

**SCOPED ENVIRONMENTAL IMPACT STATEMENT
ORT ROAD PROPERTY – CITY OF NIAGARA FALLS**

Prepared for:

Mr. Craig Corey

Prepared by:

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Mr. Craig Corey to prepare an Environmental Impact Statement to assess potential ecological impacts associated with the construction of a proposed residence and possible severance of the property located north and east of the northern terminus of Ort Road, in the City of Niagara Falls. This EIS is an update to the EIS prepared in 2017 and has been prepared to assess potential impacts these works may have on natural heritage features located on and adjacent to the Subject Property. A summary of our assessment is included below.

1.1 Description of the Subject Property

The Subject Property for this project is located at north and east of the northern terminus of Ort Road, in the City of Niagara Falls (see Figure 1). This parcel has not been assigned a municipal address, however the property is legally described as Part Lot 19, Concession 3, in the former Township of Willoughby. The property is rectangular in shape and measures approximately 1.0 hectares (2.47 acres) in size. No buildings or structures are located on the property and land use in the vicinity of the property is primarily residential and estate residential. The Subject Property is bound to the north by Lyon's Creek, and as a result, the property generally slopes gradually from south to north.

From our review of background information, natural heritage features identified on the property include a portion of a Significant Woodland and a portion of the Lyon's Creek Provincially Significant Wetland Complex (hereafter referred to as the PSW). Although not located on the property, Lyon's Creek is located immediately to the north of the Subject Property. Due to the presence of these features, the portion of the property associated with the PSW has been designated as Environmental Protection Area (EPA) within the Niagara Region and Niagara Falls Official Plans, while the Significant Woodland on the property has been designated as Environmental Conservation Area (ECA) within these plans. NPCA regulated features on the property include the PSW and floodplain associated with Lyon's Creek. The extent of mapped natural heritage features on the Subject Property is illustrated in Figure 2.

1.2 Description of Proposed Development

The proposed development for this project consists of the construction of a new residence and amenities on the property, as well as the severance of the property to create an additional residential lot, and to subsequently construct a new residence on that lot as well. It is understood that access to the property will be provided by a driveway constructed from Ort Road to the potential building envelope on the property. It is further understood that the proposed residence will be serviced by municipal water and sanitary sewer to be extended from Lyons Parkway.



Figure 1

Location of Subject Property



**Environmental Impact Statement
Ort Road Property**

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Legend

- Subject Property
- Significant Woodland
- Provincially Significant Wetland

Figure 2
Extent of Mapped Natural Heritage
Features on the Subject Property

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Ort Road Property

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Prepared by: **COLVILLE** 
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2.0 Environmental Policy

2.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) was issued under Section 3 of the Planning Act, and came into effect on May 22, 1996. The PPS was updated in 1997 and most recently in 2020. It applies to all applications submitted after March 1, 2005 and states that decisions affecting planning matters “shall be consistent with” policy statements issued under the Act. This EIS has been prepared in compliance with Part V, Policy 2.1 of the PPS, which deals specifically with the long term protection and management of natural heritage features and areas.

Natural heritage features and areas are defined in the PPS as those which are important for their environmental and social values as a legacy of the natural landscapes of an area and include: significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat and significant areas of natural and scientific interest.

Section 2.1.2 of the PPS states that the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

The PPS goes on to state that, unless it can be demonstrated that there will be no negative impacts on the natural heritage features or their ecological functions, development and site alteration is not permitted in or adjacent to:

- ♦ significant habitat of endangered species and threatened species;
- ♦ significant wetlands in Ecoregions 5E, 6E and 7E;
- ♦ significant woodlands and valleylands south and east of the Canadian Shield;
- ♦ significant wildlife habitat; and
- ♦ significant fish habitat.

In addition to the above, development and site alteration shall not be permitted in fish habitat or in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

Section 2.1.8 of the PPS states that development and site alteration shall also not be permitted on adjacent lands to the natural heritage features identified above unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

2.2 Niagara Region Official Plan

Regional Policy Plan Amendment 187 was approved by the Ontario Municipal Board on April 16, 2008, and is an update to Section 7 (Environmental Policy) of the Regional Niagara Policy Plan (2007). This amendment conforms to Section 2.1 of the PPS.

Among other important environmental considerations, the policies address the Region’s natural vegetation and wildlife, water resources, landforms, geology and soils, and core natural heritage features such as woodlands, wetlands and fish habitat. Those natural areas considered to be of

provincial importance, as identified in the PPS, are identified in the Region’s Core Natural Heritage System. The following components are identified in the Region’s Core Natural Heritage System:

- a) Core Natural Areas which are classified as Environmental Protection Areas (EPA) and Environmental Conservation Areas (ECA);
- b) Potential Natural Heritage Corridors connecting the Core Natural Areas;
- c) Greenbelt Natural Heritage and Water Resources System; and
- d) Fish Habitat (this includes key hydrologic features).

Environmental Protection Areas (EPA) include: provincially significant wetlands; provincially significant Life Science ANSIs; and significant habitat of endangered and threatened species.

Environmental Conservation Areas (ECA) include: significant woodlands; significant wildlife habitat; significant habitat of species of concern; regionally significant Life Science ANSIs; other evaluated wetlands; significant valleylands; savannahs and tallgrass prairies; alvars; and publicly owned conservation lands.

The Core Natural Heritage Map which accompanies Amendment 187 illustrates the Region’s Core Natural Heritage System, which includes EPA, ECA, potential corridor, fish habitat and the Greenbelt Natural Heritage and Water Resources System. This map indicates that a portion of the Subject Property has been identified as EPA due to the presence of the PSW and an ECA due to the Significant Woodland.

For development applications that are proposed within or adjacent to the Core Natural Heritage System, the Regional policies require that an EIS be completed. Table 1, which was modified from Amendment 187, shows under what circumstances an EIS is required. For example, because there is a Significant Woodland and fish habitat identified on the Subject Lands, an EIS is required.

Table 1: EIS Requirements for lands adjacent to Core Natural Areas

Core Natural Heritage System Component	Adjacent Lands Where an EIS Shall Be Required for Development Applications
Environmental Protection Area	
➤ Provincially Significant Life Science ANSI	All lands within 50 metres.
➤ Significant Habitat of Threatened and Endangered Species	All lands within 50 metres.
➤ Provincially Significant Wetland	All lands within 120 metres.

Table 1: EIS Requirements for lands adjacent to Core Natural Areas

Core Natural Heritage System Component	Adjacent Lands Where an EIS Shall Be Required for Development Applications
<p>Environmental Conservation Area</p> <ul style="list-style-type: none"> ➤ Regionally Significant Life Science ANSIs ➤ Significant Woodlands ➤ Significant Wildlife Habitat ➤ Significant Habitat for Species of Concern ➤ Other evaluated wetlands ➤ Significant Valleylands ➤ Savannahs, Tallgrass Prairies and alvars ➤ Publicly owned conservation lands 	<p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p> <p>All lands within 50 metres.</p>
<p>Fish Habitat</p>	<p>All lands within 30 metres of the top of bank.</p>

Source: Table 7-1 of the Regional Policy Plan Amendment

2.3 City of Niagara Falls Official Plan

The City of Niagara Falls Plan has been drafted to complement the Regional Official Plan and contains policies specific to the management of natural heritage systems. It is the intent of the Official Plan to designate lands that contribute to the natural environment of the city, either due to their ecological significance, the areas being significant due to the natural heritage features present and/or having inherent physical hazards. The purpose of identifying these lands is not only to acknowledge the need to maintain and protect these areas, but also to control development in and around these areas due to their susceptibility.

Schedule A-1 of the City of Niagara Falls Official Plan illustrates that portions of the property have been designated Environmental Protection Area (EPA) and Environmental Conservation Area (ECA).

Environmental Protection Areas (EPA) include: 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.

Environmental Conservation Areas (ECA) include: significant woodlands, significant valley lands, 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.

Section 11.1.17 of the official plan states that an EIS shall be required as part of a complete application under the Planning Act for site alteration or development on lands:

- a) within or adjacent to an Environment Protection Area or Environmental Conservation Area as shown on Schedule A or A- 1; or
- b) that contain or are adjacent to a natural heritage feature.

Section 11.2 of the Official plan states: “It is the aim of this Plan to protect, maintain and enhance the important ecological and environmental features within the City. Areas designated EPA are to receive the highest level of protection with policies that prohibit development or site alteration. The Environmental Conservation Areas are important natural heritage areas where some restricted development or site alteration may occur if supported by an environmental impact study.

Any development proposed in close proximity to an EPA must be supported by an EIS and demonstrate that the development will not have a negative effect on the EPA. No development is permitted within any Provincially Significant Wetland.

2.4 Niagara Peninsula Conservation Authority

In order to administer Ontario Regulation 155/06, the Niagara Peninsula Conservation Authority (NPCA) has created a document titled Policies for the Administration of Ontario Regulation 155/06 and the Planning Act (NPCA 2018). The purpose of the document is to provide guidance for development applications that are located in and adjacent to natural heritage features and hazard lands. Regulated features on the Subject Property are limited to the watercourse and associated valley slope, as well as a portion of the Lyon’s Creek Provincially Significant Wetland Complex. Policies related to the management of valleylands and watercourses are included in Sections 6 and 9 respectively, while policies related to the management of wetland are contained in Section 8.

3.0 Study Approach

3.1 Background Review

Prior to the commencement of primary field inventories, a review of background material available for the Subject Property and surrounding area was conducted. Some of the background information reviewed included:

- ◆ Niagara Region Official Plan (RMON 2008);
- ◆ City of Niagara Falls Official Plan (City of Niagara Falls 2009);
- ◆ NPCA Planning & Regulation Policies and Guidelines (NPCA 2011);
- ◆ Ontario Ministry of Natural Resources and Forestry (MNRF) Species at Risk List for the City of Niagara Falls (MNR 2017s);
- ◆ Background data available from the NPCA and Ministry of Natural Resources and Forestry; and
- ◆ Niagara Natural Areas Inventory (NPCA 2010).

3.2 Field Inventories

To assess potential impacts associated with this project, the following inventories and assessments were conducted on the Subject Property:

- 1) Two-season botanical inventory;
- 2) Assessment and description vegetation communities on the properties using the Ecological Land Classification System for Southern Ontario;
- 3) Assessment of potential bat roosting habitat; and

- 4) Wildlife observations, including active hand searches for reptiles and amphibians.

The methods employed for each of the above components are provided in the appropriate sections below.

4.0 Study Findings

4.1 Botanical Inventories and Vegetation Mapping

Botanical inventories of the Subject Properties were undertaken on July 7 and September 4, 2017. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described, and a vascular plant checklist was compiled. Species status was assessed for Ontario (Oldham and Brinker 2009) and the Niagara Region (Oldham 2010).

Vegetation communities are described below and mapped on Figure 3. A vascular plant checklist is provided in Appendix A. Photos illustrating the vegetation conditions on the properties are provided in Appendix B.

4.1.1 Botanical Inventories

A total of 112 plant species were documented on the Subject Property during our inventories. No species considered at risk in Ontario (Oldham and Brinker 2009) were identified on the property, however floating beds of the Threatened American Water Willow were present downstream of the property. Two provincially rare species (Green Arrow-arum and Button-bush Dodder) were observed during the field visits along the open water edge of the Shallow Marsh.

Eight locally rare plant species were observed in the Shallow Marsh vegetation communities. Sweetflag, Marsh Bellflower and Marsh Cinquefoil occurred abundantly in the Broad-leaved Sedge Marsh. Swamp Loosestrife, Button-bush Dodder, Pickerel-weed, Swamp Dock and Hardstem Bulrush are restricted to the open water edge of the Shallow Marsh and adjacent Floating-leaved Aquatic Community.

Five locally uncommon species were also noted in the Shallow Marsh and Floating-leaved Aquatic Community. These species were Star Duckweed, Bullhead Pond-lily, Fragrant White Water-lily, Water Smartweed and Hooded Skullcap.

4.1.2 Vegetation Communities

FOD7-2 Fresh - Moist Ash Lowland Deciduous Forest Type

The valley slope is forested with a young and regenerating Fresh-Moist Ash Lowland Deciduous Forest Type (FOD7-2). A series of north-south trending rows of White Pine trees were planted perpendicular to the valley slope. The closed, to partly open, forest canopy (45-85% cover) is composed of young Green Ash and White Pine. Scattered, throughout are a number of young to mature (40-70+cm dbh) Pin Oak trees. In places, very large and tall Common Buckthorn shrubs reach the height of the forest canopy and contribute to provide canopy closure. Other species noted in the canopy were a few mature Swamp White Oak trees and younger White Elms. A



Legend

- Subject Property
- FOD7-2** Fresh-Moist Green Ash Lowland Deciduous Forest Type
- MAS2-1** Cattail Mineral Shallow Marsh Type
- MAS2-4** Broad-leaved Sedge Mineral Shallow Marsh Type
- SAF1-1** Water Lily - Bullhead Lily Floating-leaved Shallow Aquatic Type
- SAS1** Submerged Shallow Aquatic Ecosite
- SWT2-8** Silky Dogwood Mineral Thicket Swamp Type

Figure 3
Extent of Vegetation Communities
on the Subject Property

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number of rows of planted White Pine trees on the west half of the property are also mature enough to provide canopy closure.

Below the forest canopy of uneven age and height, a dense shrub layer of Grey Dogwood and Common Buckthorn shrubs provide 60-85% cover. The ground layer (>60% cover) is dominated by trailing stems of Moneywort, scattered plants of Common Strawberry, Common Cinquefoil, Mosses, Fowl Mana Grass and occasionally, Poison Ivy vines. Above this layer is an even denser layer of taller plants. Most typically Panicked Aster or One-sided Aster, Rough Goldenrod and Jumpseed.

SWT2-8 Silky Dogwood Mineral Thicket Swamp Type

At the toe of the valley slope, the forest grades into Silky Dogwood Thicket Swamp (SWT2-8) which marks the wetland boundary and active floodplain. Here, a dense band of Silky Dogwood shrubs dominate the thicket swamp, with an abundance of Riverbank Grape tangled throughout. Occasionally, a few scattered, mature Pin Oak trees occur. To a lesser extent occurs a few younger White Elm and Green Ash trees. In the ground layer, Sensitive Fern and Jewelweed grade into Narrow-leaved Cattail, Lakebank Sedge, Purple Loosetrife and Late Goldenrod towards the open floodplain.

MAS2-1 Cattail Mineral Shallow Marsh Type

Along a distinct line, the band of Silky Dogwood shrubs meet an open Cattail Mineral Shallow Marsh (MAS2-1). Tall plants of Narrow-leaved Cattail dominate the open floodplain, with scattered plants of Boneset and Swamp Aster. Below this 2-2.5m tall layer of openly grown Cattail is a dense layer of Lakebank Sedge (this only reaching 0.5-1m in height). Mixed with the Lakebank Sedge is an abundance of Jewelweed and trailing vines of Arrow-leaved Tearthumb and Hedge Bindweed. Below this is a lower layer of Sensitive Fern. These multiple marsh layers contribute to a complete (100%) cover of the floodplain. Very rarely, scattered Silky Dogood, Common Elderberry or Buttonbush shrubs occur. A few small White Elm and Pin Oak trees also persist in this open marsh.

MAS2-4 Broad-leaved Sedge Mineral Shallow Marsh Type

Along the edge of Lyons Creek is a Broad-leaved Sedge Mineral Shallow Marsh (MAS2-4). This community is dominated by mix of Broad-leaved Sedges, Canada Blue-joint Grass, Purple Loosetrife and Boneset. Jewelweed, Marsh Cinquefoil and Sensitive Fern dominate a lower layer, with Water Smartweed, Arrow Arum, Arrow-head, Pondweed, Marsh Bellflower and Sweetflag abundant along the open water/shallow marsh boundary.

SAF1-1 Water Lily - Bullhead Lily Floating-leaved Shallow Aquatic Type

The open water channel of Lyons Creek supports a dense Water Lily - Bullhead Lily Floating-leaved Shallow Aquatic (SAF1-1) community. Along the upland edge of this floating leaved bed is a line of the provincially rare emergent plant Arrow Arum. Occasional beds of Giant Bur reed, *Lemna trisulca* and arching stems of Water Willow also occur along the open water/marsh line. Along the opposite edge of the band of floating-leaved plants and grading into the deeper water of the Lyons Creek channel is a Submerged Shallow Aquatic (SAS) community which was not surveyed.

4.2 Wildlife and Wildlife Habitat

4.2.3 Wildlife Observations

Wildlife observations including signs were recorded during each visit to the property and included Grey Squirrel, American Toad and Northern Leopard Frog. Active hand searches for reptiles and amphibians were also conducted during each visit to the property, however no reptile or additional amphibian species were observed. Although wildlife observations on this property were limited, it is assumed that this property is being utilized by other wildlife species that are typical of the rural area of Niagara Falls.

4.3 Species at Risk Screening

Data provided by the MNRF indicates that species at risk known to occur in the vicinity of the property include American Water-willow (Threatened), Barn Swallow (Threatened), Eastern Meadowlark (Threatened), Grass Pickerel (Special Concern) and Snapping Turtle (Special Concern). Trees present on the property could also provide roosting habitat for species at risk bats. Based on our assessment of habitat available on the Subject Property, no potential nesting habitat for Barn Swallows or Eastern Meadowlark are present on the property, and no portion of the proposed project will impact habitat of Grass Pickerel or Snapping Turtles.

In addition to the above, a species at risk screening was conducted for the property using data obtained from MNRF (included as Appendix C). Wildlife and botanical surveys conducted on the property resulted in no observations of species at risk; however our screening suggests that any potential habitat for species at risk on this property is limited to Little Brown Myotis (END), Northern Myotis (END) and Tri-coloured Bat (END). An assessment of potential bat roosting habitat is provided below.

4.3.1 Assessment of Potential Bat Roosting Habitat

During the summer, the Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis and Tri-coloured Bats are found in a variety of forested habitats, as well as abandoned buildings, barns and attics. In forested habitats, cavities in trees, loose bark, foliage and other cover objects are used for roosting. These species forage in a variety of habitats where flying insects and spiders are present, often in association with wetlands, ponds and streams. Overwintering typically occurs in caves.

An assessment of potential bat roosting habitat was conducted on May 17, 2017 using methods described in MNRF (2017a). The May 17, 2017 visit was intended to inventory any tree cavities and determine the potential for any dead foliage to occur on live oak and maple trees.

From our observations of trees in the work area, no cavity trees and no suitable oak or maple trees were present. Due to the young nature of the woodland on this property, it is not anticipated that these trees are of sufficient size to develop well established cavities that could be used for roosting. As such, the proposed project is not anticipated to have a significant impact on any bat usage of the property.

5.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered or Threatened Species were observed or detected on the property during our assessment, however the Threatened American Water Willow was observed just upstream and

downstream of this property. This species was not noted along the section of floodplain which lies within the Subject Property, however, this property provides the same habitat as the nearby locations where American Water Willow is known to occur and should be considered as habitat for this species.

No other species at risk were observed on or adjacent to the property and the Subject Property does not appear to provide significant habitat for any other species at risk known to occur in the area (see Appendix C).

5.1.2 Other Potential Species of Conservation Concern

Two Species of Conservation Concern (Green Arrow-arum and Button-bush Dodder) were documented on the property during our inventories. The Green Arrow-arum has been designated as S2 and the Button-bush Dodder has been designated as S1S2. These species occurred only in the PSW and will not be impacted by any development proposed on this property.

5.2 Significant Wildlife Habitat

5.2.1 Seasonal Concentration Areas

The Significant Wildlife Habitat Technical Guide (SWHTG) identifies 14 types of seasonal concentrations of animals that may be considered significant wildlife habitat. These include, but are not limited to:

- ◆ winter deer yards;
- ◆ moose late winter habitat;
- ◆ colonial bird nesting sites;
- ◆ waterfowl stopover and staging areas;
- ◆ waterfowl nesting areas;
- ◆ shorebird migratory stopover areas;
- ◆ landbird migratory stopover areas;
- ◆ raptor winter feeding and roosting areas;
- ◆ Wild Turkey winter range;
- ◆ Turkey Vulture summer roosting areas;
- ◆ reptile hibernacula;
- ◆ bat hibernacula;
- ◆ bullfrog concentration areas; and
- ◆ migratory butterfly stopover areas.

Seasonal concentration areas are typically designated as significant wildlife habitat if it supports a species at risk or a large population may be lost if the habitat is destroyed.

None of these types of seasonal concentrations of animals were observed or documented on the Subject Lands.

5.2.2 Rare or Specialized Habitat

Rare habitat includes those vegetation communities which are designated as extremely rare to uncommon in Ontario. Those areas that qualify as rare habitats are assigned a SRank of S1, S2 or S3 by the Natural Heritage Information Center.

The SWHTG defines 14 specialized habitats that may be considered significant wildlife habitat. They are:

- ◆ habitat for area-sensitive species;
- ◆ forests providing a high diversity of habitats;
- ◆ old-growth or mature forest stands;
- ◆ foraging areas with abundant mast;
- ◆ amphibian woodland breeding ponds;
- ◆ turtle nesting habitat;
- ◆ specialized raptor nesting habitat;
- ◆ moose calving areas;
- ◆ moose aquatic feeding areas;
- ◆ mineral licks;
- ◆ mink, otter, marten, and fisher denning sites;
- ◆ highly diverse areas;
- ◆ cliffs; and
- ◆ seeps and springs.

No rare or specialized habitats are present on the Subject Property.

5.2.3 Migration Corridors

The SWHTG defines animal movement corridors as elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another. To qualify as significant wildlife habitat, these corridors should be a critical link between habitats that are regularly used by wildlife.

Based on our review of air photos, the Subject Property appears to be loosely connected to a larger woodland and naturalized area to the south and west of the property. This property likely provides some supporting habitat function to this larger natural area, however due to the developed nature of the lands east of the Subject property, this property does not appear to form part of a migration corridor.

5.3 Significant Woodlands

From our review of mapping, the southern half of the property has been included within a Significant Woodland. Our assessment indicates that this woodland feature is dominated by Green Ash and White Pine, with the Green Ash in decline or dead due to infestation by Emerald Ash Borer. Based on our assessment of the property, the canopy of the woodland on this property appears to satisfy the 35% canopy coverage criteria to be consistent with delineation criteria established by the Niagara Region.

As illustrated in Figure 4, the proposed residence on this property will be located within the woodland, on the east side of the property. Although no primary breeding bird surveys were conducted as part of this project, it is anticipated that this woodland is providing habitat for a variety of bird species that are commonly found in small woodlands and urban areas in Niagara Falls. Since the woodland on this property measures approximately 40m in width, it is anticipated that small size of this feature is limiting the wildlife species diversity in the woodland area.

To protect the ecological functions associated with this woodland, it is recommended that trees be retained on the property where possible to maintain wildlife functions of the woodland. It is also recommended that the lands not being developed be diversified with additional native trees species to aid in maintaining wildlife habitat functions on the property.

5.4 Significant Wetlands

The extent of the mapped PSW on this property is illustrated in Figure 2, with the extent of the wetland on this property generally coinciding with the extent of the Silky Dogwood Thicket Swamp at the toe of the slope. The wetland vegetation communities on this property are generally located near the toe of the slope and appear to receive surface water directly from Lyon's Creek.

Our assessment of the property indicates that the most significant species on this property are found in association with the marsh and open water vegetation communities north of the swamp thicket. In order to protect the rare species that occur on and adjacent to the property, it is recommended that no physical development or site alteration occur within 5m of the thicket swamp, which will be sufficient to protect vegetation within the wetland on this property.

5.5 Fish Habitat

Based on information available for the property, it is understood that Lyon's Creek is managed as Type 1 fish habitat, providing habitat for a variety of warmwater fish species. As illustrated in Figure 4, the proposed development will maintain a buffer of approximately 40m from Lyon's Creek. It is not anticipated that the proposed development will pose any impact to fish habitat or water quality in Lyon's Creek, provided the recommended mitigation measures below are incorporated into final designs and implemented during construction.

6.0 POTENTIAL ECOLOGICAL IMPACTS

6.1 Direct Impacts

As illustrated in Figure 4, the proposed development has been located within the Green Ash woodland portion of the property. Works associated with the proposed project will include the removal of vegetation and grading in the vicinity of the proposed development. This removal of vegetation and grading has the potential to directly impact vegetation in the vicinity of the building envelope, as well as alter drainage to the wetland and impact habitat of wildlife species using this portion of the property.

From our observations, the Green Ash Woodland on this property has developed within a former White Pine plantation and measures approximately 0.45ha in size. This woodland feature is located on the peripheries of a larger woodland located south and west of the property, which measures approximately 30ha in size. Since the woodland on the Subject Property is bisected by



a driveway constructed on 4949 Lyon's Parkway, it is anticipated that the woodland on the Subject Property is functioning as a small woodland feature, primarily providing habitat for bird and wildlife species typical of isolated woodlands. Although the proposed project will reduce the size of the woodland on the property, it is anticipated that this reduction in size will not significantly impact bird and wildlife species using the larger woodland feature, which is likely providing the primary woodland habitat in the area.

6.2 Indirect Impacts

In addition to the direct impacts discussed above, it is anticipated that the proposed development may result in several indirect impacts which may affect the woodland and wetland adjacent to the proposed development. Indirect impacts anticipated as part of this project include increases in ambient light and noise, and changes in hydrology on this site.

As the proposed development consists of the construction of a new residence on the property, it is anticipated that decorative lighting will be installed on the building, which could increase the existing ambient lighting in the woodland and wetland. During our observations of the property, it was noted that security and street lighting from the existing residential developments adjacent to the property currently results in ambient lighting in the woodland and wetland. As a result, it is anticipated that most of the species likely to be utilizing this property will be tolerant of lighting conditions associated with residential developments. It therefore not anticipated that any increase in ambient lighting will pose an impact to these species. To minimize any increases in ambient light to lands adjacent to the development, it is recommended that outdoor lighting be directed away from the woodland and wetland.

Impacts of anthropogenic noise on wildlife can include masking mating calls, increases in stress and habitat avoidance behaviours, however the level of impact is generally dependent on frequency and volume. It is anticipated that an increase in noise may occur for a short period of time during construction works on the property. This increase in noise has the potential to temporarily disrupt wildlife in close proximity to the development, however as the majority of wildlife species likely to be utilizing this property are tolerant of noise associated with the existing residential developments and road noise, any increase in noise is not anticipated to have a significant impact on wildlife use of the property.

In addition to the above, it is anticipated that the proposed project will require grading to be completed on the property to establish an adequate gradient on the property. From our review of background mapping and observations of the property, the site drops approximately 4m in elevation over a 40m wide section of the property. Due to this slope gradient, it is anticipated that all overland flow from the building envelope will continue to be directed to the wetland adjacent to the property and any change in grades will not impact the hydrology of the wetland associated with Lyon's Creek.

As illustrated in Figure 4, proposed structures on the property will be located no less than 15m from the extent of the wetland. It is not anticipated that the structures proposed to be installed will impact the functions of the wetland, however it is anticipated that some vegetation removal will be required adjacent to the building envelopes to allow for construction and amenity space. The extent of the wetland adjacent to Part 2 allows sufficient space for development and site alteration, while maintaining a 15m buffer from the wetland, however it is expected that some vegetation removal will occur within the 15m buffer area on Part 3.

The proposed residence on Part 3 has been located to maintain a 15m setback from the wetland, however it is expected that work area and amenity space will encroach into this 15m buffer. To maintain a sufficient naturalized buffer adjacent to the wetland, it is recommended that no development or site alteration occur within 10m of the wetland on this portion of the property. It is expected that a 10m naturalized buffer will provide sufficient visual protection to limit any potential avoidance behaviours for wildlife using the wetland on this property. Any wildlife using the wetland on this property will be adapted to the existing residential uses in the area, and the proposed development is not likely to introduce any new stressors.

From our observations of the property and review of the proposed development plan, it is our conclusion that the proposed development is not likely to impact the ecological function of the Significant Woodland in this area or affect the wetland on and adjacent to the property. It is therefore our conclusion that the proposed development is consistent with applicable policies of the Niagara Region and City of Niagara Falls.

7.0 MITIGATION MEASURES

As discussed above, it is our expectation that the proposed development will have no impact on the ecological functions of the woodland, wetland and watercourse on this property. To assist in avoiding any impacts associated with the proposed development, it is recommended that the following mitigation measures be implemented during construction of the proposed development.

- Appropriate sediment and erosion control measures should be installed at the limit of excavation and grading to delineate the work area and help minimize offsite movement of sediment.
- It is recommended that a limit of work fence be installed no less than 10m from the wetland to protect vegetation to remain within the buffer area.
- Tree and vegetation removal should be conducted in a manner to avoid impacts to nesting birds that may be utilizing habitats on the property. The breeding bird period for this area is generally March 15 to August 31. A survey for active bird nests should be conducted prior to any vegetation removal or site alteration planned to occur during this window.
- Any tree roots that are encountered during construction should be cut flush to promote new root growth.
- All excess soil material generated from excavations should be disposed of in a suitable off-site location.
- Site grading should be designed to maintain existing overland flow patterns on the property and minimize the change in grade adjacent to trees and vegetation to be retained.
- To help improve habitat function on this property, it is recommended that 2-3 bat boxes be installed on trees on and adjacent to the property.
- It is recommended that runoff from downspouts be directed away from the slope to prevent any potential erosion.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting was retained to assess potential impacts associated with the development of a new residence on the property located at the northern terminus of Ort Road in the City of Niagara Falls, as well as a lot severance with the construction of a new residence. Based on our assessments, it was determined that the proposed development will have no impact on the ecological function of the Significant Woodland on and adjacent to this property, and the proposed development will not impact wetlands or fish habitat associated with Lyon's Creek. To help avoid any ecological impacts to these features, it is recommended that the mitigation measures included in Section 7 be implemented during final design and construction of the proposed project.

Respectfully submitted by:



Ian Barrett, M.Sc.
Colville Consulting Inc.

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Appendix A

Vascular Plant Checklist

Plant List for the Property SW of Lyons Creek and Ort Road, Niagara Falls, ON. Conducted on July 7 and September 4, 2017.

ScientificName	CommonNames	Coef. Cons.	Coef. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	SAF1-1	MAS2-4	MAS2-1	SWT2-8	FOD7-2
<i>Acer rubrum</i>	Red Maple	4	0	G5			S5						x
<i>Acer saccharum</i> ssp. <i>saccharum</i>	Sugar Maple	4	3	G5			S5						x
<i>Acorus americanus</i>	Sweetflag	8	-5	G5			S4	R		x			
<i>Agrimonia gryposepala</i>	Tall Agrimony	2	2	G5			S5						x
<i>Agrostis stolonifera</i>	Creeping Bent Grass	0	-3	G5			S5						x
<i>Alliaria petiolata</i>	Garlic Mustard	0	0	G?			SE5						x
<i>Apocynum</i> sp	Dogbane Species										x	x	
<i>Asclepias incarnata</i> ssp. <i>incarnata</i>	Swamp Milkweed	6	-5	G5			S5			x	x		
<i>Aster lanceolatus</i> ssp. <i>lanceolatus</i>	Panicled Aster	3	-3	G5			S5				x	x	x
<i>Aster lateriflorus</i> var. <i>lateriflorus</i>	One-sided Aster	3	-2	G5			S5						x
<i>Aster novae-angliae</i>	New England Aster	2	-3	G5			S5						x
<i>Aster pilosus</i> var. <i>pilosus</i>	Hairy Aster	4	2	G5			S5						x
<i>Aster puniceus</i> var. <i>puniceus</i>	Purple-stem Aster	6	-5	G5			S5			x	x		
<i>Bidens tripartita</i>	Three-lobed Beggar-ticks	4	-3	G5			S5			x			
<i>Boehmeria cylindrica</i>	False Nettle	4	-5	G5			S5			x			
<i>Bromus inermis</i> ssp. <i>inermis</i>	Smooth Brome	0	5	G4G5			SE5						x
<i>Butomus umbellatus</i>	Flowering-rush	0	-5	G5			SE5			x			
<i>Calamagrostis canadensis</i>	Canada Blue-joint	4	-5	G5			S5			x			
<i>Calystegia sepium</i> ssp. <i>angulata</i>	Hedge Bindweed	2	0	G5			S5				x	x	
<i>Campanula aparinoides</i>	Marsh Bellflower	7	-5	G5			S5	R		x			
<i>Carex gracillima</i>	Graceful Sedge	4	3	G5			S5						x
<i>Carex lacustris</i>	Lakebank Sedge	5	-5	G5			S5				x	x	x
<i>Carex cf. laxiflora</i>	Loose-flowered Sedge	5	0	G5			S5						x
<i>Carex radiata</i>	Radiate Sedge	4	5	G4			S5						x
<i>Carex</i> (Broad-leaved)	Sedge Species									x	x	x	
<i>Carex</i> sp	Sedge Species									x	x	x	x
<i>Centaurea</i> sp	Knapweed Species												x
<i>Cephalanthus occidentalis</i>	Buttonbush	7	-5	G5			S5			x		x	
<i>Chelone glabra</i>	Turtlehead	7	-5	G5			S5			x			
<i>Cicuta bulbifera</i>	Bulb-bearing Water-hemlock	5	-5	G5			S5			x			
<i>Cinna arundinacea</i>	Stout Woodreed	7	-3	G5			S4						x
<i>Cornus amomum</i> ssp. <i>obliqua</i>	Silky Dogwood	5	-4	G5			S5			x	x	x	X
<i>Cornus foemina</i> ssp. <i>racemosa</i>	Grey Dogwood	2	-2	G5			S5						x
<i>Crataegus punctata</i>	Dotted Hawthorn	4	5	G5			S5						x
<i>Cuscuta cephalanthi</i>	Button-bush Dodder	8	5	G5			S1S2	R		x			
<i>Dactylis glomerata</i>	Orchard Grass	0	3	G?			SE5						x
<i>Daucus carota</i>	Wild Carrot	0	5	G?			SE5						x
<i>Decodon verticillatus</i>	Swamp Loosestrife	7	-5	G5			S5	R		x			
<i>Dipsacus fullonum</i> ssp. <i>sylvestris</i>	Common Teasel	0	5	G?			SE5						x
<i>Epilobium parviflorum</i>	Small-flowered Willow-herb	0	3	G?			SE4			x			
<i>Eupatorium perfoliatum</i>	Common Boneset	2	-4	G5			S5			x	x		
<i>Eupatorium perfoliatum</i> x <i>maculata</i>	Boneset \ Joe-pye-weed hybrid									x			
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	G5			S5						x
<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	Common Strawberry	2	1	G5			S5						x
<i>Fraxinus pennsylvanica</i>	Red Ash	3	-3	G5			S5				x	x	x
<i>Geum canadense</i>	White Avens	3	0	G5			S5						x
<i>Glyceria striata</i>	Fowl Manna Grass	3	-5	G5			S5						x
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	G5			S5			x	x	x	x
<i>Inula helenium</i>	Elecampane	0	5	G?			SE5						x

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	SAF1-1	MAS2-4	MAS2-1	SWT2-8	FOD7-2
<i>Iris sp</i>	Iris Species									x			
<i>Leersia oryzoides</i>	Rice Cut Grass	3	-5	G5			S5			x			
<i>Lemna trisulca</i>	Star Duckweed	4	-5	G5			S5	U	x	x			
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	0	3	G?			SE5						x
<i>Lonicera X bella</i>	Showy Fly Honeysuckle	0	5	G?			SE2						x
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	G5			S5			x			
<i>Lysimachia ciliata</i>	Fringed Loosestrife	4	-3	G5			S5				x	x	
<i>Lysimachia nummularia</i>	Moneywort	0	-4	G?			SE5						x
<i>Lythrum salicaria</i>	Purple Loosestrife	0	-5	G5			SE5			x	x	x	
<i>Malus pumila</i>	Common Apple	0	5	G5			SE5						x
<i>Mentha arvensis ssp. borealis</i>	Wild Mint	3	-3	G5			S5			x	x		
<i>Nuphar variegata</i>	Bulhead Pond-lily	4	-5	G5			S5	U	x				
<i>Nymphaea odorata ssp. tuberosa</i>	Fragrant White Water-lily	5	-5	G5			SU	U	x	x			
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	G5			S5			x	x	x	x
<i>Parthenocissus inserta</i>	Thicket Creeper	3	3	G5			S5					x	x
<i>Peltandra virginica ssp. virginica</i>	Green Arrow-arum	9	-5	G5			S2		x	x			
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	G5			S5			x		x	
<i>Phragmites australis</i>	Common Reed	0	-4	G5			S5		x	x			
<i>Picea abies</i>	Norway Spruce	0	5	G?			SE3						x
<i>Pinus strobus</i>	Eastern White Pine	4	3	G5			S5						x
<i>Poa pratensis ssp. pratensis</i>	Kentucky Blue Grass	0	1	G?			S5						x
<i>Polygonum amphibium</i>	Water Smartweed	5	-5	G5			S5	U		x			
<i>Polygonum sagittatum</i>	Arrow-leaved Tearthumb	5	-5	G5			S4				x		
<i>Polygonum virginianum</i>	Jumpseed	6	0	G5			S4						x
<i>Pontederia cordata</i>	Pickerel-weed	7	-5	G5			S5	R		x			
<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	4	-1	G5			S5						x
<i>Potentilla palustris</i>	Marsh Cinquefoil	7	-5	G5			S5	R		x			
<i>Potentilla simplex</i>	Common Cinquefoil	3	4	G5			S5						x
<i>Prunella vulgaris ssp. lanceolata</i>	Heal-all	5	5	G5			S5						x
<i>Prunus virginiana ssp. virginiana</i>	Choke Cherry	2	1	G5			S5						x
<i>Pyrus communis</i>	Common Pear	0	5	G5			SE4						x
<i>Quercus bicolor</i>	Swamp White Oak	8	-4	G5			S4						x
<i>Quercus palustris</i>	Pin Oak	9	-3	G5			S4				x	x	x
<i>Quercus rubra</i>	Red Oak	6	3	G5			S5						x
<i>Rhamnus cathartica</i>	Common Buckthorn	0	3	G?			SE5						x
<i>Rhamnus frangula</i>	Glossy Buckthorn	0	-1	G?			SE5						x
<i>Rhus radicans ssp. negundo</i>	Climbing Poison-ivy	5	-1	G5			S5						x
<i>Rhus typhina</i>	Staghorn Sumac	1	5	G5			S5						x
<i>Rosa multiflora</i>	Multiflora Rose	0	3	G?			SE4						x
<i>Rosa palustris</i>	Swamp Rose	7	-5	G5			S5			x			
<i>Rubus idaeus ssp. melanolasius</i>	Wild Red Raspberry	0	-2	G5			S5						x
<i>Rumex cf. verticillatus</i>	Swamp Dock	7	-5	G5			S4	R		x			
<i>Sagittaria latifolia</i>	Common Arrowhead	4	-5	G5			S5			x			
<i>Salix alba</i>	White Willow	0	-3	G5			SE4					x	x
<i>Salix cinerea</i>	Ashy Willow	0	5	G5			SE2					x	x
<i>Salix fragilis</i>	Crack Willow	0	-1	G?			SE5						x
<i>Sambucus canadensis</i>	Common Elderberry	5	-2	G5			S5				x	x	
<i>Scirpus acutus</i>	Hardstem Bulrush	6	-5	G5			S5	R		x			
<i>Scirpus cyperinus</i>	Wool Grass	4	-5	G5			S5			x			
<i>Scutellaria galericulata</i>	Hooded Skullcap	6	-5	G5			S5	U		x			

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	SAF1-1	MAS2-4	MAS2-1	SWT2-8	FOD7-2
<i>Scutellaria lateriflora</i>	Blue Skullcap	5	-5	G5			S5			x			
<i>Sium suave</i>	Water-parsnip	4	-5	G5			S5		x	x			
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	0	G?			SE5				x	x	
<i>Solidago altissima var. altissima</i>	Tall Goldenrod	1	3	G?			S5				x	x	x
<i>Solidago rugosa ssp. rugosa</i>	Rough Goldenrod	4	-1	G5			S5						x
<i>Sparganium eurycarpum</i>	Giant Bur-reed	3	-5	G5			S5		x	x			
<i>Spiraea alba</i>	Narrow-leaved Meadowsweet	3	-4	G5			S5					x	
<i>Tussilago farfara</i>	Coltsfoot	0	3	G?			SE5						x
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	G5			S5				x	x	
<i>Ulmus americana</i>	White Elm	3	-2	G5?			S5				x	x	x
<i>Viburnum lentago</i>	Nannyberry	4	-1	G5			S5						x
<i>Viburnum recognitum</i>	Southern Arrow-wood	7	-2	G5			S4				x		x
<i>Vitis riparia</i>	Riverbank Grape	0	-2	G5			S5				x	x	x

Legend

CoeCons. - Coefficient of Conservatism. Scores for each species range from 0 (low conservatism) to 10 (high conservatism). A conservatism value of 0 indicates species is widespread. A value of 8, 9 or 10 indicates that a species is a habitat specialist.

CoeWet. - Coefficient of Wetness

5 - Almost always occur in upland areas

4, 3, 2 - Usually occur in upland areas

1, 0, -1 - Found equally in upland and wetland areas

-2, -3, -4 Usually occur in wetlands

-5 Almost always occur in wetlands

Grank - Global Rank G1 — Critically Imperiled, G2 — Imperiled, G3 — Vulnerable, G4 — Apparently Secure, G5 — Secure

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

COSSARO - Committee on the Status of Species at Risk in Ontario

Srank - Subnational Rank

S1 — Critically Imperiled - Critically imperiled in the province because of extreme rarity, (often 5 or fewer occurrences)

S2 — Imperiled - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer)

S3 — Vulnerable - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer)

S4 — Apparently Secure - Uncommon but not rare

S5 — Secure - Common, widespread, and abundant in the province

SE — Exotic

Lrank - Local Rank

R - Rare

U - Uncommon

Appendix B

Site Photos



Photo 1. Example of vegetation conditions in the FOD7-2 community on the property.



Photo 2. Example of vegetation conditions in the FOD7-2 community on the property.



Photo 3. Example of vegetation conditions in the FOD7-2 community on the property.



Photo 4. Example of vegetation conditions in the SWT2-8 community on the property.



Photo 5. Example of vegetation conditions in the MAS2-1 community on the property.



Photo 6. Example of vegetation conditions in the Cattail and Sedge Marsh communities on the Property.

Appendix C

Species at Risk Screening

Niagara Falls

Species At Risk Designations

ENDANGERED

THREATENED

SPECIAL CONCERN

EXTIRPATED

AMPHIBIANS	ESA Protection	Key Habitats Used By Species	Subject Property	
Allegheny Mountain Dusky Salamander (<i>Desmognathus ochrophaeus</i>)	Known to Occur	Species Protection and Habitat Regulation	generally found near forested brooks, mountain cascades, springs, or seeps. It uses this habitat to forage, as well as for overwintering and brooding. It nests in springs and seeps. Shelter is provided in wet cavities along stream edges or seeps, or under stones, leaf litter, or logs.	Suitable habitat not present on property.
Northern Dusky Salamander (<i>Desmognathus fuscus</i>)	Known to Occur	Species Protection and Habitat Regulation	Generally prefer rocky woodland streams, seepages, and springs where water is running or trickling	Suitable habitat not present on property.

BIRDS	ESA Protection	Key Habitats Used By Species	Subject Property	
Acadian Flycatcher (<i>Empidonax vireescens</i>)	Known to Occur	Species and General Habitat Protection	generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines	Typical habitat not present on property.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Known to Occur	N/A	prefers deciduous and mixed-deciduous forest; and habitat close to water bodies such as lakes and rivers; They roost in super canopy trees such as Pine	Typical habitat not present on property.
Bank Swallow (<i>Riparia riparia</i>)	Known to Occur	Species and General Habitat Protection	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.	Suitable habitat not present on property.
Barn Swallow (<i>Hirundo rustica</i>)	Known to Occur	Species and General Habitat Protection	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.	Typical habitat not present on property.
Bobolink (<i>Dolichonyx oryzivorus</i>)	Known to Occur	Species and General Habitat Protection	generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Suitable habitat not present on property.
Chimney Swift (<i>Chaetura pelagica</i>)	Known to Occur	Species and General Habitat Protection	historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Suitable habitat not present on property.
Common Nighthawk (<i>Chordeiles minor</i>)	Known to Occur	N/A	generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat rooftops)	Suitable habitat not present on property.
Eastern Meadowlark (<i>Sturnella Magna</i>)	Known to Occur	Species and General Habitat Protection	generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Suitable habitat not present on property.
Eastern Whip-poor-will (<i>Caprimulgus vociferus</i>)	Known to Occur	Species and General Habitat Protection	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.	Suitable habitat not present on property.
Eastern Wood-Pewee (<i>Contopus virens</i>)	Known to Occur	N/A	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understorey vegetation as well as forest clearings and edges.	Typical habitat not present on property.
Golden-winged Warbler (<i>Vermivora chrysoptera</i>)	Known to Occur	N/A	generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Suitable habitat not present on property.
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	Historically Known to Occur	Species and General Habitat Protection	generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Suitable habitat not present on property.
Least Bittern (<i>Ixobrychus exilis</i>)	Known to Occur	Species and General Habitat Protection	generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Suitable habitat not present on property.
Northern Bobwhite (<i>Colinus virginianus</i>)	Historically Known to Occur	Species and General Habitat Protection	generally inhabits a variety of edge andgrassland type - habitats including nonintensively farmed agricultural lands.	Suitable habitat not present on property.
Peregrine Falcon (<i>Falco peregrinus</i>)	Known to Occur	N/A	grassland type - habitats including nonintensively	Suitable habitat not present on property.

Red-Headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Known to Occur	N/A	farmed agricultural lands.	Suitable habitat not present on property.
Wood Thrush (<i>Hylocichla mustelina</i>)	Known to Occur	N/A	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.	Typical habitat not present on property.
Yellow-breasted Chat (<i>Icteria virens</i>)	Known to Occur	Species and General Habitat Protection	generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Typical habitat not present on property.

FISH		ESA Protection	Key Habitats Used By Species	Subject Property
American Eel (<i>Anguilla rostrata</i>)	Known to Occur	Species and General Habitat Protection	all fresh water, estuaries and coastal marine waters that are accessible to the Atlantic Ocean; 12-mile creek watershed and Lake Ontario	Typical habitat not present on or adjacent to property.
Grass Pickerel (<i>Esox americanus vermiculatus</i>)	Known to Occur	N/A	generally occur in wetlands with warm, shallow water and an abundance of aquatic plants; occur in the St. Lawrence River, Lake Ontario, Lake Erie, and Lake Huron	Typical habitat not present on or adjacent to property.
Lake Chubsucker (<i>Erimyzon sucetta</i>)	Known to Occur	Species and General Habitat Protection	generally prefer marshes, wetlands and lakes with clear, still waters and abundant aquatic plants	Typical habitat not present on or adjacent to property.
Lake Sturgeon (<i>Acipenser fulvescens</i>)	Known to Occur	Species and General Habitat Protection	generally inhabits the bottoms of shallow areas of large freshwater lakes and rivers	Typical habitat not present on or adjacent to property.

INSECTS		ESA Protection	Key Habitats Used By Species	Subject Property
Monarch Butterfly (<i>Danaus plexippus</i>)	Known to Occur	N/A	exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces	Suitable habitat not present on property.
Rusty-patched Bumble Bee (<i>Bombus affinis</i>)	Formerly Occurred and May Still Occur	Species and General Habitat Protection June 27, 2014	generally inhabits a range of diverse habitats including mixed farmland, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows	Typical habitat not present on property.
West Virginia White (<i>Pieris virginiensis</i>)	Known to Occur	N/A	generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (<i>Cardamine diphylla</i>), which is a small, spring-blooming plant of the forest floor.	Suitable habitat not present on property.

MAMMALS		ESA Protection	Key Habitats Used By Species	Subject Property
Grey Fox (<i>Urocyon cinereoargenteus</i>)	Suspected to Occur	Species and General Habitat Protection	generally prefers deciduous forests, marshes, swampy areas, and urban areas	Typical habitat not present on property.
Eastern small-footed Myotis (<i>Myotis leibii</i>)	Suspected to Occur	Species and General Habitat Protection	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.	Typical habitat not present on property.
Little Brown Myotis (<i>Myotis lucifugus</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	Some small diameter dead ash trees on property, but no cavity trees present. No evidence of bark exfoliation on trees.
Northern Myotis (<i>Myotis septentrionalis</i>)	Suspected to Occur	Species and General Habitat Protection	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.)	Some small diameter dead ash trees on property, but no cavity trees present. No evidence of bark exfoliation on trees.
Tri-colored Bat (<i>Perimyotis subflavus</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures.	Typical habitat not present on property.

MOLLUSCS		ESA Protection	Key Habitats Used By Species	Subject Property
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MOSESSES		ESA Protection	Key Habitats Used By Species	Subject Property
Spoon-leaved Moss (<i>Bryoandersonia illecebra</i>)	Known to Occur	Species and General Habitat Protection	generally found in deciduous forests; found on soil that is in or near flat, low-lying, seasonally wet areas.	Typical habitat not present on property. Not observed on property.

PLANTS		ESA Protection	Key Habitats Used By Species	Subject Property
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American Chestnut (<i>Castanea dentata</i>)	Known to Occur	Species and General Habitat Protection	found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Typical habitat not present on property. Not observed on property.
American Ginseng (<i>Panax quinquefolius</i>)	Known to Occur	Species and General Habitat Protection	grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Typical habitat not present on property. Not observed on property.
American Water-willow (<i>Justicia americana</i>)	Known to Occur	Species and General Habitat Protection	generally grows along shorelines and sometimes in nearby wetlands, as well as along streams where the bottom is composed of gravel, sand or organic matter	Typical habitat present on and adjacent to property. Known to occur in the vicinity of the property. Not observed on or adjacent to property.
Butternut (<i>Juglans cinerea</i>)	Known to Occur	Species and General Habitat Protection	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	Typical habitat not present on property. Not observed on property.
Common Hoptree (<i>Ptelea trifoliata</i>)	Known to Occur	Species and General Habitat Protection	generally grows in sandy soils in areas with a lot of natural disturbance - such as the outer edge of shoreline vegetation, sand spits, and sand points.	Typical habitat not present on property. Not observed on property.
Deerberry (<i>Vaccinium stamineum</i>)	Known to Occur	Species and General Habitat Protection	generally occurs on sandy and well-drained soil, often in dry open woodlands (Niagara Gorge)	Typical habitat not present on property. Not observed on property.
Drooping Trillium (<i>Trillium flexipes</i>)	Historically Known to Occur	Species and General Habitat Protection	generally grows in dry, sandy loam, nonacidic soils of mature, deciduous woodlands that are usually associated with watercourses.	Typical habitat not present on property. Not observed on property.
Eastern Flowering Dogwood (<i>Cornus florida</i>)	Known to Occur	Species Protection and Habitat Regulation	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	Typical habitat not present on property. Not observed on property.
Red Mulberry (<i>Morus rubra</i>)	Known to Occur	Species and General Habitat Protection	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	Typical habitat not present on property. Not observed on property.
Round-leaved Greenbrier (<i>Smilax rotundifolia</i>)	Known to Occur	Species and General Habitat Protection	generally grows in open moist to wet woodlands, often growing on sandy soils. Habitat is variable.	Typical habitat not present on property. Not observed on property.
Shumard Oak (<i>Quercus shumardii</i>)	Known to Occur	N/A	generally grows in deciduous forests, where the soils are poorly drained clay and clay loam. Requires full sunlight.	Typical habitat not present on property. Not observed on property.
Swamp Rose-mallow (<i>Hibiscus moscheutos</i>)	Known to Occur	Species and General Habitat Protection	generally grows in open, coastal marshes, but it is also sometimes found in open wet woods, thickets and drainage ditches	Typical habitat present on and adjacent to property. Not observed on property.
White Wood Aster (<i>Eurybia divaricata</i>)	Known to Occur	Species and General Habitat Protection	generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Typical habitat not present on property. Not observed on property.

REPTILES		ESA Protection	Key Habitats Used By Species	Subject Property
Blanding's Turtle (<i>Emydonidea blandingii</i>)	Known to Occur	Species and General Habitat Protection	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.	Potential habitat present in Lyon's Creek. Not observed on property. Proposed development will not impact habitat of this species.
Eastern Musk Turtle (<i>Sternotherus odoratus</i>)	Known to Occur	Species and General Habitat Protection	Generally prefers shallow, slowmoving water where it typically walks along the bottom rather than swimming	Potential habitat present in Lyon's Creek. Not observed on property. Proposed development will not impact habitat of this species.
Eastern Ribbonsnake (<i>Thamnophis sauritus</i>)	Known to Occur	N/A	generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Typical habitat present on and adjacent to property. Not observed on property.
Snapping Turtle (<i>Chelydra serpentina</i>)	Known to Occur	N/A	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.	Habitat present in Lyon's Creek. Not observed on property. Proposed development will not impact habitat of this species.