

SCOPED ENVIRONMENTAL IMPACT STUDY
353 TOWNLINE ROAD
TOWN OF NIAGARA-ON-THE-LAKE

PREPARED FOR:

Kaneff Group

PREPARED BY:



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C22064

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Kaneff Group to prepare an Environmental Impact Statement (EIS) to assess potential ecological impacts associated with the development of an industrial subdivision on the property located at 353 Townline Road, Niagara-on-the-Lake. The property is located approximately 75m north of the unopened Westwood Court road allowance, with a small portion of the Subject Property directly abutting Townline Rd, Niagara-on-the-Lake (see Figure 1).

This EIS has been prepared to assess potential impacts the proposed development of four industrial lots and a stormwater block may have on natural heritage features located on and adjacent to the Subject Property. This EIS is intended to present the results of our field investigations and assessments of any potential impacts. A summary of our assessment is included below.

1.1 Description of the Subject Property

The property is located within the Glendale Area included in Schedule F of the Niagara-on-the-Lake Official Plan. The Subject Property measures approximately 11.38 hectares (28.12 acres) in size.

A review of background air photos ranging from 1934 to present indicates that a majority of the Subject Property have been historically used for agricultural purposes, which appears to have been abandoned after 1965. The formerly agricultural lands have succeeded to a mix of meadow, thicket hedgerow and woodland. The east and central portion of the property contains a mature deciduous forest, bisected by the main branch of Six Mile Creek, which has Type 2 (Important) Fish Habitat associated with this channel.

Located on the west side of the Subject Property is a constructed drainage feature that conveys water across the north end of the property towards Queenston Road. There is also a constructed pond located in the southwestern portion of the property.

No buildings or structures are located on the property, and adjacent land uses include industrial, rural residential and open space. The woodland feature is designated as Significant Woodland. The extent of mapped natural heritage features on the Subject Property are illustrated in Figure 2.

1.2 Description of Proposed Development

Proposed development on this property consists of the creation of four blocks intended for light industrial uses, a stormwater management block and a road extension north of Westwood Court. The four industrial blocks occupy approximately 8.23 hectares of the property, while the stormwater management block measures approximately 0.86 hectares in size. A proposed concept plan is provided in Appendix A.

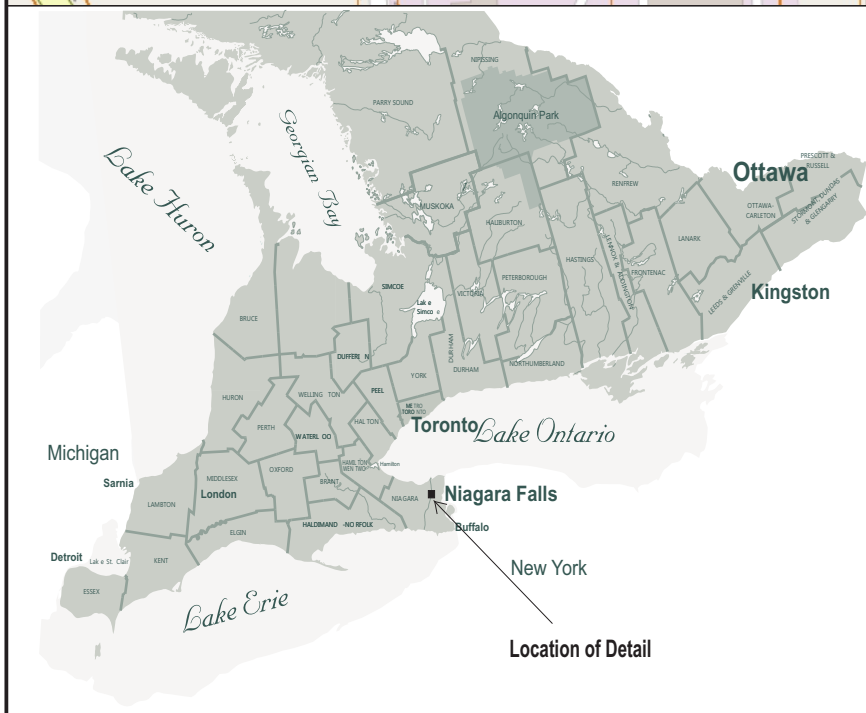
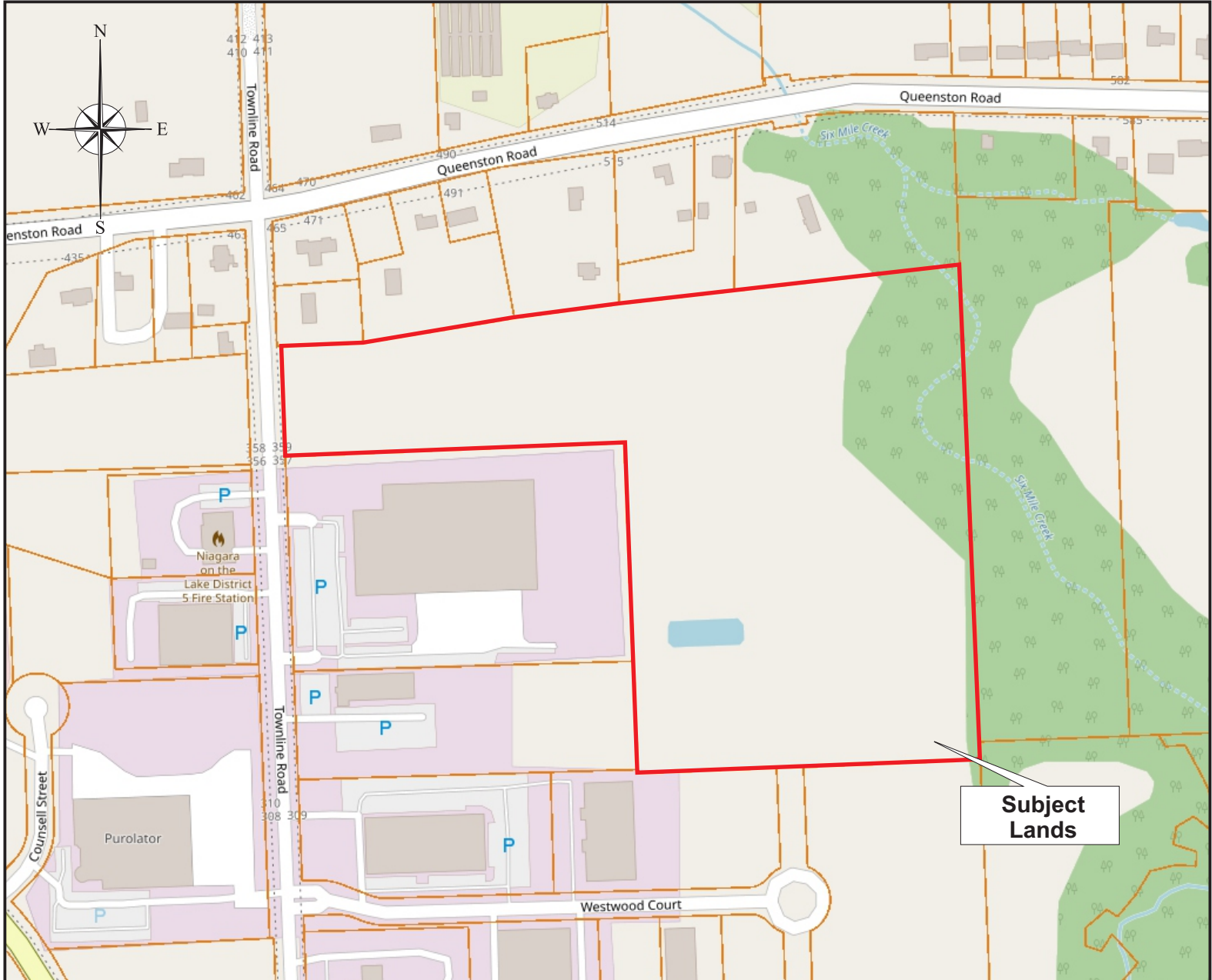
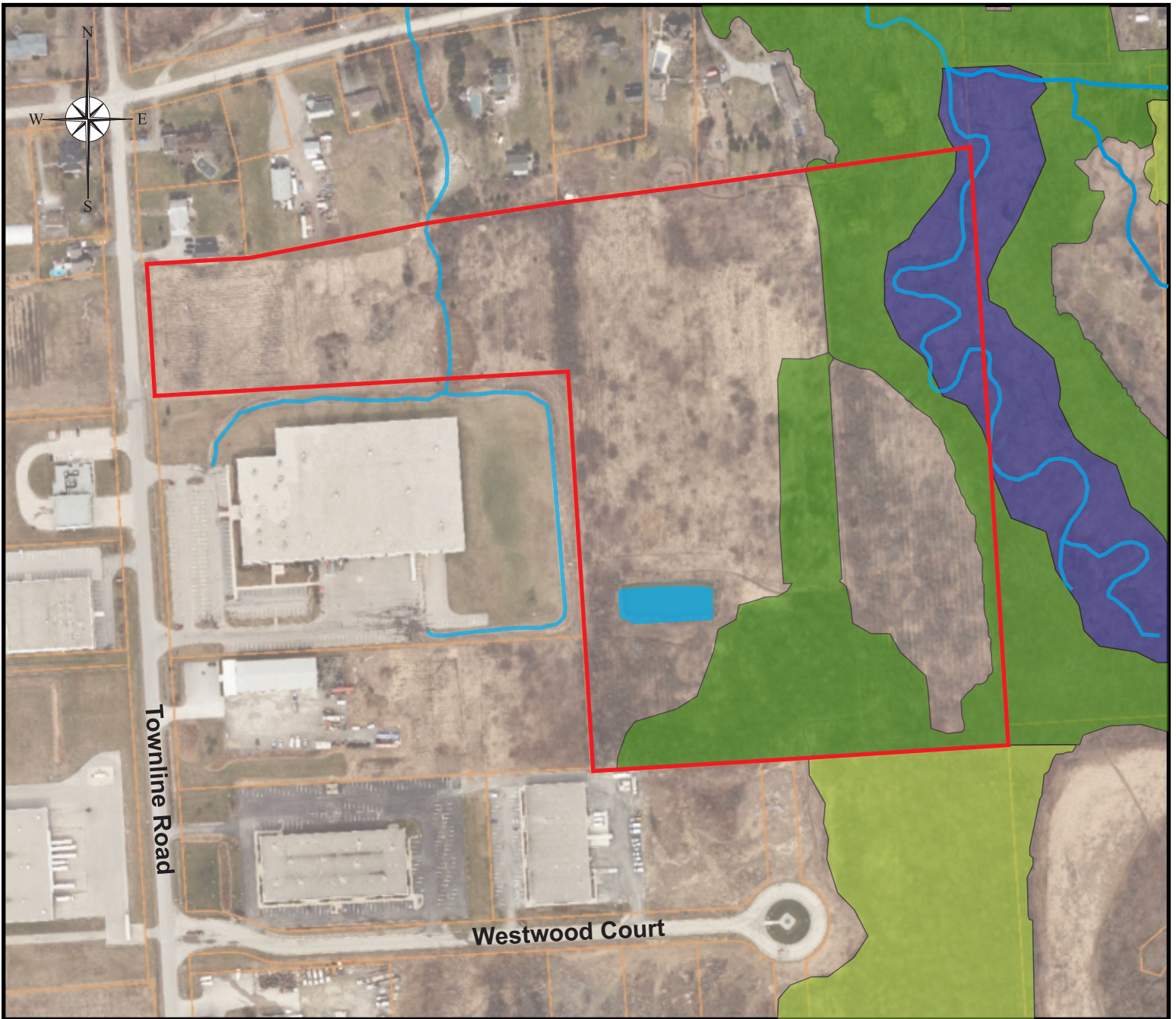


FIGURE 1
Location Map

**Environmental Impact Study for
353 Townline Road**

Prepared for:
Kaneff Group

Prepared by:
COLVILLE CONSULTING INC.



Legend

- Subject Property
- Watercourse
- Significant Woodland
- Other Woodland
- Other Wetland

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

Environmental Impact Study for
353 Townline Road

Prepared for: **Kaneff Group**

Prepared by: **COLVILLE** 
 CONSULTING INC.

DATE: January 2024

FILE: C22064

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, 2005, 2014, and most recently in 2020. It applies to all applications submitted after May 1, 2020, 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.

The PPS intends to ensure that natural features and areas be protected for the long term. The PPS indicates that 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 groundwater features.

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.

Development and site alteration is not permitted in:

- ♦ significant wetlands in Ecoregions 5E, 6E, and 7E; and
- ♦ significant coastal wetlands

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 are not permitted in:

- ♦ significant wetlands north of Ecoregions 5E, 6E, and 7E;
- ♦ significant woodlands and valleylands south and east of the Canadian Shield;
- ♦ significant wildlife habitat;
- ♦ significant areas of natural and scientific interest; and
- ♦ coastal wetlands in Ecoregions 5E, 6E, and 7E.

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

Furthermore, development and site alteration are not 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 their ecological functions.

2.2 Regional Niagara Official Plan

The Niagara Region Official Plan was updated in 2022 and is intended to provide a strategic planning framework to assist with managing growth in the Region. Chapter 3 of the Official Plan outlines the objectives and policies for a Regional natural heritage system and water resource system. The natural heritage system is comprised of features such as wetlands, woodlands, valleylands, and wildlife habitat, as well as components such as linkages, buffers, supporting features and areas, and enhancement areas. The intent of the natural heritage system is to preserve and enhance the biodiversity, connectivity, and long-term ecological function of natural systems in the Region.

The water resource system is made up of both groundwater features and surface water features and areas. The intent of the water resource system is to protect the ecological and hydrological integrity of water resources and the various watersheds in the Region. The natural heritage and water resource systems are ecologically linked, rely on and support each other, and have many overlapping components.

The features and components of the natural environment system are listed in Schedule L and include significant woodlands, other woodlands, provincially significant wetlands, other wetlands and non-provincially significant wetlands, earth and life science areas of natural and scientific interest, permanent and intermittent streams, buffers, linkages and supporting areas. Schedule L includes the definitions and criteria for each of the features and components.

Mapped features on and adjacent to the Subject Property include significant woodland, other woodland, other wetland and an intermittent watercourse. Not all of the features and components that make up the natural environment system can, or have been mapped, as part of the schedules to the Official Plan. Where features or components of the natural environment system listed in Schedule L are not mapped, detailed area-specific or site-specific studies such as an environmental impact study, hydrological evaluation, or sub-watershed study are required for their identification.

Where through the review of an application for development or site alteration, or through the completion of a sub-watershed study, it is found that there are features or components of the natural environment system or related ecological and/or hydrologic functions that have not been adequately mapped, evaluated, or protected, the applicant shall have an evaluation prepared by a qualified professional in consultation with the Region, the Local Area Municipality and, where appropriate, the Conservation Authority. If the evaluation finds one or more natural heritage features and areas, key natural heritage features, or key hydrologic features, the policies of this Plan will be applied to the lands under application as appropriate.

Section 3.1.4 of the OP includes policies related to the refinement of Natural Environment System components. Section 3.1.4.1 states that changes to the limits or classification of individual features or components of the natural environment system identified through regional criteria may be considered through the submission of an environmental impact study and/or hydrological evaluation based on a terms of reference approved by the Region, in accordance with the policies of this Plan, and in consultation with the Conservation Authority as appropriate.

Section 3.1.4.2 goes on to state that if the change to the limit or classification of an individual feature or component of the natural environment system identified through regional criteria can be justified to the satisfaction of the Region, an amendment to this Plan shall not be required.

Section 3.1.9.6 of the OP includes policies related to development and site alteration in Natural Heritage Features and Areas outside of the Provincial Natural Heritage System. Section 3.1.9.6.1 states that 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.

Section 3.1.9.6.2 states that 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; and
- d) areas of natural and scientific interest.

Section 3.1.9.6.7 states that where an other wetland in a settlement area has been identified, and it is determined that it is not regulated by the Conservation Authority:

- a) the Region shall require that an evaluation be undertaken through an environmental impact study, and if required, a wetland evaluation using the Ontario Wetland Evaluation System, and/or hydrological evaluation as part of an application for development or site alteration, or through a sub-watershed study to determine the appropriate classification and protection or management of the feature;
- b) outcomes of the evaluation completed with Policy 3.1.9.6.7 a) could include the in-situ protection with appropriate buffers or incorporation of the hydrologic function into the design of the development in accordance with the following:
 - i. if the other wetland is a treed community with a canopy coverage greater than 25 per cent, and the other criteria for other woodlands are met, the other woodland policies of this Plan shall apply;
 - ii. if the other wetland is a treed community with a canopy coverage greater than 60 per cent, and the other criteria for significant woodlands are met, the significant woodland policies of this Plan shall apply;
 - iii. no negative impact on the ecological function of the other wetland; and
 - iv. maintain the hydrologic function of the other wetland;

Policies related to buffers in settlement areas are included in section 3.1.9.10. Section 3.1.9.10.1 states that within settlement areas, mandatory buffers from natural heritage features and areas are required. The width of an ecologically appropriate buffer would be determined through an environmental impact study and/or hydrological evaluation at the time an application for development or site alteration is made, or through the completion of a sub-watershed study in support of a secondary plan or other large-scale development. The width of the buffer would be based on the sensitivity of the ecological functions from the proposed development or site alteration, and the potential for impacts to the feature and ecological functions as a result of the proposed change in land use.

Section 3.1.9.10.2 states that development or site alteration shall not be permitted in the mandatory buffer, with the exception of that described in Policy 3.1.9.6.3 or infrastructure serving the agricultural sector unless it has been demonstrated through the preparation of an environmental impact study that there will be no negative impacts and the buffer will continue to provide the ecological function for which it was intended.

Policies related to the management of other woodlands are included in section 3.1.11 of the OP. Section 3.1.11.2 states that development or site alteration shall not be permitted in other woodlands unless it has been demonstrated through the preparation of an environmental impact study that there will be no negative impacts on the other woodland or its ecological functions.

Policies related to the management of fish habitat are included in section 3.1.12. Section 3.1.12.1 states that development or site alteration shall not be permitted in fish habitat except in accordance with Federal and Provincial requirements. In order to determine whether fish habitat is present, proponents of development or site alteration shall be required to screen for the presence of fish habitat to the satisfaction of the Region.

Section 3.1.12.2 goes on to state that if fish habitat is determined to be present, a fish habitat assessment undertaken by a qualified professional shall be required for development or site alteration within or adjacent to fish habitat. Development or site alteration may be exempt from this requirement provided that:

- a) the development satisfies Federal and Provincial requirements or has been specifically authorized by the appropriate approval authority; and
- b) the regulated setback, vegetated shoreline, stormwater management, and slope related policies of this Plan are met and the proposal is not for major development.

2.3 Town of Niagara-on-the-Lake Official Plan

The majority of the Subject Property is designated as Prestige Industrial, with a small portion of the property as Light Industrial, and the lands adjacent to Six Mile Creek designated as Conservation. Policies related to the management of Conservation Lands and Wetlands are outlined in Section 16 of the Town of Niagara-on-the-Lake Official Plan (Town of Niagara-on-the-Lake 2004). The Conservation/Wetland designation applies to lands considered environmentally significant or where lands are considered unsuitable for buildings purposes and require special attention to avoid loss of life and property damage. Features included within this designation are Provincially Significant Wetlands,

flood prone and shoreline erosion areas, Areas of Natural and Scientific Interest, woodlots and fish habitats.

The goals and objectives of policies in Section 16 are:

- (1) To protect wetlands from incompatible activities.
- (2) To encourage the retention of woodlots and the reforestation of low capability farmland.
- (3) To protect areas of natural and scientific interest.
- (4) To control development within the 100 year erosion limit of Lake Ontario.
- (5) To petition the senior levels of government for physical and financial assistance in stabilizing the Lake Ontario shoreline.
- (6) To increase public access to the Niagara River and Lake Ontario and to prevent damage to the shoreline.
- (7) To delineate and regulate development on all lands having inherent physical environmental hazards such as flood susceptibility, poor drainage or other physical conditions which act as a constraint to development in order to prevent loss of life and to minimize property damage and social disruption.
- (8) To preserve and enhance the amenities and natural resources offered by waterways, wetlands and natural areas in the Town.
- (9) To preserve and protect provincially significant wetlands in accordance with provincial policy statements.

From our review of Schedule B of the Official Plan, the northeast portion of the Subject Property adjacent to Six Mile Creek has been designated as Conservation.

2.4 Niagara Peninsula` Conservation Authority

The Niagara Peninsula Conservation Authority (NPCA) is responsible for the administration of Ontario Regulation 155/06, which provides the NPCA jurisdiction to regulate development activities within and adjacent to flood and erosion hazards, valleys, watercourses and wetlands. The guiding principle of this regulation is to ensure any development work proposed within regulated areas will have no adverse impact on flooding, erosion, pollution, dynamic beaches and the conservation of land.

In order to administer Ontario Regulation 155/06, the Niagara Peninsula Conservation Authority (NPCA) has recently created a document titled Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority (NPCA 2022). The purpose of the document is to provide guidance for development applications that are located in and adjacent to regulated areas.

Regulated features on and adjacent to the property include the east branch of Six Mile Creek and the associated valley, as well as a small tributary to Six Mile Creek. NPCA policies related to the management of watercourses are contained in Section 9 of the policy document. This section states that in general interference with a watercourse is not permitted, except in accordance with the policies included in the policy NPCA document.

Section 9.2.5 contains policies related to watercourse buffer composition and indicates that where development and site alterations are proposed adjacent to a watercourse, the NPCA shall require the establishment of a natural buffer in accordance with the following requirements:

- a) A 30-metre buffer shall be provided where the watercourse contains permanent flow, cool water or coldwater systems or specialized aquatic or riparian habitat (such as but not limited to fish spawning areas, habitat of species at risk or species of concern, forested riparian areas or Type 1 Critical Fish Habitat). Notwithstanding this requirement, the buffer may be reduced where supported by an EIS in accordance with the NPCA Procedural Manual, but in no case shall the buffer be reduced below 15 metres.
- b) A 15-metre buffer shall be provided for watercourses containing intermittent flow, warmwater systems or general/impacts aquatic or riparian habitat, or Type 2 Important Fish Habitat or Type 3 Marginal Fish Habitat. Notwithstanding this requirement, the buffer may be reduced where supported by an EIS in accordance with the NPCA Procedural Manual.

Policies related to the management of valleylands are included in section 5.2, with policies related to development on the valley wall included in section 5.2.4. Section 5.2.4.d states that new structures associated with erosion control, passive recreation, stairs, are subject to the following policies:

- i. There are no negative impacts on ecological functions.
- ii. A geotechnical study may be required to be completed by a qualified professional to determine the risk of the proposed work. The study will include an assessment of the stability of the valley wall, rate of erosion or recession of the valley wall, access issues and an assessment of the construction technique on the valley wall. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life or property damage is anticipated.
- iii. There is no change in land use and no increase in the number of dwelling units.
- iv. A re-vegetation plan is submitted for review and approval by the NPCA demonstrating there is no net loss of natural vegetation.
- v. Fill placement and site alteration is limited to only what is necessary to erect approved structures or to provide suitable material for plantings.

3.0 STUDY APPROACH

3.1 Background Review

Before the commencement of primary field inventories, a site visit and the review of background material available for the Subject Property and the surrounding area were conducted. Some of the background information reviewed included:

- ◆ Niagara Region Official Plan (2022);
- ◆ Town of Niagara-on-the-Lake Official Plan (2017);
- ◆ Data available from the Natural Heritage Information Center (NHIC);
- ◆ Background data available from the NPCA and Ministry of Natural Resources and Forestry (MNRF);
- ◆ Niagara Natural Areas Inventory (NPCA 2010);
- ◆ Ontario Reptile and Amphibian Atlas, 2009-2019 (Ontario Nature 2023);
- ◆ Ontario Breeding Bird Atlas (OBBN); and
- ◆ Recent and historical aerial photographic imagery.

3.2 Field Inventories

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

- a) Two-season botanical inventory of the property;
- b) Ecological Land Classification description and mapping of the Subject Property;
- c) Breeding bird surveys on and adjacent to the property;
- d) Amphibian vocalization surveys;
- e) Active hand searches for reptiles and amphibians and visual assessments of the pond to determine potential use by turtles;
- f) An assessment of the watercourse feature on the north end of the property; and
- g) Document incidental wildlife observations during site visits, including any species of insects that may be considered locally rare or species at risk.

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 Property were conducted on July 15 and October 18 2020, with subsequent botanical assessments completed on October 24, 2022 and August 17, 2023. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described, and a list of botanical species was compiled. Species status was assessed for Ontario (Oldham and Brinker 2009) and Niagara Region (Oldham 2010).

Vegetation communities are described below and illustrated in Figure 3.

4.1.1 Botanical Inventories

One-hundred fifteen (115) plant species were documented on the property during our inventories. One provincially rare species, Pawpaw (S3), was observed along the northeastern edge of the Subject Property within the Six Mile Creek floodplain. Three locally uncommon species (Black Maple, Moonseed and Slippery Elm) were documented on the Subject Property. The Black Maple and Moonseed can be found along the Six Mile Creek Floodplain, while two Slippery Elm trees can be found in the woodland to the west of the Pawpaws. A vascular plant checklist is provided in Appendix B.

4.1.2 Vegetation Communities

A majority of the tablelands on the Subject Property consists of former orchards and agricultural lands that have succeeded to mix of meadow, thicket and woodland. Deciduous forest and valleylands associated with the Six Mile Creek also occur on and adjacent to the Subject Property. Further description of vegetation communities on the property are provided below and illustrated in Figure 3. Photos illustrating the vegetation conditions on the property are provided in Appendix C.

Gray Dogwood Cultural Thicket Type (CUT1-4)

The largest vegetation community on the property consists of an open deciduous shrub thicket and meadow. Vegetation in these areas consisted of a mix of non-native, cool season grasses and Tall Goldenrod that co-dominates the abandoned agricultural fields, forming approximately 60-100% vegetation coverage. Hairy Aster, New England Aster, Panicked Aster and Grass-leaved Goldenrod are also abundant in the open meadow areas. In the thicketed areas the sub-canopy forms between 25-60% cover and consists of Gray Dogwood, Common Buckthorn and Hawthorn species. Also occurring occasionally are thickets of Staghorn Sumac, Riverbank Grape and Multiflora Rose. A number of young trees and saplings of Pin Oak, Ash, Black Walnut and Staghorn Sumac are also scattered throughout the Gray Dogwood Thicket and meadow openings. From west to east, the Cultural Thicket becomes more closed and covered with woody vegetation supporting less meadow openings and grades into an opened to closed canopy woodland.

Buckthorn Deciduous Hedgerow Thicket Ecosite (THDM3-1)

A dense and tall monoculture of Common Buckthorn forms a smaller shrub thicket on the north end of the property. This community bisects the two CUT1-4 communities on the property.

Naturalized Deciduous Hedge-row Ecosite (FODM11) / Naturalized Deciduous Plantation (FODM12)

A linear north-south treed hedgerow occurs on the central and southern portions of the property. A number of deciduous and a few conifer species were planted in rows forming a wide treed hedgerow / plantation along the southern section. The northern section is mostly composed of successional woody species such as Hawthorns, Ash, Cottonwood, Common Apple, Pear, Bird Cherry and Black Cherry which have naturalized along the treed hedgerow. Planted species include Silver Maple, Tall Serviceberry, Trembling Aspen, Carolina Poplar, Black Locust, Red Oak, Bur Oak, Austrian Pine, White Pine, Larch, Blue Spruce, Norway Spruce and White Spruce. Shrub cover is sparse in this hedgerow and ground covers are similar to the adjacent thicket and meadow.

Buckthorn Deciduous Shrub Thicket Type (THDM2-6) / Fresh – Moist Deciduous Woodland Ecosite (WODM5)

This vegetation community supports a number of Pin Oak trees forming up to 20% tree cover on abandoned fruit orchards. Younger Pin Oak trees (2-10m in height), along with some Ash species, Black Walnut and thickets of Staghorn Sumac occur in the canopy ranging between 10-40% cover. In the dense understory layer (forming greater than 60% cover) are shrubs of Gray Dogwood, Common Buckthorn and Hawthorn species, along with Staghorn Sumac, Riverbank Grape and Multiflora Rose occurring to a lesser extent. Non-native, cool season grasses and Tall Goldenrod co-dominate the ground layer along with an abundance of Hairy Aster, New England Aster, Panicked Aster and Grass-leaved Goldenrod forming 25-60% vegetation cover. In some areas the ground layer is sparse and heavily shaded by woody vegetation, while other areas are interspersed with numerous meadow openings and almost completely vegetated with grasses and forbs.

Pin Oak Mineral Deciduous Swamp Type (SWD1-3) Inclusion

Located within the woodland and thicket is a small lowland inclusion. This former orchard currently supports large Pin Oak trees (25-50cm dbh), along with a few Red/Green Ash. The sub-canopy layer supports tall (2-10m in height) shrubs of Common Buckthorn and Downy Hawthorn, young trees of Red/Green Ash, and tangles of Riverbank Grape vines forming greater than 60% vegetation cover. The understory layer (25-60% cover) is dominated by Gray Dogwood and Common Buckthorn with an abundance of Red/Green Ash saplings and vines of Riverbank Grape. The ground layer supports a vegetation cover greater than 60% with an abundance of Fowl Manna Grass, Panicked Aster, White Avens, Jumpseed, Mosses, Poison Ivy and Reed Canary Grass.

Reed-canary Grass Mineral Meadow Marsh (MAM2-2) Inclusion

The north edge of the forested swamp grades into an open Reed Canary Grass Meadow Marsh inclusion located between the treed swamp and dugout pond. This community is dominated by Reed Canarygrass. The dugout pond is defined by steep banks and supports open water and a fringe of Common Reed, and Narrow-leaved Cattail to a lesser extent along the waterline.

Deciduous Forest Complex (FOD2-2, FOD5-5, FOD6-2 & FOD7-5)

A very mature forest complex occurs along the top of bank, valley slope and floodplain of the Six Mile Creek, which is located in the northeast corner of the Subject Lands and runs along the entirety of the eastern edge of the property. Along the rim and upper valley slopes is very tall and mature Dry – Fresh Oak – Hickory Deciduous Forest (FOD2-2). Large diameter Bitternut Hickory, Shagbark Hickory, Sugar Maple, Hop Hornbeam and Red Oak trees are abundant in the canopy.

The Lower valley slopes support mature Dry – Fresh Sugar Maple – Hickory Deciduous Forest (FOD5-5), which is dominated by Sugar Maple and Shagbark Hickory. This community then grades into a rich



Legend

- Subject Property
- Watercourse
- Wc1** Watercourse Number
- Pawpaw
- Slippery Elm
- Amphibian Monitoring Station
- FODM11/ FODM12** Naturalized Deciduous Hedge-row Ecosite/
Naturalized Deciduous Plantation
- CUT1-4** Gray Dogwood Cultural Thicket Type
- THDM3-1** Buckthorn Deciduous Hedgerow Thicket Ecosite
- THDM2-6** Buckthorn Deciduous Shrub Thicket Type
- SWD1-3** Pin Oak Mineral Deciduous Swamp Type
- WODM5** Moist Deciduous Woodland Ecosite
- MAM2-2** Reed-canary Grass Mineral Meadow Marsh
- FOD2-2** Dry - Fresh Oak - Hickory Deciduous Forest Type
- FOD5-5** Dry - Fresh Sugar Maple - Hickory Deciduous Forest Type
- FOD6-2** Fresh - Moist Sugar Maple - Black Maple Deciduous Forest Type
- FOD7-5** Fresh - Moist Black Maple Lowland Deciduous Forest Type

Figure 3
Extent of Vegetation Communities
on the Subject Property

Environmental Impact Study for
353 Townline Road

Prepared for: **Kaneff Group**

Prepared by: **COLVILLE CONSULTING INC.**

DATE: January 2024

FILE: C20034

Fresh – Moist Sugar Maple – Black Maple Deciduous Forest (FOD6-2), which are located along the toe of the valley slope, on historic floodplain terraces, and bottomlands of the Six Mile Creek.

On the active floodplain of the Six Mile Creek is a Fresh – Moist Black Maple Lowland Deciduous Forest (FOD7-5). Black Maple dominates the canopy, sub-canopy and understory layers within the riparian zone along terraces above the numerous meanders and oxbows of the Six Mile Creek. The ground layer of the floodplain forest supports the native Brome grass species as well as the locally uncommon Moonseed Vine. Along the top bank of the Six Mile Creek, extending inland towards the foot of the valley slope, is a Pawpaw grove. The grove consists of approximately 60-80 stems ranging from 1cm dbh saplings to small trees (~3m tall) growing below a canopy of a mature Pawpaw, Black Maple, Sugar Maple and Butternut Hickory. The Pawpaw grove location is illustrated on Figure 3.

4.2 Wildlife and Wildlife Habitat

4.2.1 Breeding Bird Survey

Breeding bird surveys were conducted on June 13 and June 29, 2020, to inventory breeding birds on and adjacent to the Subject Property. Surveys were completed at least 15 days apart, under suitable weather conditions with little to no wind or precipitation. A thorough search of the Subject Property was completed during both surveys between dawn and no later than 10:00 am. All birds seen or heard calling were recorded and the highest breeding evidence per species was determined in accordance with the criteria of the Atlas of the Breeding Birds of Ontario (Cadman et al. 2007).

A total of 31 species of birds were observed or heard on or above the Subject Property and 1 additional species on adjacent lands. According to Ontario conservation status ranks (S-rank) designations, except for 4 non-native species, all other recorded species are considered to be “secure” (S5 - common, widespread and abundant) or “apparently secure” (S4 - uncommon but not rare) in the province of Ontario. The recorded species are also considered to be very common to common permanent or summer residents in the Niagara Region except for the uncommon summer resident Brown Thrasher, Field Sparrow, Willow Flycatcher, and uncommon permanent resident; Red-bellied Woodpecker (Niagara Natural Areas Inventory, 2010).

The Barn Swallows observed flying and calling over the Subject Property on the second site visits are listed as Special Concern in Ontario and Canada.

Below is a table summarizing the bird species heard and/or seen on or adjacent to the Subject Property during both site visits.

Table 1. List of bird species documented on and adjacent to the Subject Property.

Species	S Rank	Niagara Status*	Subject Property Woodland	Subject Property Thicket/Meadow	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
American Goldfinch	S5B	C R	X	X		PR	D
American Robin	S5B	VC R	X	X	X	PR	A
American Woodcock	S4B	U R	X	X		PO	H
Baltimore Oriole	S4B	C R	X	X		PO	S
Barn Swallow	S4B	VC R	X			OBS	X
Black-capped Chickadee	S5	C P	X	X		PO	S
Blue Jay	S5	VC P	X			CO	FY
Brown-headed Cowbird	S4B	VC R	X	X		PO	S
Brown Thrasher	S4B	U R	X			PO	S
Cedar Waxwing	S5B	C R	X	X		PO	H
Common Grackle	S5B	VC R	X	X		CO	FY
Common Yellowthroat	S5B	C R	X			PO	S
Cooper's Hawk	S4	U R	X		X	PR	A
Downy Woodpecker	S5	C P		X		PO	S
European Starling	SNA	VC P	X	X		CO	FY
Field Sparrow	S4B	U R	X	X		CO	FY
Gray Catbird	S4B	C R	X	X	X	PR	A
Great Crested Flycatcher	S4B	C R			X	PO	S
House Finch	SNA	C P	X			PO	S
House Sparrow	SNA	VC P	X	X	X	PO	S
Killdeer	S5B,S5N	C R	X	X	X	PO	S
Mourning Dove	S5	VC R	X	X		PR	P
Northern Cardinal	S5	C P	X	X		CO	FY
Northern Flicker	S4B	C R		X		PO	H
Red-bellied Woodpecker	S4	U P	X			PO	S
Red-winged Blackbird	S4	VC R	X	X		PR	A
Ring-billed Gull	S5B,S4N	VC R	X			OBS	X
Rock Dove	SNA	VC P		X		OBS	X
Song Sparrow	S5B	VC R	X	X		CO	FY
Tree Swallow	S4B	VC R		X		PO	S
Willow Flycatcher	S5B	U R		X		PO	S
Yellow Warbler	S5B	C R	X	X		PR	A

* VC – very common; C – common; U – uncommon; UR – Uncommon to rare; O – Occasional; R – Rare

P – permanent resident; R – summer resident; S – Straggler; DD-Data Deficient (Niagara Natural Areas Inventory, 2010)

** OBS – observed, no evidence of breeding; PO – possible breeding; PR – probable breeding; CO - confirmed breeding

*** X – observed in its breeding season, no evidence of breeding

H – species observed in its breeding season in suitable nesting habitat

S – singing male present in its breeding season in suitable nesting habitat

P – pair observed in their breeding season in suitable nesting habitat

A – agitated behavior or anxiety calls of an adult

D – courting or display between a male and female or two males

N – nest building or excavation of nest hole

T – permanent territory presumed through registration of territorial song or presence of adult bird in breeding habitat on at least 2 days, one week or more apart at the same place
 DD- distraction display or feigning injury
 AE – Adults leaving or entering nest site in circumstances indicating occupied nest
 FS – adult carrying fecal sac
 FY – recently fledged young
 CF – adult carrying food for young
 NE – nest containing eggs
 NY – nest with young

4.2.2 Amphibian Call Surveys

Amphibian call surveys were conducted on April 8, May 20, and June 18, 2020. Two survey locations were established to assess amphibian use of the property, with one station established to assess use of the wetland and pond on the southern portion of the property and a second station established to assess potential use of the Phragmites marsh on the northern portion of the property. Stations were surveyed for a period of three minutes, between one half-hour after sunset, and midnight. All species of calling amphibians were recorded along with a calling code (0 – no calling; 1- calls not overlapping, can be discretely counted; 2 – calls overlapping, but numbers of individuals can still be estimated; 3 – full chorus, numbers of individuals cannot be estimated), along with an estimate of the number of individual amphibians where possible.

The amphibian survey conducted on April 8, 2020 commenced at approximately 21:40. Air temperature during the April 8, 2020 survey was 10°C, with clear skies and light winds. The May 20, 2020 visit began at approximately 23:20, while the air temperature was 15°C, winds were light and skies were clear. The final amphibian survey was completed on June 18, 2020, beginning at approximately 23:10. The air temperature was 18°C with little wind during the survey.

Table 2: Results of amphibian call survey

		Western Chorus Frog	Grey Treefrog	American Toad	Green Frog
Station 1	April 8, 2020	1-4	1-1	-	-
	May 20, 2020	-	-	-	-
	June 18, 2020	-	-	-	1-1
Station 2	April 8, 2020	1-2	-	-	-
	May 20, 2020	-	-	1-1	-
	June 18, 2020	-	-	-	-

*Numbers in cells represent (calling code – estimated numbers).

4.2.3 Incidental Wildlife Observations

During the summer, the Little Brown Myotis, Northern Myotis and Tri-colored 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 November 2, 2022 using methods described in MNRF (2017). Based on the results of this assessment, no significant potential roost trees were identified within the woodland and thicket portions of the property, primarily due to the young age and small diameter of most trees. Potential roost trees were identified within the forest communities, however not assessment of use is warranted as these trees will not be impacted by future land uses.

4.2.4 Incidental Wildlife Observations

Wildlife observations were conducted during each site visit, as well as on April 9, May 6, June 1, June 15, July 20 and September, 28, 2020. More recent wildlife observations during site visits were also conducted on October 24, October 28 and November 2, 2022, and August 18, 2023. Observations of wildlife not documented in other sections of this report were limited to Eastern Cottontail, Grey Squirrel, Raccoon, Red Squirrel and track or evidence of White-tailed Deer and Coyote.

4.3 Aquatic Habitat Assessment

As illustrated on Figure 2, two watercourses and a man-made pond are located on the Subject Property. For ease of description, these watercourses have been assigned numerical identifiers, which are illustrated in Figure 3.

Watercourse 1

Watercourse 1 (WC1) is located on the northwestern portion of the Subject Property. This watercourse is a tributary to Six Mile Creek and conveys water from the constructed drainage channels south of the property north to Queenston Road. A review of historical air photos suggests that this watercourse was excavated and re-aligned as part of the former agricultural operation on the Subject Property. The channel of this watercourse on the property is approximately 1m in width and approximately 30cm deep. Flow in this watercourse is ephemeral and associated primarily with snow melt and major precipitation events. This watercourse dries completely in the summer and does not appear to be providing any direct fish habitat function.

Watercourse 2 (Six Mile Creek)

The main channel of Six Mile Creek meanders through the northwestern corner of the Subject Property. The channel of Six Mile Creek on the property averages approximately 6m in width and is well entrenched in the valley and floodplain. Flow in this watercourse is generally intermittent, however refuge pools appear to provide permanent water in the creek. No primary fish sampling was completed as part of this project, however Six Mile Creek is known to support several warmwater fish species.

Constructed Pond

As mentioned above, an isolated constructed pond is located near the southwestern portion of the Subject Lands. This man-made pond is rectangular in shape and is approximately 0.11 hectares in size. Submerged vegetation was not observed in the pond, however emergent species in and around the perimeter of the pond includes Cut-leaved Water-horehound, Common Reed, Ashy, White and Sandbar Willow, Soft-stem Bulrush and Narrow-leaved Cattail. This pond appears to receive water from a

relatively small catchment area and contains water permanently. This pond is not connected to a surface watercourse and is not considered to provide fish habitat per the Fisheries Act.

5.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1 Species at Risk

5.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered or Threatened species were observed during our assessment of the property.

As part of our assessment of this property we completed a search of background information available from the Natural Heritage Information Center (NHIC), as well as completed a species at risk screening based on species known to occur in the Town of Niagara-on-the-Lake (see Appendix E). Based on site conditions on the Subject Property, suitable habitat for Red-headed Woodpecker and Acadian Flycatcher is present on the property within the forested valleylands. None of these bird species were detected during our surveys and therefore these species do not appear to be using the property regularly.

Although potential habitat for Little Brown Bat and Northern Myotis is present in the woodland, no impact to potential roost trees will occur as a result of this development and therefore surveys were not conducted to verify use by these species.

Data available from the Natural Heritage Information Center (NHIC) indicates that Endangered and Threatened species known to occur in the vicinity of the Subject Property are limited to Cucumber Tree (Appendix D). Based on our assessments, the property is not providing habitat for Cucumber Tree.

5.1.2 Other Potential Species of Conservation Concern

One species of Special Concern, Barn Swallow, was documented on the property during our survey work. A single Barn Swallow was observed flying and calling over the woodland adjacent to Six Mile Creek. There are no structures suitable for nesting on the Subject Property, however it is possible that outbuildings or structures on adjacent properties could be providing nesting opportunities for this species. Based on these observations, it is not likely that Barn Swallows are nesting on the Subject Property.

Although not documented during breeding bird surveys, it is possible that the forested valley is providing potential habitat for Eastern Wood-pewee and Wood Thrush. As these species were not documented on the property, it is not likely that the property is providing significant habitat for these species.

One provincially rare species (Pawpaw) was documented within the FOD6-2/FOD7-5 community in the northeastern corner of the property. This species is represented by a large and mature individual, as well as several dozen saplings located in close proximity to the parent tree. Due to proximity of these trees to the proposed development, no Pawpaw trees will be impacted by this project.

5.2 Significant Wildlife Habitat

The SWH Criteria Schedule for Ecoregion 7E (OMNRF 2015) identifies four main types of significant wildlife habitat (SWH): seasonal concentrations areas, rare vegetation communities, specialized wildlife habitats, and habitats of Species of Conservation Concern. These are discussed below in relation to the natural features on the property and a summary is provided in Appendix F.

5.2.1 Seasonal Concentration Areas

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identify 14 types of seasonal concentrations of animals that may be considered significant wildlife habitats. These include, but are not limited to:

- Waterfowl Stopover and Staging Areas (Aquatic and Terrestrial);
- Shorebird Migratory Stopover Area;
- Raptor Wintering Area;
- Bat Hibernacula;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernaculum;
- Colonially -Nesting Bird Breeding Habitat (Bank and Cliff);
- Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs);
- Colonially -Nesting Bird Breeding Habitat (Ground);
- Migratory Butterfly Stopover Areas;
- Landbird Migratory Stopover Areas; and
- Deer Winter Congregation Areas.

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

No wildlife use consistent with seasonal concentrations were documented during our observations of the property. Although no detailed surveys were completed, it is possible that isolated trees within the woodland are providing potential maternal roost habitat for bats. The Treed Hedgerow, FODM12 and THDM2-6/WODM5 communities were surveyed to document any cavity trees in these areas. No cavity trees were observed. Since no trees from the FOD woodland community will be impacted by development on the property, no impact to potential maternal roost habitat will occur as a result of this project.

5.2.2 Rare Vegetation Communities

Rare vegetation communities often contain rare species, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. Those areas that qualify as rare habitats are assigned an SRank of S1, S2 or S3 by the Natural Heritage Information Center (NHIC).

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identify seven specialized habitats that may be considered significant wildlife habitats. They are:

- Cliffs and Talus Slopes;
- Sand Barren;
- Alvar;
- Old Growth Forest;
- Savannah;
- Tallgrass Prairie; and
- Other Rare Vegetation Communities.

No rare vegetation communities are located on or adjacent to the Subject Property.

5.2.3 Specialized Habitats of Wildlife considered SWH

Some wildlife species require specialized habitat types for their long-term survival and many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations are at risk of decline when their habitat becomes fragmented or reduced in size.

Specialized habitats for wildlife include:

- Waterfowl Nesting Area;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;
- Woodland Raptor Nesting Habitat;
- Turtle Nesting Areas;
- Seeps and Springs;
- Amphibian Breeding Habitat (Woodland);
- Amphibian Breeding Habitat (Wetlands); and
- Woodland Area-Sensitive Bird Breeding Habitat.

Two wetland communities were surveyed as part of this project to determine amphibian use. Based on our assessments, the number of amphibians heard calling from the areas is not consistent with criteria to be considered significant wildlife habitat.

It is therefore our conclusion that no portion of the property is providing specialized habitat for wildlife.

5.2.4 Habitats of Species of Conservation Concern considered SWH

Habitat of Species of Conservation Concern includes 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. The following habitats are considered candidate SWH:

- Marsh Breeding Bird Habitat;
- Open Country Bird Breeding Habitat;
- Shrub/Early Successional Bird Breeding Habitat;
- Terrestrial Crayfish; and
- Special Concern and Rare Wildlife Species.

As discussed above, one provincially rare tree species (Pawpaw) was noted on the property in the Six Mile Creek Valley. It is therefore our assessment that the valley floor in the woodland is providing significant habitat for Pawpaw trees.

5.2.5 Animal Movement 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 habitats, these corridors should be a critical link between habitats that are regularly used by wildlife.

Based on our review of background mapping, it appears that the portion of the Subject Property associated with Six Mile Creek is acting as a movement corridor. Due to the nature of the remainder of the Subject Property and adjacent lands, no other portions of the property are considered to form part of this corridor. Also, based on the proposed site plan, development on the Subject Property will have no impact on this movement corridor.

5.3 Significant Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interest are located on or adjacent to the Subject Property.

5.4 Significant and Other Wetlands

No significant wetlands are located on or adjacent to the property.

During our assessments, a small wetland vegetation community (SWD1-3) was identified on the southern portion of the property. This wetland pocket measures approximately 0.2 hectares in size and is dominated by Pin Oak trees. This wetland appears to have formed as a result of site alterations on the property, since this area was formerly fruit orchard. Our observation indicate that surface water is currently retained seasonally in low areas of the wetland, with the vernal pools drying by late-spring or early-summer. No surface runoff has been observed from this wetland and no watercourses are located in close proximity.

For the purposes of this assessment, this wetland community is considered to be an Other Wetland, as defined in the Niagara Region Official Plan. Based on our assessments, this wetland feature is too small and low functioning to be considered for evaluation using the Ontario Wetland Evaluation System. This wetland is also too small and hydrologically isolated to be subject to policies of the NPCA.

As illustrated in Figure 2, an Other Wetland has also been identified within the Six Mile Creek valley. Our assessment indicates that no wetland vegetation communities occur in this area, and as a result, no portion of the valley is considered to contain an Other Wetland.

5.5 Significant Woodlands

As illustrated in Figure 2, a portion of the Subject Property has been designated as Significant Woodland by the Niagara Region. To be designated as significant, Schedule L of the Niagara Region Official Plan states that a woodland must meet the Ecological Land Classification definition of a forest (i.e. 60% or greater canopy cover) and meet one or more of the following criteria:

- a) Two hectares or greater in size;
- b) One hectare or greater in size meeting at least one of the following criteria:
 - i. Naturally occurring (i.e, not planted) trees
 - ii. Treed areas planted with the intention of restoring woodland;
 - iii. 10 or more trees per hectare greater than 100 years old or 50 cm or more in diameter;
 - iv. Wholly or partially within 30m of a provincially significant wetland or habitat of an endangered or threatened species;
 - v. Overlapping or abutting one or more of the following features: permanent streams or intermittent streams, fish habitat and/or significant valleylands;
- c) 0.5 hectares or greater in size meeting at least one of the following criteria:
 - i. A provincially rare treed vegetation community with an S1, S2 or S3 in its ranking by the MNRF's N.H.I.C;
 - ii. Habitat of a woodland plant species with an S1, S2 or S3 in its ranking or an 8, 9, or 10 in its Southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 or more sqm of leaf coverage;
 - iii. Any woodland overlapping or abutting one or more of the following features: significant wildlife habitat, habitat of threatened species and endangered species and/or non-provincially significant wetlands
- d) Any size overlapping or abutting one or more of the following features:
 - i. Provincially significant wetland; and
 - ii. Life science area of natural and scientific interest (ANSI)

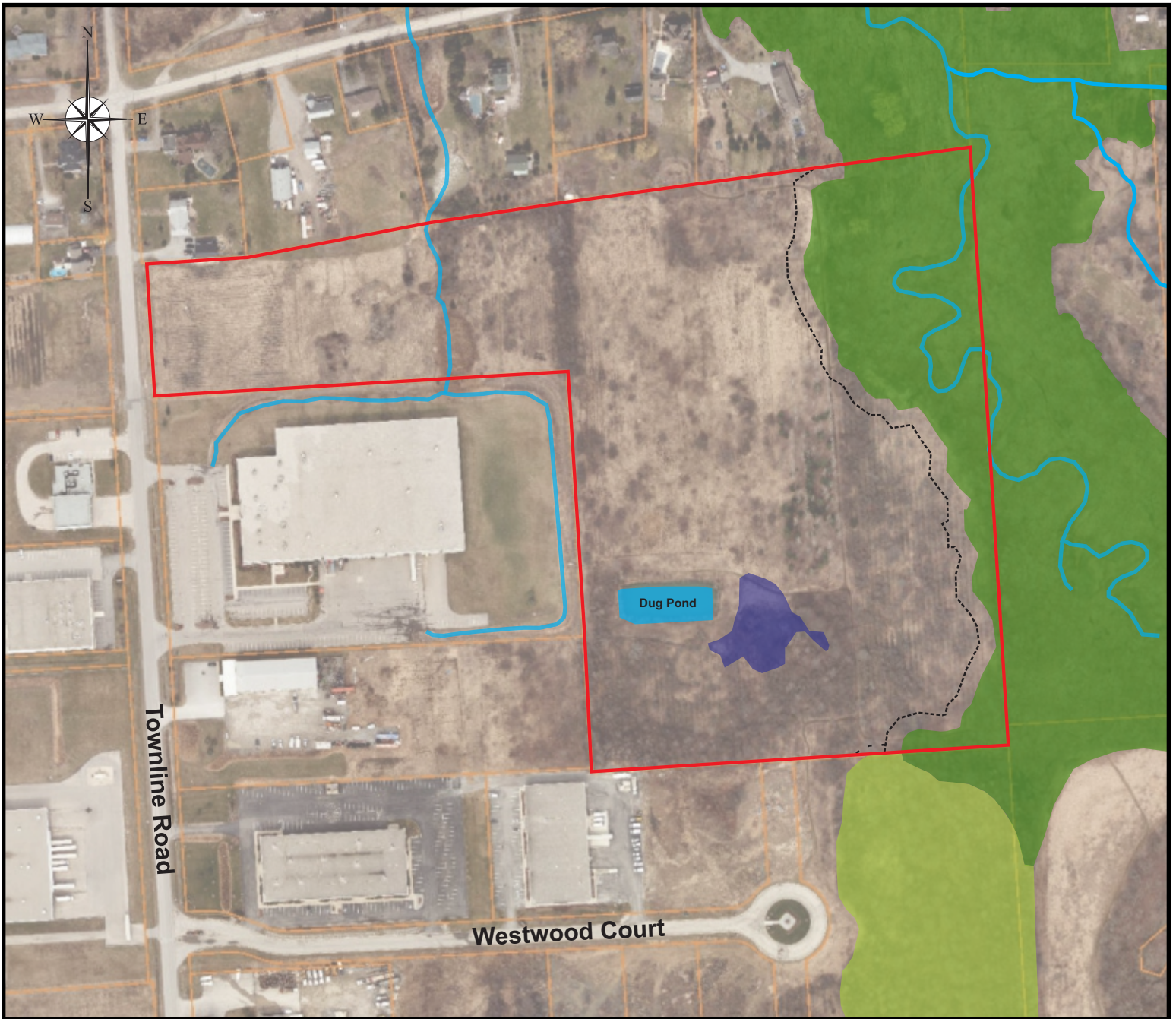
From our surveys and assessments, the FOD6-2/FOD7-5 and FOD2-2/FOD5-5 communities on and adjacent to the property (see Figure 3) satisfies the canopy cover criteria, as well as size, naturally occurring trees, older growth, proximity to valleylands, rare plant species and proximity to significant wildlife habitat criteria listed above (See Table 4 below).

Table 3: Assessment of Significant Woodland criteria

Criteria	Representation on Property	Criteria Met
Size	The woodland on and adjacent to the Subject Property forms part a larger woodland that is greater than 2 hectares in size	Criteria Satisfied
Naturally occurring trees	Woodland on the property is comprised of naturally occurring trees.	Criteria Satisfied
Planted to restore woodland	No portion of the property appears to have been planted with the intention of restoring woodland	Criteria not Satisfied
Older Growth	This woodland has occurred on the landscape for over 100 years and could constitute older growth.	Criteria Satisfied
Proximity to PSW or Endangered or Threatened Species	Woodland not located near a provincially significant wetland or a species considered Threatened or Endangered.	Criteria not Satisfied
Proximity to water or valleylands	Woodland primarily located within a valley.	Criteria Satisfied
Rare vegetation communities	The woodland does not contain any rare vegetation communities.	Criteria not Satisfied
Rare plant species	Pawpaw grove observed near the northeastern edge of the property beside the Six Mile Creek	Criteria Satisfied
Proximity to other natural heritage features	Woodland is considered to be providing potential significant wildlife habitat (potential bat roosting habitat)	Criteria Satisfied
Proximity to PSW or ANSI	Woodland not located near a provincially significant wetland or Area of Natural and Scientific Interest	Criteria not Satisfied

Unlike the FOD woodland communities described above, the THDM2/WODM5 communities found along the southern portion of the Subject Property do not satisfy the canopy cover criteria to be considered Significant Woodland. Within these communities, there are some small pockets exceeding 35-60% canopy coverage, but most of these lands are less than 25% canopy coverage.

As for the Treed Hedgerow (FODM12 community), this ELC pocket also does not constitute a woodland. Section 7.3.2 of the Natural Heritage Reference Manual (MNRF 2005) provides guidance on delineating the extent of woodland patches. Because of their limited ecological functions, hedgerows less than 40m in average width are often excluded from the delineation of woodland. As the hedgerow on this property averages less than 40m in width and is distinct from the forest communities in the valley, this hedgerow has been excluded from the refined extent of the significant woodland on the property.



Legend

- Subject Property
- Watercourses
- Significant Woodland
- 10m Setback from Significant Woodland
- Other Woodland
- 5m Setback from Other Woodland
- Other Wetland

Figure 4
Refined Extent of Natural Heritage
Features on the Subject Property

Environmental Impact Study
353 Townline Road

Prepared for: **Kaneff Group**

Prepared by: **COLVILLE** 
 CONSULTING INC.

DATE: January 2024

FILE: C22064

5.6 Other Woodlands

The Niagara Region Official Plan defines other woodlands as woodlands determined to be ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. Other woodlands include all terrestrial treed vegetation communities where the percent tree cover is >25 per cent. Other woodlands would not include woodlands meeting the criteria as significant woodlands.

To be identified as an other woodland, a terrestrial treed area must have ≥ 25 per cent tree cover and meet one or more of the following criteria:

- a) an average minimum width of 40 m and is ≥ 0.3 ha, measured to crown edges; or
- b) any size abutting a significant woodland, wetland or permanent stream.

Treed areas that “abut” a significant woodland, wetland or permanent stream are considered adjacent when located within 20 m of each other.

Due to the canopy cover in the thicket and woodland communities on the south end of the property, none of these areas are considered to meet the criteria to be considered other woodland.

As illustrated in Figure 3, a mowed woodland is located south of the Subject Property and east of the proposed road extension from Westwood Court. This woodland community contains more than 25% canopy cover and is considered other woodland for the purposes of this assessment. The refined extent of other woodlands are illustrated in Figure 4.

6.0 POTENTIAL ECOLOGICAL IMPACTS

Currently proposed development on this property consists of an industrial subdivision, consisting of four blocks intended for light industrial uses, as well as a stormwater management block. A road extension north of Westwood Court is also proposed to service development blocks on this property. For the purposes of this assessment, conceptual building envelopes have been established on each of the development blocks, with details of development in each block to be refined as part of future applications. The proposed concept plan is provided in Appendix A and Figure 5.

6.1 Significant Habitat of Endangered and Threatened Species

No Endangered or Threatened Species were observed during our assessment of the property. It is possible that bat species may be using trees in the valley as roosting habitat, however no impact to these trees will occur as a result of this project.

Based on our assessment, no portion of the proposed subdivision will impact significant habitat of Endangered or Threatened species.

6.2 Species of Special Concern

Two Species of Special or Conservation Concern (Pawpaw and Barn Swallow) were documented on and adjacent to the property during our survey work.

As discussed above, Barn Swallows were documented flying over and adjacent to the property. Since there are no suitable breeding habitat for Barn Swallows on the property, and any potential foraging is incidental and will continue after construction, the proposed development will not impact Barn Swallow use of the property.

Several Pawpaw trees were documented in the valley adjacent to Six Mile Creek. None of these trees will be impacted by development on the property and the development will not impact potential future dispersal of this species.

Based on the above, it is our assessment that the proposed development will not impact habitat of Species of Special or Conservation Concern.

6.3 Locally Rare and Uncommon Species

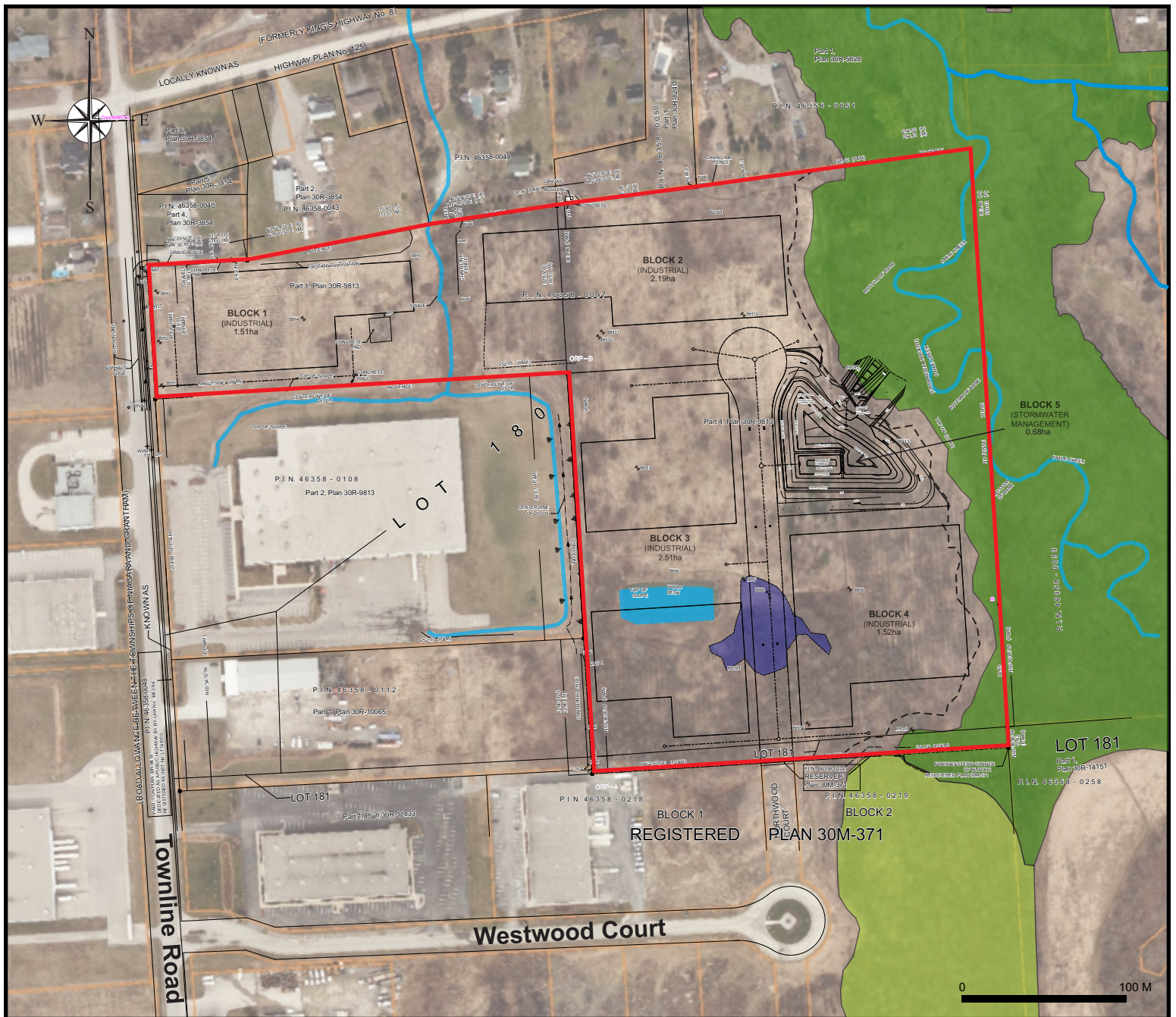
Locally rare plant species documented on the property were limited to Black Maple, Slipper Elm and Moonseed. These species are located in the valley and will not be impacted by future use of the property.

Several locally uncommon bird species (American Woodcock, Brown Thrasher, Cooper's Hawk, Field Sparrow, Willow Flycatcher, and Red-bellied Woodpecker) were documented on the property during inventories. All of these species (except the Willow Flycatcher) were documented in the significant woodland on the property, with American Woodcock, Field Sparrow and Willow Flycatcher also documented on or over the meadow and thicket portions of the property. As no impact to the forest will occur as a result of this project, the proposed development will not impact woodland habitat of these species. Similarly, although the proposed development will impact much of the thicketed portions of this property, American Woodcock, Field Sparrow and Willow Flycatcher are expected to continue to use available habitats on and adjacent to the property.

6.4 Significant Woodlands

As discussed above in section 5.5, the forest community associated with the Six Mile Creek valley satisfies the size, naturally occurring trees, older growth, proximity to valleylands, rare plant species and proximity to significant wildlife habitat criteria to be considered significant woodland. The refined extent of the significant woodland is illustrated in Figures 4 and 5.

This woodland was documented to be providing habitat for a variety of wildlife and botanical species. To protect the functions of this woodland, it is recommended that an average buffer of approximately 10m be considered when designing future development blocks and envelopes on the property. For illustration purposes, a 10m woodland buffer has been included in Figure 5, as well as conceptual development envelopes. It is recommended that the appropriateness of this 10m buffer be reassessed as part of site specific EIS's as necessary after detailed designs on each development block have been finalized.



Legend

- Subject Property
- Watercourse
- - - 10m Setback
- Significant Woodland
- Other Woodland
- Wetland Area

Figure 5
Refined Extent of Natural Heritage
Features on the Subject Property
with Site Plan Overlay

Environmental Impact Study for
353 Townline Road

Prepared for: **Kaneff Group**

Prepared by: **COLVILLE**
 CONSULTING INC.

DATE: January 2024

FILE: C22064

Also as illustrated in Figure 5, the outfall from the stormwater pond is proposed to be constructed on the valley slope and outlet to Six Mile Creek. It is anticipated that the construction of the outfall will require the removal of several trees, however limited tree removal in the vicinity of the outfall will not impact the overall function of the woodland.

Although tree removal will be required to facilitate construction, it is recommended that a tree preservation plan and be created to assist with retaining trees during construction and a restoration plan be created to replant trees and vegetation on the impacted portions of the slope.

6.5 Other Wetlands

As illustrated in figure 4, a small Pin Oak deciduous swamp and meadow marsh are located on the southern portion of the property. This wetland feature appears to have established on a former orchard and is the result of previous site alterations. The extent of the wetland communities have been refined as part of this project and collectively measure approximately 0.2ha in size.

Our observations indicate that this wetland is providing potential breeding habitat for two species of amphibians, however this wetland does not support any functions consistent with significant wildlife habitat.

As this wetland appears to be created by previous site alteration and is not providing any significant habitat functions, it is recommended that potential amphibian breeding habitat available in the wetland be recreated in other areas of the property, potentially within the valley floodplain or in suitable areas of the buffer adjacent to the woodland. Maintaining potential amphibian breeding habitat on the property will maintain the primary wetland habitat functions of the wetland.

It is also our assessment that this wetland occurs in hydrologic isolation and does not contribute surface flow to any watercourses on or adjacent to the property. It is anticipated that water currently retained in the wetland will be redirected to the stormwater management system, however this redirection of flow will not negatively impact any surface watercourse features in the area.

6.6 Watercourses

As illustrated in Figure 4, two watercourses are located on the property. As Six Mile Creek is located within the valley, no impact to this watercourse will occur as a result of this project.

Our assessment indicates that Watercourse 1 on the north end of the property is functioning as a stormwater conveyance channel, conveying water from industrial lands south of the property to Queenston Road. As this watercourse has little, if any, ecological functions, it is recommended that a buffer of 5m be maintained from this watercourse, however the extent of this buffer should be reassessed as needed following detailed design on blocks adjacent to the watercourse.

7.0 MITIGATION MEASURES

Based on our assessment, it is our expectation that the proposed development will have no impact on the ecological functions of the woodland on and adjacent to the property or negatively impact any significant natural heritage features in the area. To assist in avoiding any impacts associated with the proposed development, it is recommended that the following mitigation measures be implemented during final design and future 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 impacts to adjacent vegetation.
- Sediment and erosion controls should be inspected regularly to ensure proper function.
- A silt fence is recommended to be installed to reduce any offsite movement of silt and help prevent wildlife movement into work areas.
- The removal of trees and vegetation should be timed to minimize impacts on any wildlife species. It is recommended that tree removal be completed prior to April 1 or after October 31 to minimize impacts to bird and bat species that may be utilizing trees on the property.
- A survey for active bird nests should be conducted prior to any vegetation removal or site alteration planned to occur between April 1 and October 31.
- It is recommended that several vernal pools be constructed in appropriate areas of the property. Preparation of a detailed enhancement plan is recommended to determine the appropriate locations and outline details of these vernal pools. The enhancement plan should also include recommendations for installing additional plant material in buffer areas where appropriate.
- Tree removal required as part of this project should be conducted by a forestry professional to help avoid impacts to trees to remain on site.
- Any exterior lighting should be directed away from the woodland on the property to minimize impacts on wildlife. Shades should be installed on exterior lighting to prevent light from being directed upward or towards natural areas.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting Inc. was retained to complete an Environmental Impact Study to identify potential impacts associated with the development of an industrial subdivision on the property located at 353 Townline Road, in the Town of Niagara-on-the-Lake. This EIS has been prepared with the intention of identifying the extent of any natural heritage features on the property and assessing impacts associated with the development of industrial blocks on the property. Based on our assessment, establishing four industrial blocks, the stormwater management pond and road will result in no impact to the significant natural heritage features on or adjacent to the property.

Based on this assessment, we conclude that the proposed development is consistent with the applicable policies of the Niagara Region Official Plan and the Niagara-on-the-Lake Official Plan. The proposed development also satisfies the intent of NPCA regulatory policies.

COLVILLE CONSULTING INC.

It is recommended that the mitigation measures included above be considered during detailed design and future construction on the property. It is also recommended that site specific EIS's be completed as needed once detailed designs have been prepared. These EIS's should refine the extent of any required buffers based on the proximity of proposed land uses.

Please do not hesitate to contact the undersigned at 905-935-2161 should you have any questions regarding the contents of this EIS.

Respectfully submitted by:



Ian Barrett, M.Sc.
Colville Consulting Inc.



Nash Colville, B.A., CERP-IT, CISEC-IT
Colville Consulting Inc.

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Appendix A:
Conceptual Site Plan

Appendix B:
Vascular Plant Checklist

Plant List for the Townline Road Property, NE of Westwood Court & Townline (Grantham) Road, Niagara-on-the-lake, ON.

ScientificName	Common Names	CC	CW	GRank	COSEWIC	COSSARO	SRank	Lrare	Notes
<i>Acer rubrum</i>	Red Maple	4	0	G5			S5		Rare in woodland
<i>Acer saccharinum</i>	Silver Maple	5	-3	G5			S5		In treed hedgerow
<i>Acer saccharum ssp. nigrum</i>	Black Maple	7	3	G5Q			S4?	U	Abundant along the 6 Mile Creek Floodplain
<i>Acer saccharum ssp. saccharum</i>	Sugar Maple	4	3	G5			S5		Dominant or co-dominant in FOD5/FOD2
<i>Achillea millefolium ssp. lanulosa</i>	Woolly Yarrow	0	3	G5			S5		
<i>Agrimonia gryposepala</i>	Tall Agrimony	2	2	G5			S5		
<i>Agrimonia sp</i>	Agrimony Species								
<i>Agrostis gigantea</i>	Redtop Grass	0	0	G4G5			SE5		
<i>Agrostis sp</i>	Bent Grass Species								
<i>Ambrosia artemisiifolia</i>	Common Ragweed	0	3	G5			S5		
<i>Ambrosia trifida</i>	Giant Ragweed	0	-1	G5			S5		Occasional along 6 Mile Creek Floodplain
<i>Amelanchier cf. arborea</i>	Downy Serviceberry	5	3	G5			S5		In treed hedgerow
<i>Apocynum sp</i>	Dogbane Species								
<i>Asclepias syriaca</i>	Common Milkweed	0	5	G5			S5		
<i>Asimina triloba</i>	Pawpaw	10	0	G5			S3	R	Rare colony, 60-80 stems ranging from 1cm dbh saplings to small trees (3m + tall). Located on inside bend of 6 Mile Creek meander, growing along top of riverbank, below Black Maple, Sugar Maple and Bitternut Hickory in mature Black Maple floodplain forest. Location mapped
<i>Asparagus officinalis</i>	Asparagus	0	3	G5?			SE5		
<i>Aster ericoides var. ericoides</i>	Heath Aster	4	4	G5			S5		
<i>Aster lanceolatus ssp. lanceolatus</i>	Panicked Aster	3	-3	G5			S5		
<i>Aster novae-angliae</i>	New England Aster	2	-3	G5			S5		
<i>Aster pilosus var. pilosus</i>	Hairy Aster	4	2	G5			S5		
<i>Barbarea vulgaris</i>	Common Wintercress	0	0	G?			SE5		
<i>Bidens frondosa</i>	Devil's Beggar-ticks	3	-3	G5			S5		
<i>Bromus sp</i>	Brome Species								A native Brome Grass rare along 6 Mile Creek Floodplain
<i>Carex granularis</i>	Meadow Sedge	3	-4	G5			S5		
<i>Carex spp</i>	Sedge Species								
<i>Carya cordiformis</i>	Bitternut Hickory	6	0	G5			S5		Co-dominant in FOD2
<i>Carya ovata</i>	Shagbark Hickory	6	3	G5			S5		Abundnat in FOD2
<i>Centaurea maculosa</i>	Spotted Knapweed	0	5	G?			SE5		
<i>Cichorium intybus</i>	Chicory	0	5	G?			SE5		
<i>Cinna arundinacea</i>	Stout Woodreed	7	-3	G5			S4		
<i>Circaea lutetiana ssp. canadensis</i>	Canada Enchanter's Nightshade	3	3	G5			S5		
<i>Cirsium arvense</i>	Canada Thistle	0	3	G?			SE5		
<i>Cirsium vulgare</i>	Bull Thistle	0	4	G5			SE5		
<i>Cornus foemina ssp. racemosa</i>	Grey Dogwood	2	-2	G5			S5		
<i>Crataegus crus-galli</i>	Cockspur Hawthorn	4	0	G5			S5		
<i>Crataegus mollis</i>	Downy Hawthorn	4	-2	G5			S5		
<i>Crataegus punctata</i>	Dotted Hawthorn	4	5	G5			S5		
<i>Dactylis glomerata</i>	Orchard Grass	0	3	G?			SE5		
<i>Daucus carota</i>	Wild Carrot	0	5	G?			SE5		
<i>Dianthus armeria</i>	Deptford Pink	0	5	G?			SE5		
<i>Dipsacus fullonum ssp. sylvestris</i>	Common Teasel	0	5	G?			SE5		
<i>Elymus repens</i>	Quack Grass	0	3	G5			SE5		
<i>Euonymus sp</i>	Euonymus Species								In treed hedgerow
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	G5			S5		
<i>Fagus grandifolia</i>	American Beech	6	3	G5			S5		
<i>Fragaria virginiana ssp. virginiana</i>	Common Strawberry	2	1	G5			S5		

ScientificName	Common Names	CC	CW	GRank	COSEWIC	COSSARO	SRank	Lrare	Notes
<i>Fraxinus americana</i>	White Ash	4	3	G5			S5		
<i>Fraxinus pennsylvanica</i>	Red Ash	3	-3	G5			S5		
<i>Geum canadense</i>	White Avens	3	0	G5			S5		
<i>Glyceria striata</i>	Fowl Manna Grass	3	-5	G5			S5		
<i>Inula helenium</i>	Elecampane	0	5	G?			SE5		
<i>Juglans nigra</i>	Black Walnut	5	3	G5			S4		In CUT/WOD and FOD
<i>Juniperus virginiana</i>	Eastern Red Cedar	4	3	G5			S5		
<i>Lactuca sp</i>	Lettuce Species								
<i>Larix decidua</i>	European Larch	0	5	G?			SE2		In treed hedgerow
<i>Leersia virginica</i>	White Grass	6	-3	G5			S4		
<i>Lepidium sp</i>	Pepper-grass Species								
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	0	3	G?			SE5		
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	0	1	G?					
<i>Lycopus americanus</i>	Cut-leaved Water-horehound	4	-5	G5			S5		In dugout pond
<i>Malus pumila</i>	Common Apple	0	5	G5			SE5		In treed hedgerow
<i>Menispermum canadense</i>	Moonseed	7	0	G5			S4	U	Occasional along 6 Mile Creek Floodplain
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	G5			S5		
<i>Ostrya virginiana</i>	Hop Hornbeam	4	4	G5			S5		Abundant in FOD
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	G5			S5		
<i>Phleum pratense</i>	Timothy	0	3	G?			SE5		
<i>Phragmites australis</i>	Common Reed	0	-4	G5			S5		
<i>Picea abies</i>	Norway Spruce	0	5	G?			SE3		In treed hedgerow
<i>Picea glauca</i>	White Spruce	6	3	G5			S5		In treed hedgerow
<i>Picea pungens</i>	Blue Spruce	?	?	G?			SE?		In treed hedgerow
<i>Picris hieracioides ssp. hieracioides</i>	Hawkweed Oxtongue	0	5	G5			SE5		
<i>Pinus nigra</i>	Austrian Pine	0	-5	G?			SE2		In treed hedgerow
<i>Pinus strobus</i>	Eastern White Pine	4	3	G5			S5		In treed hedgerow and FOD
<i>Plantago lanceolata</i>	Ribgrass	0	0	G5			SE5		
<i>Poa pratensis ssp. pratensis</i>	Kentucky Blue Grass	0	1	G?			S5		
<i>Polygonum virginianum</i>	Jumpseed	6	0	G5			S4		
<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	4	-1	G5			S5		
<i>Populus tremuloides</i>	Trembling Aspen	2	0	G5			S5		In treed hedgerow
<i>Populus x canadensis</i>	Carolina Poplar	?	?	G?			S?		In treed hedgerow
<i>Potentilla recta</i>	Rough-fruited Cinquefoil	0	5	G?			SE5		
<i>Prunella vulgaris ssp. lanceolata</i>	Heal-all	5	5	G5			S5		
<i>Prunus avium</i>	Sweet Cherry	0	5	G?			SE4		WOD and FOD
<i>Prunus serotina</i>	Black Cherry	3	3	G5			S5		In treed hedgerow and FOD
<i>Pyrus communis</i>	Common Pear	0	5	G5			SE4		
<i>Quercus alba</i>	White Oak	6	3	G5			S5		Rare in FOD
<i>Quercus bicolor</i>	Swamp White Oak	8	-4	G5			S4		Rare in woodland
<i>Quercus macrocarpa</i>	Bur Oak	5	1	G5			S5		Planted in treed hedgerow
<i>Quercus palustris</i>	Pin Oak	9	-3	G5			S4		Abundant in woodland
<i>Quercus rubra</i>	Red Oak	6	3	G5			S5		In treed hedgerow and abundant in FOD
<i>Rhamnus cathartica</i>	Common Buckthorn	0	3	G?			SE5		
<i>Rhus radicans ssp. negundo</i>	Climbing Poison-ivy	5	-1	G5			S5		
<i>Rhus typhina</i>	Staghorn Sumac	1	5	G5			S5		
<i>Robinia pseudo-acacia</i>	Black Locust	0	4	G5			SE5		In treed hedgerow
<i>Rosa multiflora</i>	Multiflora Rose	0	3	G?			SE4		
<i>Rubus allegheniensis</i>	Common Blackberry	2	2	G5			S5		
<i>Rubus occidentalis</i>	Black Raspberry	2	5	G5			S5		

ScientificName	Common Names	CC	CW	GRank	COSEWIC	COSSARO	SRank	Lrare	Notes
<i>Rumex crispus</i>	Curly Dock	0	-1	G?			SE5		
<i>Salix alba</i>	White Willow	0	-3	G5			SE4		
<i>Salix amygdaloides</i>	Peach-leaved Willow	6	-3	G5			S5		
<i>Salix cinerea</i>	Ashy Willow	0	5	G5			SE2		In dugout pond
<i>Salix exigua</i>	Sandbar Willow	3	-5	G5			S5		In dugout pond
<i>Salix nigra</i>	Black Willow	6	-5	G5			S4?		Rare in WOD
<i>Salix X rubens</i>	Hybrid White Willow	0	-4	G?			SE4		In dugout pond
<i>Sanicula sp</i>	Snakeroot Species								Abundant along the 6 Mile Creek Floodplain
<i>Scirpus validus</i>	Softstem Bulrush	5	-5	G?			S5		In dugout pond
<i>Solidago altissima var. altissima</i>	Tall Goldenrod	1	3	G?			S5		
<i>Sonchus sp</i>	Sow-thistle Species								
<i>Taraxacum officinale</i>	Common Dandelion	0	3	G5			SE5		
<i>Tilia americana</i>	Basswood	4	3	G5			S5		Occasional in FOD
<i>Trifolium pratense</i>	Red Clover	0	2	G?			SE5		
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	G5			S5		In dugout pond
<i>Ulmus americana</i>	White Elm	3	-2	G5?			S5		Occasional in FOD and WOD
<i>Ulmus rubra</i>	Slippery Elm	6	0	G5			S5	U	Rare, 2 large canopy size trees (1m dbh) in FOD - locatioin mapped
<i>Vicia cracca</i>	Cow Vetch	0	5	G?			SE5		
<i>Vitis riparia</i>	Riverbank Grape	0	-2	G5			S5		

Legend

CC - 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.

CW - 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

U- Uncommon, with number of known occurrences .

Appendix C:
Site Photographs



Photo 1. Example of vegetation conditions in the meadow and CUT1-4 community on northwest portion of the property.



Photo 2. Example of vegetation conditions in the CUT1-4 community on northeast portion of the property.



Photo 3. Example of vegetation conditions in the thicket and FODM12 community on property.



Photo 4. Example of vegetation conditions in the SWD1-3 community on property.



Photo 5. Example of vegetation conditions in the thicket and woodland community on eastern portion of the property.



Photo 6. Example of vegetation conditions in the thicket and woodland community on eastern portion of the property.



Photo 7. Example of vegetation conditions in the forest community on the east side of the property.



Photo 8. Example of vegetation conditions in the Six Mile Creek valley on the east side of the property. Photo from bottom of slope facing northwest.



Photo 9. Example of vegetation conditions adjacent to Six Mile Creek.



Photo 10. Example of vegetation conditions adjacent to Watercourse 1 on the north end of the property. Photo from center of property facing south.

Appendix D:

NHIC

NHIC Data

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1037634	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR			17PH5080	
1037634	NATURAL AREA	Upper Six Mile Creek Wetland Complex					17PH5080	
1037634	SPECIES	Timber Rattlesnake	<i>Crotalus horridus</i>		EXP	EXP	17PH5080	
1037634	SPECIES	Northern Bobwhite	<i>Colinus virginianus</i>		END	END	17PH5080	
1037634	SPECIES	Pawpaw	<i>Asimina triloba</i>				17PH5080	
1037634	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>		SC	THR	17PH5080	
1033124	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR			17PH4980	
1033124	SPECIES	Timber Rattlesnake	<i>Crotalus horridus</i>		EXP	EXP	17PH4980	
1033124	SPECIES	Northern Bobwhite	<i>Colinus virginianus</i>		END	END	17PH4980	
1033124	SPECIES	Cucumber Tree	<i>Magnolia acuminata</i>		END	END	17PH4980	
1033124	SPECIES	Pawpaw	<i>Asimina triloba</i>				17PH4980	
1033124	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>		SC	THR	17PH4980	

Appendix E: Significant Wildlife Habitat 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 and General Habitat Protection	Generally found near forested brooks, 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.	Potential habitat not present on or adjacent to property.
Northern Dusky Salamander (<i>Desmognathus fuscus</i>)	Known to Occur	Species and General Habitat Protection	Generally prefer rocky woodland streams, seepages, and springs where water is running or trickling	Potential habitat not present on or adjacent to 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	Potential habitat present in valley. Species not detected during breeding bird surveys.
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.	Suitable habitat not present on or adjacent to property. Not detected during breeding bird surveys.
Bank Swallow (<i>Riparia riparia</i>)	Known to Occur	Species and General Habitat Protection	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.	Suitable habitat not present on or adjacent to property. Not detected during breeding bird surveys.
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.	Suitable breeding 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 or adjacent to property. Not detected during breeding bird surveys.
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 or adjacent to property. Not detected during breeding bird surveys.
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)	Typical breeding habitat not present on property. Species heard during amphibian surveys. Likely nesting on adjacent roofs.
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 or adjacent to property. Not detected during breeding bird surveys.
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 or adjacent to property. Not detected during breeding bird surveys.

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 understory vegetation as well as forest clearings and edges.	Potential habitat present in valley. Species not detected during breeding bird surveys.
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 or adjacent to property. Not detected during breeding bird surveys.
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	Historically Known to Occur	<i>Species and General Habitat Protection</i>	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 or adjacent to property. Not detected during breeding bird surveys.
Least Bittern (<i>Ixobrychus exilis</i>)	Known to Occur	<i>Species and General Habitat Protection</i>	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 or adjacent to property. Not detected during breeding bird surveys.
Northern Bobwhite (<i>Colinus virginianus</i>)	Historically Known to Occur	<i>Species and General Habitat Protection</i>	Generally inhabits a variety of edge and grassland type - habitats including nonintensively farmed agricultural lands.	Suitable habitat not present on or adjacent to property. Not detected during breeding bird surveys.
Peregrine Falcon (<i>Falco peregrinus</i>)	Known to Occur	N/A	Generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas.	Suitable habitat not present on or adjacent to property. Not detected during breeding bird surveys.
Red-Headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Known to Occur	N/A	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	Potential habitat present in valley. Species not detected during breeding bird surveys.
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.	Potential habitat present in valley. Species not detected during breeding bird surveys.
Yellow-breasted Chat (<i>Icteria virens</i>)	Known to Occur	<i>Species and General Habitat Protection</i>	Generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Suitable habitat not present on or adjacent to property. Not detected during breeding bird surveys.

FISH		Key Habitats Used By Species		Subject Property
American Eel (<i>Anguilla rostrata</i>)	Known to Occur	<i>Species and General Habitat Protection</i>	All fresh water, estuaries and coastal marine waters that are accessible to the Atlantic Ocean; 12-mile Creek watershed and Lake Ontario	Potential habitat not present on 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	Potential habitat not present on property.
Greater Redhorse (<i>Moxostoma valenciennesi</i>)	Known to Occur (S3)	N/A	Moderate to swift current riffles, runs and pools of medium to large rivers with clear water and substrates of gravel, cobble or boulders; lakes	Potential habitat not present on property.
Lake Chubsucker (<i>Erimyzon sucetta</i>)	Known to Occur	<i>Species and General Habitat Protection</i>	Generally prefer marshes, wetlands and lakes with clear, still waters and abundant aquatic plants	Potential habitat not present on property.
Lake Sturgeon (<i>Acipenser fulvescens</i>)	Known to Occur	<i>Species and General Habitat Protection</i>	Generally inhabits the bottoms of shallow areas of large freshwater lakes and rivers	Potential habitat not present on 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	Potential habitat present on property, however species not observed during surveys.
Rusty-patched Bumble Bee <i>(Bombus affinis)</i>	Formerly Occurred and May Still Occur	<i>Species and General Habitat Protection</i>	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	Potential habitat not present on property.
West Virginia White <i>(Pieris virginianensis)</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.	Potential habitat not present on property.

MAMMALS		ESA Protection	Key Habitats Used By Species	Subject Property
Gray Fox <i>(Urocyon cinereoargenteus)</i>	Suspected to Occur	<i>Species and General Habitat Protection</i>	Generally prefers deciduous forests, marshes, swampy areas, and urban areas	Suitable habitat not present on property.
Little Brown Myotis <i>(Myotis lucifugus)</i>	Suspected to Occur	<i>Species and General Habitat Protection</i>	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).	Potential roosting habitat present in forested valley
Northern Myotis <i>(Myotis septentrionalis)</i>	Suspected to Occur	<i>Species and General Habitat Protection</i>	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.)	Potential roosting habitat present in forested valley
Tri-colored Bat <i>(Perimyotis subflavus)</i>	Suspected to Occur	<i>Species and General Habitat Protection</i>	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.	Potential roosting habitat present in forested valley

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

MUSSELS		ESA Protection	Key Habitats Used By Species	Subject Property
Eastern Pondmussel (Ligumia nasuta)	Known to Occur	<i>Species and General Habitat Protection</i>	Sheltered areas of lakes and in slow-moving areas of rivers and canals with sand or mud bottoms.	Suitable habitat not present on or adjacent to property.

PLANTS		ESA Protection	Key Habitats Used By Species	Subject Property
American Chestnut <i>(Castanea dentata)</i>	Known to Occur	<i>Species and General Habitat Protection</i>	Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Suitable habitat not present on or adjacent to property.

American Ginseng <i>(Panax quinquefolius)</i>	Known to Occur	<i>Species and General Habitat Protection</i>	Grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Suitable habitat not present on or adjacent to property.
American Water-willow <i>(Justicia americana)</i>	Known to Occur	<i>Species and General Habitat Protection</i>	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.	Suitable habitat not present on or adjacent to property.
Black Gum <i>(Nyssa sylvatica)</i>	Known to Occur (S3)	N/A	Dry to wet woods and savannahs.	Suitable habitat not present on or adjacent to property.
Butternut <i>(Juglans cinerea)</i>	Known to Occur	<i>Species and General Habitat Protection</i>	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	Potential habitat present in forested valley. Not observed during surveys.
Common Hoptree <i>(Ptelea trifoliata)</i>	Known to Occur	<i>Species and General Habitat Protection</i>	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.	Suitable habitat not present on or adjacent to property.
Deerberry <i>(Vaccinium stamineum)</i>	Known to Occur	<i>Species and General Habitat Protection</i>	Generally occurs on sandy and well-drained soil, often in dry open woodlands (Niagara Gorge)	Suitable habitat not present on or adjacent to property.
Deer Tongue Panic Grass <i>(Dichanthelium clandestinum)</i>	Known to Occur (S2)	N/A	Usually in moist and often sandy ground: floodplains and thickets on stream banks; aspen forests, borders, and clearings; marshy ground, ditches.	Suitable habitat not present on or adjacent to property.
Drooping Trillium <i>(Trillium flexipes)</i>	Historically Known to Occur	<i>Species Protection and Habitat Regulation</i>	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	Potential habitat present in forested valley. Not observed during surveys.
Eastern Flowering Dogwood <i>(Cornus florida)</i>	Known to Occur	<i>Species Protection and Habitat Regulation</i>	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	Potential habitat present in forested valley. Not observed during surveys.
Green Arrow Arum <i>(Peltandra virginica)</i>	Known to Occur (S3)	N/A	Shallow waters in streams, rivers and creeks.	Suitable habitat not present on or adjacent to property.
Halberd-leaved Smartweed <i>(Persicaria arifolia)</i>	Known to Occur (S3)	N/A	Wet mucky soil under alders at margin of peat bogs; wet, shaded ground along streams, ponds, swamps and lakes; rich thickets and marshy borders; wet depressions and seepage areas in mature hardwood forests	Suitable habitat not present on or adjacent to property.
Honey Locust <i>(Gleditsia triacanthos)</i>	Known to Occur (S2)	N/A	Mesic to wet forests and forest edges on rich bottomlands; in Ontario also on stabilized sand spits and dunes, frequently planted	Potential habitat present in forested valley. Not observed during surveys.
Kansas Hawthorn <i>(Crataegus coccinioides)</i>	Known to Occur (S2)	N/A	Dry uplands on limestone hillsides. Well drained loamy soils.	Suitable habitat not present on or adjacent to property.
Large Yellow Pond-Lily <i>(Nuphar advena)</i>	Known to Occur (S3)	N/A	Alkaline and neutral water 0.5 to 2 m deep.	Suitable habitat not present on or adjacent to property.
Red Mulberry <i>(Morus rubra)</i>	Known to Occur	<i>Species Protection and Habitat Regulation</i>	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	Potential habitat present in forested valley. Not observed during surveys.
Round-leaved Greenbrier <i>(Smilax rotundifolia)</i>	Known to Occur	<i>Species Protection and Habitat Regulation</i>	Generally grows in open moist to wet woodlands, oftengrowing on sandy soils . Habitat is variable.	Suitable habitat not present on or adjacent to property.
Shellbark Hickory <i>(Carva laciniosa)</i>	Known to Occur (S3)	N/A	Wet or wet -mesic deciduous forests	Suitable habitat not present on or adjacent to 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.	Suitable habitat not present on or adjacent to property.
Smartweed Dodder <i>(Cuscuta cf. polygonorum)</i>	Known to Occur (S1)	N/A	Moist to wet prairies, soggy thickets along rivers, fens, sandy marshes, and other wet places.	Suitable habitat not present on or adjacent to property.

Swamp Rose-mallow (<i>Hibiscus moscheutos</i>)	Known to Occur	N/A	Generally grows in open, coastal marshes, but it is also sometimes found in open wet woods, thickets and drainage ditches	Suitable habitat not present on or adjacent to 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.	Potential habitat present in forested valley. Not observed during surveys.

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.	Suitable habitat not present on or adjacent to property.
Eastern Musk Turtle (<i>Sternotherus odoratus</i>)	Known to Occur	Species and General Habitat Protection	Generally prefer habitats with sandy, well-drained soil and open vegetative cover, such as open woods, brushland, fields, forest edges and disturbed sites. The species is often found near water.	Suitable habitat not present on or adjacent to property.
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.	Suitable habitat not present on or adjacent to 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.	Suitable habitat not present on or adjacent to property.

Appendix F:
Significant Wildlife Habitat Table

Assessment of Significant Wildlife Habitat on the 353 Townline Road Property.

Significant Wildlife Habitat (SWH) Type	Known or Candidate SWH present/absent	Rationale
SEASONAL CONCENTRATION AREAS OF ANIMALS		
Waterfowl Stopover and Staging Areas	Absent	Suitable habitat not present on property
Shorebird Migratory Stopover Area	Absent	Suitable habitat not present on property
Raptor Wintering Area	Absent	Suitable habitat not present on property
Bat Hibernacula	Absent	Suitable habitat not present on property
Bat Maternity Colonies	Absent	Suitable habitat not present on property
Turtle Wintering Areas	Absent	Suitable habitat not present on property. No turtles observed in irrigation pond.
Reptile Hibernaculum	Absent	Suitable habitat not present on property
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Suitable habitat not present on property
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Suitable habitat not present on property
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Suitable habitat not present on property
Migratory Butterfly Stopover Areas	Absent	Suitable habitat not present on property
Landbird Migratory Stopover Areas	Absent	Suitable habitat not present on property
Deer Winter Congregation Areas	Absent	Suitable habitat not present on property
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on property
Sand Barren	Absent	Habitat type not present on property
Alvar	Absent	Habitat type not present on property
Old Growth Forest	Absent	Habitat type not present on property
Savannah	Absent	Habitat type not present on property
Tallgrass Prairie	Absent	Habitat type not present on property
Other Rare Vegetation Communities	Absent	No rare vegetation communities present on Subject Property

SPECIALIZED HABITATS OF WILDLIFE CONSIDERED SWH		
Waterfowl Nesting Area	Absent	Suitable habitat not present on Property
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Absent	Suitable habitat not present on Property
Woodland Raptor Nesting Habitat	Absent	Suitable habitat not present on Property
Turtle Nesting Areas	Absent	Suitable habitat not present on Property
Seeps and Springs	Absent	Suitable habitat not present on Property
Amphibian Breeding Habitat (Woodland)	Absent	Suitable habitat not present on Property
Amphibian Breeding Habitat (Wetlands)	Absent	Suitable habitat not present on Property
Woodland Area-Sensitive Bird Breeding Habitat	Absent	Suitable habitat not present on Property.
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH		
Marsh Breeding Bird Habitat	Absent	Suitable habitat not present on Property
Open Country Bird Breeding Habitat	Absent	Suitable habitat not present on Property
Shrub/Early Successional Bird Breeding Habitat	Absent	Suitable habitat not present on Property
Terrestrial Crayfish	Absent	Suitable habitat not present on Property
Special Concern and Rare Wildlife Species	Absent	Suitable habitat not present on Property
ANIMAL MOVEMENT CORRIDORS		
Amphibian Movement Corridors	Absent	Suitable habitat not present on Property
Bat Migratory Stopover Area	Absent	Suitable habitat not present on Property

Please note the above SWH criteria are based on guidance provided by the Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E and modified to be specific for the Subject Property.