field Sparrow Willow Flycatcher</p> <p>Golden-winged Warbler</p> <p><b>Special Concern:</b> Yellow-breasted Chat</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<p>Large field areas succeeding to shrub and thicket habitats &gt;10ha <sup>clxiv</sup> in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years) <sup>l</sup>.</p> <p>Shrub thicket habitats (&gt;10 ha) are most likely to support and sustain a diversity of these species <sup>clxxiii</sup>.</p> <p>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Agricultural land classification maps, Ministry of Agriculture.</li> <li>• Local bird clubs.</li> <li>• Ontario Breeding Bird Atlas</li> <li>• Reports and other information available from Conservation Authorities.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>• Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species.</li> <li>• A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat.</li> <li>• The area of the SWH is the contiguous ELC ecosite field/thicket area.</li> <li>• Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories</li> <li>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” <sup>ccxi</sup></li> <li>• SWH MIST <sup>cxlix</sup> Index #33 provides development effects and mitigation measures.</li> </ul>	<p>No Candidate habitat is present (thicket &gt;10ha).</p> <p><b>SWH is not present</b></p>
<p><b>33. Terrestrial Crayfish</b></p> <p><b>Rationale:</b> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. <sup>ccii</sup></p>	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crawfish or Meadow Crayfish; (<i>Cambarus Diogenes</i>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> <li>• Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water.</li> <li>• Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Information sources from “Conservation Status of Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF March 1998</li> </ul>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>• Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or terrestrial sites <sup>cci</sup></li> <li>• Area of ELC Ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.</li> <li>• Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult</li> <li>• SWH MIST <sup>cxlix</sup> Index #36 provides development effects and mitigation measures.</li> </ul>	<p>Potential in SWD and MAM communities within the Grassy Brook wetland. No targeted surveys completed, and no chimneys observed during field surveys.</p> <p><b>Candidate SWH is present</b></p>

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>34. Special Concern and Rare Wildlife Species</b></p> <p><b>Rationale:</b> These species are quite rare or have experienced significant population declines in Ontario.</p>	<p>All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<p>When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <sup>lxviii</sup></p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data.</li> <li>NHIC Website “Get Information” : <a href="http://nhic.mnr.gov.on.ca">http://nhic.mnr.gov.on.ca</a></li> <li>Ontario Breeding Bird Atlas</li> <li>Expert advice should be sought as many of the rare spp. have little information available about their requirements.</li> </ul>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable.</li> <li>The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs to be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.</li> <li>SWH MIST <sup>cxlix</sup> Index #37 provides development effects and mitigation measures.</li> </ul>	<p>No Special Concern or rare species were recorded in the Study Area during field surveys. However, the SAR habitat assessment indicated moderate potential for one Special Concern species to occur within Parcel D:</p> <ul style="list-style-type: none"> <li>Monarch (<i>Danaus plexippus</i>)</li> </ul> <p>Seven Special Concern species have moderate to high potential to occur within the larger Study Area, within Grassy Brook and the Grassy Brook PSW and SWD community:</p> <ul style="list-style-type: none"> <li>Eastern Musk Turtle (<i>Sternotherus odoratus</i>)</li> <li>Northern Map Turtle (<i>Graptemys geographica</i>)</li> <li>Snapping Turtle (<i>Chelydra serpentina</i>)</li> <li>Grass Pickerel (<i>Esox americanus</i>)</li> <li>Spotted Sucker (<i>Minytrema melanops</i>)</li> <li>Green Dragon (<i>Arisaema dracontium</i>)</li> <li>Schumard Oak (<i>Quercus shumardii</i>)</li> </ul> <p><b>Candidate SWH is present</b></p>

## 1.4 ANIMAL MOVEMENT CORRIDORS

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

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

### Animal Movement Corridors should only be identified as SWH where:

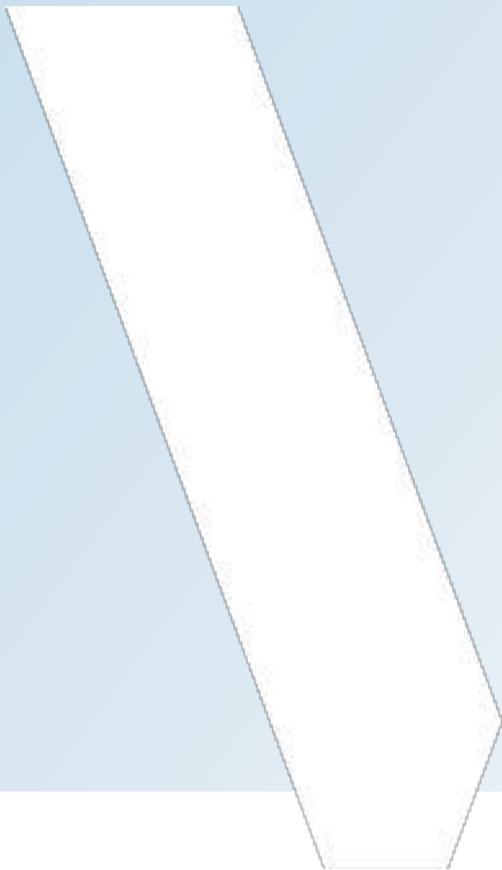
Where a Confirmed or Candidate SWH has been identified by MNR or the planning authority based on documented evidence of a habitat identified within these Criterion Schedules or the Significant Wildlife Habitat Technical Guide. The identified wildlife habitats Table 1.4.1 will have distinct passageways or rely on well defined natural features for movements between habitats required by the species to complete its life cycle.

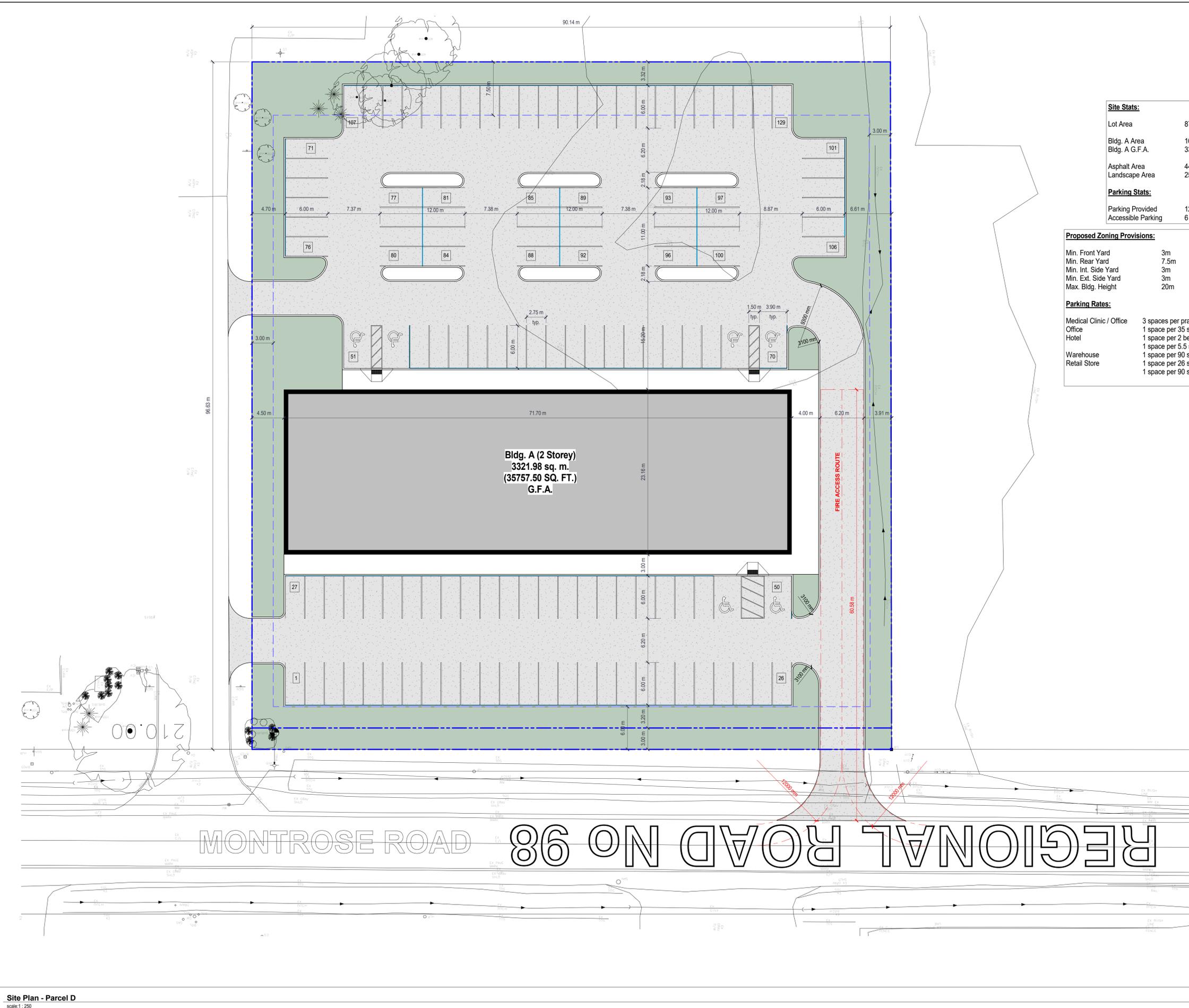
**Table 1.4.1 Animal Movement Corridors**

Habitat	SPECIES	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Eco-sites	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>35. Amphibian Movement Corridors</b></p> <p><b>Rationale:</b> Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	<p>American Toad Blue-spotted Salamander Bullfrog Eastern Newt Four-toed Salamander Gray Treefrog Green Frog Mink Frog Northern Leopard Frog Pickeral Frog Spotted Salamander Western Chorus Frog</p>	<p>Corridors may be found in all ecosites associated with water.</p> <ul style="list-style-type: none"> <li>Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1</li> </ul>	<p>Movement corridors between breeding habitat and summer habitat <sup>clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi</sup>.</p> <p>Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (<b>Amphibian Breeding Habitat –Wetland</b>) of this Schedule 1.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNR District Office.</li> <li>Natural Heritage Information Centre (NHIC).</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalist Clubs.</li> </ul>	<ul style="list-style-type: none"> <li>Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites.</li> <li>Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant <sup>cxlix</sup></li> <li>Corridors should have at least 15m of vegetation on both sides of waterway <sup>cxlix</sup> or be up to 200m wide <sup>cxlix</sup> of woodland habitat and with gaps &lt;20m <sup>cxlix</sup>.</li> <li>Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat <sup>cxlix</sup>.</li> <li>SWH MIST <sup>cxlix</sup> Index #40 provides development effects and mitigation measures</li> </ul>	<p>Movement Corridor not identified by planning authorities. If amphibian breeding SWH is confirmed in the Grassy Brook PSW, movement corridors may be identified within the Grassy Brook valley.</p> <p><b>Candidate SWH is present.</b></p>

# APPENDIX

## E SITE PLAN





**Site Stats:**

Lot Area	8718.79 sq. m.	
Bldg. A Area	1660.99 sq. m.	19.05%
Bldg. A G.F.A.	3321.98 sq. m.	
Asphalt Area	4474.77 sq. m.	51.32%
Landscape Area	2583.03 sq. m.	29.63%

**Parking Stats:**

Parking Provided	129 Spaces
Accessible Parking	6 of 129 (4% min.)

**Proposed Zoning Provisions:**

Min. Front Yard	3m
Min. Rear Yard	7.5m
Min. Int. Side Yard	3m
Min. Ext. Side Yard	3m
Max. Bldg. Height	20m

**Parking Rates:**

Medical Clinic / Office	3 spaces per practitioner
Office	1 space per 35 sq. m. GFA
Hotel	1 space per 2 bedrooms, plus 1 space per 5.5 sq. m. floor area used as place of assembly
Warehouse	1 space per 90 sq. m. G.F.A.
Retail Store	1 space per 26 sq. m. G.L.F.A., plus 1 space per 90 sq. m. storage

**Bldg. A (2 Storey)**  
 3321.98 sq. m.  
 (35757.50 SQ. FT.)  
 G.F.A.

MONTROSE ROAD  
 REGIONAL ROAD NO 98

Site Plan - Parcel D  
 scale: 1 : 250

Parcel D  
**ES FOX**  
 9127 Montrose Road, Niagara Falls Ontario

**Overall Site Plan + Zoning Info**

Drawn By: J.V.  
 Date: 1/16/2023 10:54:08 AM  
 Scale: 1 : 250  
 Project No: 21-007  
 Checked: ER

Drawings are not valid for construction until sealed and signed by the architect.  
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**RAMONDO + ASSOCIATES ARCHITECTS INC.**  
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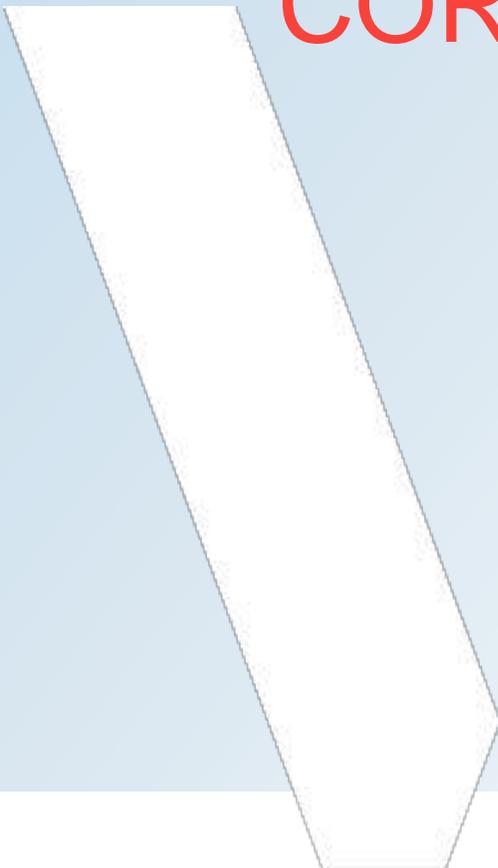
**A1-000**

# APPENDIX

# F

AGENCY

CORRESPONDENCE



## LeCraw, Robin

---

**From:** Boudens, Adam <Adam.Boudens@niagararegion.ca>  
**Sent:** Friday, February 4, 2022 3:10 PM  
**To:** LeCraw, Robin  
**Cc:** Enoae, Jenny; Jessica Abrahamse; Shanks, Amy  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Robin,

Regional environmental planning staff offer no objection to your proposed approach regarding bat surveys. The only thing that I'll note is that in addition to addressing ESA requirements, please also ensure that you assess bat habitat in accordance with the Significant Wildlife Habitat Criteria Schedule for Ecoregion 7E.

Please do not hesitate to reach out with any questions as you undertake your field work program.

Have a nice weekend,  
Adam

### Adam Boudens

Senior Environmental Planner/Ecologist

Planning and Development Services, Niagara Region  
1815 Sir Isaac Brock Way, P.O. Box 1042  
Thorold, ON L2V 4T7  
Phone: **905-980-6000 ext. 3770** Toll-free: 1-800-263-7215  
[Adam.Boudens@niagararegion.ca](mailto:Adam.Boudens@niagararegion.ca)

---

**From:** LeCraw, Robin <Robin.LeCraw@wsp.com>  
**Sent:** Friday, February 4, 2022 1:51 PM  
**To:** Boudens, Adam <Adam.Boudens@niagararegion.ca>  
**Cc:** Enoae, Jenny <Jenny.Enoae@wsp.com>; Jessica Abrahamse <jabrahamse@npca.ca>  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

**CAUTION EXTERNAL EMAIL:** This email originated from outside of the Niagara Region email system. Use caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

Hi Adam,

Thank you as well for your input on the EIS Scope for the Montrose Road parcels! Similar to my last email to Jessica, since WSP has now been awarded this work, I would like to clarify some of the required scope items.

You specified Bat Surveys. I would like to clarify – our standard approach is to assess mature trees or structures in the study area for potential bat habitat and if suitable habitat is identified, MECP will be consulted to determine either mitigation to be incorporated into design, or the need for acoustic or visual exit surveys. Can you please confirm if this is in line with your expectations for the EIS?

I think the rest of your requirements are clear and have been addressed in our proposed scope.

Thank you for your help at this stage of the project!

Robin

**Robin LeCraw**, *she/her*  
Project Ecologist, Ph.D

T+ 1 519-907-1788



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**From:** Boudens, Adam <[Adam.Boudens@niagararegion.ca](mailto:Adam.Boudens@niagararegion.ca)>  
**Sent:** Friday, November 26, 2021 9:07 AM  
**To:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>; Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>; Shanks, Amy <[Amy.Shanks@niagararegion.ca](mailto:Amy.Shanks@niagararegion.ca)>; [jhannah@niagarafalls.ca](mailto:jhannah@niagarafalls.ca)  
**Cc:** Stettler, Alex <[Alexander.Stettler@wsp.com](mailto:Alexander.Stettler@wsp.com)>; Adam Aldworth <[aaldworth@npca.ca](mailto:aaldworth@npca.ca)>  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Robin,

Apologies for the delayed response. In addition to the field surveys requested by the NPCA, Regional staff request the following:

1. Ecological Land Classification (ELC) mapping;
2. Significant Woodland boundary staking, completed with Regional Staff;
3. Bat surveys;
4. Reptile surveys (incidental unless there is evidence of potential hibernacula);
5. Species at Risk (SAR) and Significant Wildlife Habitat (SWH) screening. Additional field surveys may be required depending on the results.

Please let me know if you have any questions.

Thanks,  
Adam

**Adam Boudens**  
Senior Environmental Planner/Ecologist

Planning and Development Services, Niagara Region  
1815 Sir Isaac Brock Way, P.O. Box 1042  
Thorold, ON L2V 4T7  
Phone: **905-980-6000 ext. 3770** Toll-free: 1-800-263-7215  
[Adam.Boudens@niagararegion.ca](mailto:Adam.Boudens@niagararegion.ca)

## LeCraw, Robin

---

**From:** Jessica Abrahamse <jabrahamse@npca.ca>  
**Sent:** Wednesday, February 23, 2022 5:11 PM  
**To:** LeCraw, Robin  
**Cc:** Enoae, Jenny; Halwa, Leon; Adam Aldworth  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Robin,

NPCA staff's understanding had been that field verification of whether or not watercourses were present within the parcels was going to be completed and wanted to ensure that if watercourses were verified that they were characterized. If absence of watercourses has been verified in the field then no watercourse assessment is required.

Provided the presence of turtles within Grassy Brook and the Welland River is assumed and mitigated appropriately the requirement for turtle surveys can be waived.

It may be helpful for the study team to know that the following studies have been completed in the area:

- Grand Niagara Secondary Plan EIS
- Montrose Road EA Natural Heritage Evaluation

With Best Regards,

**Jessica Abrahamse M.E.S.**  
**Watershed Planner**

250 Thorold Road West, 3<sup>rd</sup> Floor  
Welland, On  
L3C 3W2  
(905) 788-3135 Ext. 235  
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[www.npca.ca](http://www.npca.ca)  
[NPCA Mapping Tool](#)

Thank you for your email. Due to the COVID-19 pandemic, the NPCA has taken measures to protect staff and public while providing continuity of services. NPCA enforcement, permitting and planning functions are continuing to operate, however there may be delays in receiving responses to inquiries or complaints due to staff restrictions and remote work locations. Updates with regards to NPCA operations and activities can be found on our website at [www.npca.ca/our-voice](http://www.npca.ca/our-voice), the NPCA Facebook page at <https://www.facebook.com/NPCAOntario> and on Twitter at [https://twitter.com/NPCA\\_Ontario](https://twitter.com/NPCA_Ontario).

For more information on Permits, Planning and Forestry please go to the Permits & Planning webpage at <https://npca.ca/administration/permits>.

For mapping on features regulated by the NPCA please go to our GIS webpage at <https://gis-npca-camaps.opendata.arcgis.com/> and utilize our Watershed Explorer App or GIS viewer.

To send NPCA staff information regarding a potential violation of Ontario Regulation 155/06 please go to the NPCA Enforcement and Compliance webpage at <https://npca.ca/administration/enforcement-compliance>.

---

**From:** LeCraw, Robin <Robin.LeCraw@wsp.com>  
**Sent:** February-23-22 1:47 PM  
**To:** Jessica Abrahamse <jabrahamse@npca.ca>  
**Cc:** Enoae, Jenny <Jenny.Enoae@wsp.com>; Halwa, Leon <Leon.Halwa@wsp.com>; Adam Aldworth

<aaldworth@npca.ca>

**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Jessica,

Were you able to discuss the scope requirements below with the planning ecologist?

Thank you!

Robin

**Robin LeCraw**, *she/her*

Project Ecologist, Ph.D

T+ 1 519-907-1788



---

**From:** LeCraw, Robin

**Sent:** Friday, February 4, 2022 3:38 PM

**To:** Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>

**Cc:** Enoae, Jenny <[Jenny.Enoae@wsp.com](mailto:Jenny.Enoae@wsp.com)>; Halwa, Leon <[Leon.Halwa@wsp.com](mailto:Leon.Halwa@wsp.com)>; Boudens, Adam <[adam.boudens@niagararegion.ca](mailto:adam.boudens@niagararegion.ca)>; Adam Aldworth <[aaldworth@npca.ca](mailto:aaldworth@npca.ca)>

**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Thanks Jessica,

I just spoke with our wildlife specialist as well, and I'll add her response regarding Turtle Surveys:

Blanding's Turtle (Threatened) won't be present in a large watercourse feature such as this (unless there was a large backwater marsh area, but I don't see anything like that in the aerial imagery). So I don't think 5 turtle basking surveys to determine BLTU presence are necessary. And Softshell (Endangered) is not known to occur along Welland/Niagara Rivers. Several Special Concern turtles should be assumed as present (Snapping, Northern Map and Midland Painted Turtle, with some limited potential for Musk Turtle) and mitigation will be necessary (exclusion fencing, no in-water works during hibernation). So turtle surveys aren't really necessary (should assume present and potential for encounters). If they are required, I would suggest 1 early spring emergence survey at the river and watercourse.

Thanks for your input. Have a great weekend!

Robin

**Robin LeCraw**, *she/her*

Project Ecologist, Ph.D

T+ 1 519-907-1788

---

**From:** Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>  
**Sent:** Friday, February 4, 2022 3:19 PM  
**To:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>  
**Cc:** Enoae, Jenny <[Jenny.Enoae@wsp.com](mailto:Jenny.Enoae@wsp.com)>; Halwa, Leon <[Leon.Halwa@wsp.com](mailto:Leon.Halwa@wsp.com)>; Boudens, Adam <[adam.boudens@niagararegion.ca](mailto:adam.boudens@niagararegion.ca)>; Adam Aldworth <[aaldworth@npca.ca](mailto:aaldworth@npca.ca)>  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Robin,

I will work on getting you some answers next week once our Planning Ecologist is back from his time off.

With Best Regards,

**Jessica Abrahamse M.E.S.**  
**Watershed Planner**

250 Thorold Road West, 3<sup>rd</sup> Floor  
Welland, On  
L3C 3W2  
(905) 788-3135 Ext. 235  
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[NPCA Mapping Tool](#)

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---

**From:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>  
**Sent:** February-04-22 1:42 PM  
**To:** Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>  
**Cc:** Enoae, Jenny <[Jenny.Enoae@wsp.com](mailto:Jenny.Enoae@wsp.com)>; Halwa, Leon <[Leon.Halwa@wsp.com](mailto:Leon.Halwa@wsp.com)>; Boudens, Adam <[adam.boudens@niagararegion.ca](mailto:adam.boudens@niagararegion.ca)>  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Jessica,

I hope you're doing well!

Thank you again for providing your input on the EIS scope for this project for development of 4 parcels on Montrose Road back in November. WSP has now been awarded this work, and we would like to refine our scope for the project. I would like to ask for some clarification on a couple of your points below.

1. Detailed assessment of the hydrological and ecological function of watercourses present within the study area.
  - a. None of the parcels contain watercourses, but Parcel A abuts the shoreline of the Welland River, and Parcel D just encroaches on the top of slops allowance of Grassy Brook. Are you referring to using the OSAP protocol to characterize Grassy Brook? An assessment of ecological habitat at the shoreline of the Welland River will be included.
  - b. What type of hydrological assessment of the watercourses are you expecting? Given your statement that a feature-based water balance is not required at this time, we are unclear what type of hydrological data you would like to see. Similarly, are you referring to an assessment of the hydrological function for the Welland River? Or would this primarily apply to Grassy Brook and any potential HDFs?
2. For turtle surveys, presumably you're looking for early spring emergence / basking surveys?

Thank you for your help!

Robin

**Robin LeCraw**, *she/her*  
Project Ecologist, Ph.D

T+ 1 519-907-1788



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**From:** Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>  
**Sent:** Wednesday, November 24, 2021 1:56 PM  
**To:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>; Shanks, Amy <[Amy.Shanks@niagararegion.ca](mailto:Amy.Shanks@niagararegion.ca)>; [jhannah@niagarafalls.ca](mailto:jhannah@niagarafalls.ca)  
**Cc:** Stettler, Alex <[Alexander.Stettler@wsp.com](mailto:Alexander.Stettler@wsp.com)>; Boudens, Adam <[adam.boudens@niagararegion.ca](mailto:adam.boudens@niagararegion.ca)>; Adam Aldworth <[aaldworth@npca.ca](mailto:aaldworth@npca.ca)>  
**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Robin,

Please find the below information with regards to scoping the EIS for 9127 & 9515 Montrose Rd. NF.

The following field surveys are requested to be included within the EIS:

1. Detailed assessment of the hydrological and ecological function of watercourses present within the study area – NPCA staff request that these surveys be completed utilizing either the Ontario Stream Assessment Protocol or Headwater Drainage Feature Assessment Guidelines as appropriate for the feature.
2. Calling anuran surveys
3. Breeding bird surveys
4. Turtle surveys
5. 3 season vegetation inventory and ELC mapping – please include soil samples for each ELC polygon
6. Wetland boundary staking

As the wetlands within the study area are associated with floodplains and larger watercourses a water balance is not required at this time. However, as development concepts are developed the need for a water balance will be re-evaluated and may be required in order to demonstrate no negative impact to hydrological function of the wetlands within the study area.

With Best Regards,

**Jessica Abrahamse M.E.S.**  
**Watershed Planner**

250 Thorold Road West, 3<sup>rd</sup> Floor  
Welland, On  
L3C 3W2  
(905) 788-3135 Ext. 235  
[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)  
[www.npca.ca](http://www.npca.ca)  
[NPCA Mapping Tool](#)

Thank you for your email. Due to the COVID-19 pandemic, the NPCA has taken measures to protect staff and public while providing continuity of services. NPCA enforcement, permitting and planning functions are continuing to operate, however there may be delays in receiving responses to inquiries or complaints due to staff restrictions and remote work locations. Updates with regards to NPCA operations and activities can be found on our website at [www.npca.ca/our-voice](http://www.npca.ca/our-voice), the NPCA Facebook page at <https://www.facebook.com/NPCAOntario> and on Twitter at [https://twitter.com/NPCA\\_Ontario](https://twitter.com/NPCA_Ontario).

For more information on Permits, Planning and Forestry please go to the Permits & Planning webpage at <https://npca.ca/administration/permits>.

For mapping on features regulated by the NPCA please go to our GIS webpage at <https://gis-npca-camaps.opendata.arcgis.com/> and utilize our Watershed Explorer App or GIS viewer.

To send NPCA staff information regarding a potential violation of Ontario Regulation 155/06 please go to the NPCA Enforcement and Compliance webpage at <https://npca.ca/administration/enforcement-compliance>.

---

**From:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>

**Sent:** November-12-21 10:24 AM

**To:** Shanks, Amy <[Amy.Shanks@niagararegion.ca](mailto:Amy.Shanks@niagararegion.ca)>; [jhannah@niagarafalls.ca](mailto:jhannah@niagarafalls.ca)

**Cc:** Stettler, Alex <[Alexander.Stettler@wsp.com](mailto:Alexander.Stettler@wsp.com)>; Boudens, Adam <[adam.boudens@niagararegion.ca](mailto:adam.boudens@niagararegion.ca)>; Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>

**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Thanks very much Amy!

Adam and Jessica, I would appreciate any input you can provide to my request in the email chain below.

Thank you  
Robin

**Robin LeCraw**  
(She/her)  
Project Ecologist



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**From:** Shanks, Amy <[Amy.Shanks@niagararegion.ca](mailto:Amy.Shanks@niagararegion.ca)>

**Sent:** Friday, November 12, 2021 10:18 AM

**To:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>; [jhannah@niagarafalls.ca](mailto:jhannah@niagarafalls.ca)

**Cc:** Stettler, Alex <[Alexander.Stettler@wsp.com](mailto:Alexander.Stettler@wsp.com)>; Boudens, Adam <[adam.boudens@niagararegion.ca](mailto:adam.boudens@niagararegion.ca)>; Jessica Abrahamse <[jabrahamse@npca.ca](mailto:jabrahamse@npca.ca)>

**Subject:** RE: 9127 and 9515 Montrose Road EIS Terms of Reference

Hi Robin,

I've forwarded your request to Adam Boudens, Senior Environmental Planner at Niagara Region, for a response.

You should also connect with the Niagara Peninsula Conservation Authority (NPCA), as they will also be involved in scoping the EIS. I've copied Jessica Abrahamse, who is the NPCA's planner assigned to Niagara Falls, so that she is aware of your request.

Kind regards,  
Amy

**Amy Shanks, M.Pl.**

Development Planner

Planning and Development Services, Niagara Region

1815 Sir Isaac Brock Way, Thorold L2V 4T7

Phone: 905-980-6000 ext. 3264

Toll-free: 1-800-263-7215

[www.niagararegion.ca](http://www.niagararegion.ca)

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**From:** LeCraw, Robin <[Robin.LeCraw@wsp.com](mailto:Robin.LeCraw@wsp.com)>

**Sent:** Friday, November 12, 2021 10:12 AM

**To:** [jhannah@niagarafalls.ca](mailto:jhannah@niagarafalls.ca); Shanks, Amy <[Amy.Shanks@niagararegion.ca](mailto:Amy.Shanks@niagararegion.ca)>

**Cc:** Stettler, Alex <[Alexander.Stettler@wsp.com](mailto:Alexander.Stettler@wsp.com)>

**Subject:** 9127 and 9515 Montrose Road EIS Terms of Reference

**CAUTION EXTERNAL EMAIL:** This email originated from outside of the Niagara Region email system. Use caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

Julie and Amy,

WSP has been invited by E.S. Fox Limited to submit a fee proposal to complete the scoped Environmental Impact Studies required for development applications at 9127 and 9515 Montrose Road in Niagara Falls. Your names were provided by the client following the pre-consultation on October 7<sup>th</sup>, as resources to clarify scope requirements for the EIS. I am reaching out to invite some specific input on what the requirements for the EIS would be from the City and Region, so we can include those specifics in our scoping and in the eventual Terms of Reference.

We know that an EIS will be required for parcels A and D, and confirmation of a watercourse on Parcel C. From aerial imagery and watercourse mapping, it appears that the watercourse in the area of Parcel C may have been a tributary but is now ditched and piped, likely not evident as a watercourse within the development parcel.

Parcel A – The PSW and Regulated Area by NPCA extends into the parcel.

Parcel D - The parcel is within the setbacks for the adjacent PSW and top of slope associated with Grassy Creek.

If WSP is selected to carry out the EIS, a detailed Terms of Reference would be developed based on a review of all background information, and the Niagara Region Environmental Impact Study Guidelines (2018). The purpose of this email is to start the process to ensure key requirements are captured in the scope to provide a likely scope an accurate fee for the client's consideration.

Can you please provide input into the following scoping questions:

- What types of surveys would be required regarding setbacks to the PSW?
- Does the City / Region require multi-season surveys?
- Can you identify targeted ecological surveys likely to be required such as vegetation inventory, targeted wildlife, or feature boundary staking?
- Will the City or Region require a site visit to review delineation of boundaries of wetland, top of slope, hazard areas etc.?
- Can you identify other disciplines that will be required for input to the EIS either incorporated into the EIS or as standalone studies / reports, such as water balance studies or geotechnical erosion hazard?

If WSP is selected, the input you provide would be incorporated into a draft Terms of Reference to be submitted to the City, Region, and NPCA for review and approval prior to work commencing.

Thank you very much for any input you can provide at this time.

Robin

**Robin LeCraw, Ph.D.**

(She/her)

Project Ecologist

Ecology & Environmental Impact Assessment (EIA)



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