

NATURAL HERITAGE CONSTRAINTS ASSESSMENT
4336 WILICK ROAD

Prepared for:

Achievers Exim Consultants Inc.

Prepared by:

Colville Consulting Inc.

C20071
February 2023

COLVILLE 
CONSULTING INC.

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Achievers Exim Consultants Inc. to prepare a natural heritage constraints assessment for the property located 4336 Willick Road, in the City of Niagara Falls, henceforth referred to as the Subject Property. This report is intended to summarize the results of field inventories conducted on the Subject Property and characterize natural heritage features currently on and adjacent to the property. A development plan for the property has not been prepared, however the intent of this project is to focus on delineating the extent of natural heritage features on the portion of the property within the urban boundary, with the intent of informing future subdivision of the Subject Property. This report will also serve to assess current designations on the property, as well as recommend any required modifications to designations.

1.1 Subject Lands

The Subject Property is approximately 19.8ha (49 acres) in size, with approximately 2.2ha (5.44 acres) occurring within the urban boundary. This parcel has been assigned the municipal address of 4336 Willick Road, in the City of Niagara Falls (see Figure 1). Surrounding land uses consist of agricultural uses to the south, east and west, with residential to the west and northwest and residential and natural area to the north. The majority of the property is currently in agricultural production, however there was formerly a residence and outbuildings located on the northern portion of the property. No buildings or structures are currently present on the parcel.

Based on our review of background information contained in the Niagara Region Official Plan, it is our understanding that mapped natural heritage features on the Subject Property are limited to an Other Woodland, Other Wetland and the main channel of Hunters Drain. The treed riparian area adjacent to Hunters Drain has also been identified as Significant Woodland in the City of Niagara Falls Official Plan and designated as Environmental Conservation Area (ECA). The watercourse buffer has also been designated as ECA. A review of City of Niagara Falls Official Plan mapping also indicates that the flood hazard associated with Hunters Drain has been designated as Environmental Protection Area (EPA). The extent of natural heritage features and designations are illustrated in Figure 2.

1.2 Description of Proposed Development

A development plan for the Subject Property has yet to be prepared, and therefore the intent of this project is to delineate the extent of potential natural heritage features on the property, in order to assist with guiding future development on the property. It is also the intent of this project to verify the extent of any lands which should be designated as Other Wetland, Other Woodland, ECA or EPA.

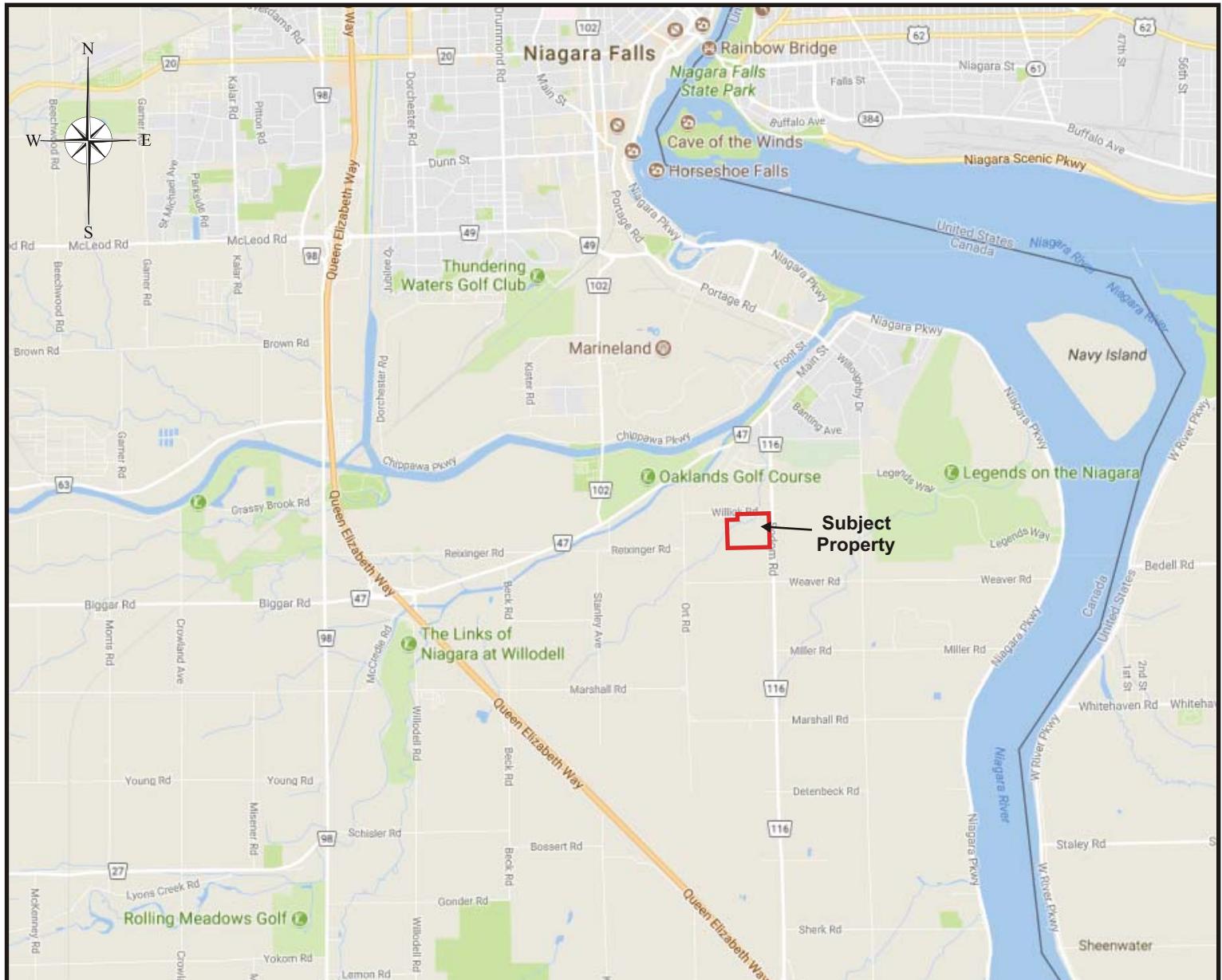


Figure 1

Location of Subject Property



Location of Detail

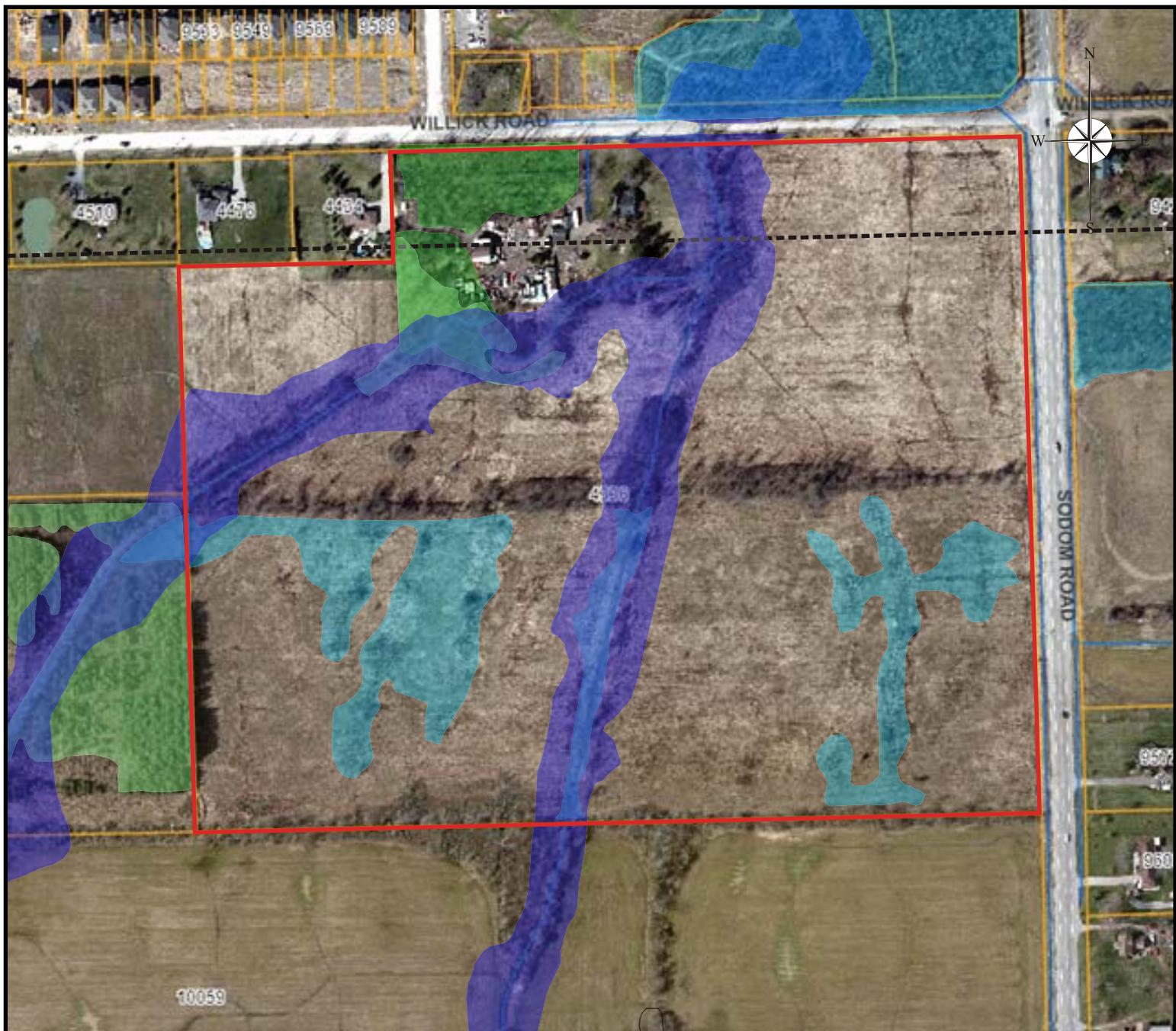
**Natural Heritage Constraints Assessment
Terms of Reference - 4336 Willick Road**

Prepared for:

**Achievers Exim
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Legend

- Subject Property
- Urban Boundary
- Mapped Extent of Flood Hazard (EPA)
- Significant Woodland (ECA)
- Mapped Extent of Other Woodlands
- Mapped Extent of Other Wetlands
- Watercourses

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

Natural Heritage Constraints Assessment Terms of Reference - 4336 Willick Road

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2.0 STUDY APPROACH

2.1 Background Review

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

- ◆ City of Niagara Falls Official Plan (2015);
- ◆ Mapping prepared as part of the Niagara Region Official Plan (Regional Municipality of Niagara 2022);
- ◆ Ontario Ministry of Natural Resources Species at Risk List for the City of Niagara Falls (MNR 2018);
- ◆ Background data available from the NPCA and Ministry of Natural Resources and Forestry (MNRF); and
- ◆ Niagara Natural Areas Inventory (NPCA 2010).

2.2 Field Inventories and Methodology

In order to identify potential natural heritage constraints on the property, Colville Consulting Inc. conducted the following inventories:

- 1) Botanical inventories of the property in the summer and Fall of 2022;
- 2) Assessment and description vegetation communities on the properties using the Ecological Land Classification System for Southern Ontario (ELC);
- 3) Complete an assessment of potential bat maternity colony habitat on the property using methods outlined by MNRF;
- 4) Describe characteristics and condition of the watercourse on the property; and
- 5) 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.

3.0 STUDY FINDINGS

3.1 Botanical Inventories and Vegetation Mapping

Botanical inventories were conducted on August 4 and October 5, 2022. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described, and a vascular plant checklist was compiled. Species status was assessed for Ontario (Oldham and Brinker 2009) and the Niagara Region (Oldham 2010). Vegetation communities are described below and mapped on Figure 3. A vascular plant checklist is provided in Appendix A. Photos of the property are provided in Appendix B.

3.1.1 Botanical Inventories

A total of 117 plant species were documented on and adjacent to the property during botanical inventories. None of the species observed are at risk or provincially or considered to be locally rare or uncommon.

3.1.2 Vegetation Communities

A majority of the Subject Property is currently being farmed and planted in soybeans. Naturalized vegetation on the property was primarily associated with the riparian area adjacent to Hunters Drain, along with a hedgerow adjacent to Willick Road. Further description of these vegetation communities are provided below.

WODM5 *Fresh - Moist Deciduous Woodland Ecosite*

Located in association with Hunters Drain is a narrow band of riparian vegetation that was described as Fresh - Moist Deciduous Woodland Ecosite (WODM5). Species in the tree canopy in this community varies throughout the length of Hunters Drain, with Green Ash, American Elm, White Willow, Red Maple, Shagbark Hickory and Pin Oak the most common species. Canopy cover also varies from less than 10% to approximately 80% in various locations. The understory and shrub layers consisted of Green Ash, Pin Oak, Common Buckthorn, Gray Dogwood and Hawthorns.

The ground layer throughout this community is also variable and contained Panicked Aster, Rough Goldenrod, Sedge species, Avens species, Jumpseed, Tall Goldenrod and grasses.

Within the channel of Hunters Drain are several small inclusions of Reed-canary Grass Graminoid Mineral Meadow Marsh Type (MAMM1-3). Reed Canary Grass dominates these communities, along with Iris, Cattail Species, Common Boneset, Northern Water-horehound and Purple Loosestrife.

CUM1-1 *Dry - Fresh Old Field Meadow Type*

A portion of the north-central property was described as Dry - Fresh Old Field Meadow Type (CUM1-1). This vegetation community has established on what was formerly manicured lawn in association with the previous residence on the property. Vegetation in this area consisted of a mix of meadow species, including Kentucky Blue Grass, Orchard Grass, Goldenrods, White Sweet-clover, Wild Carrot and Common Ragweed.

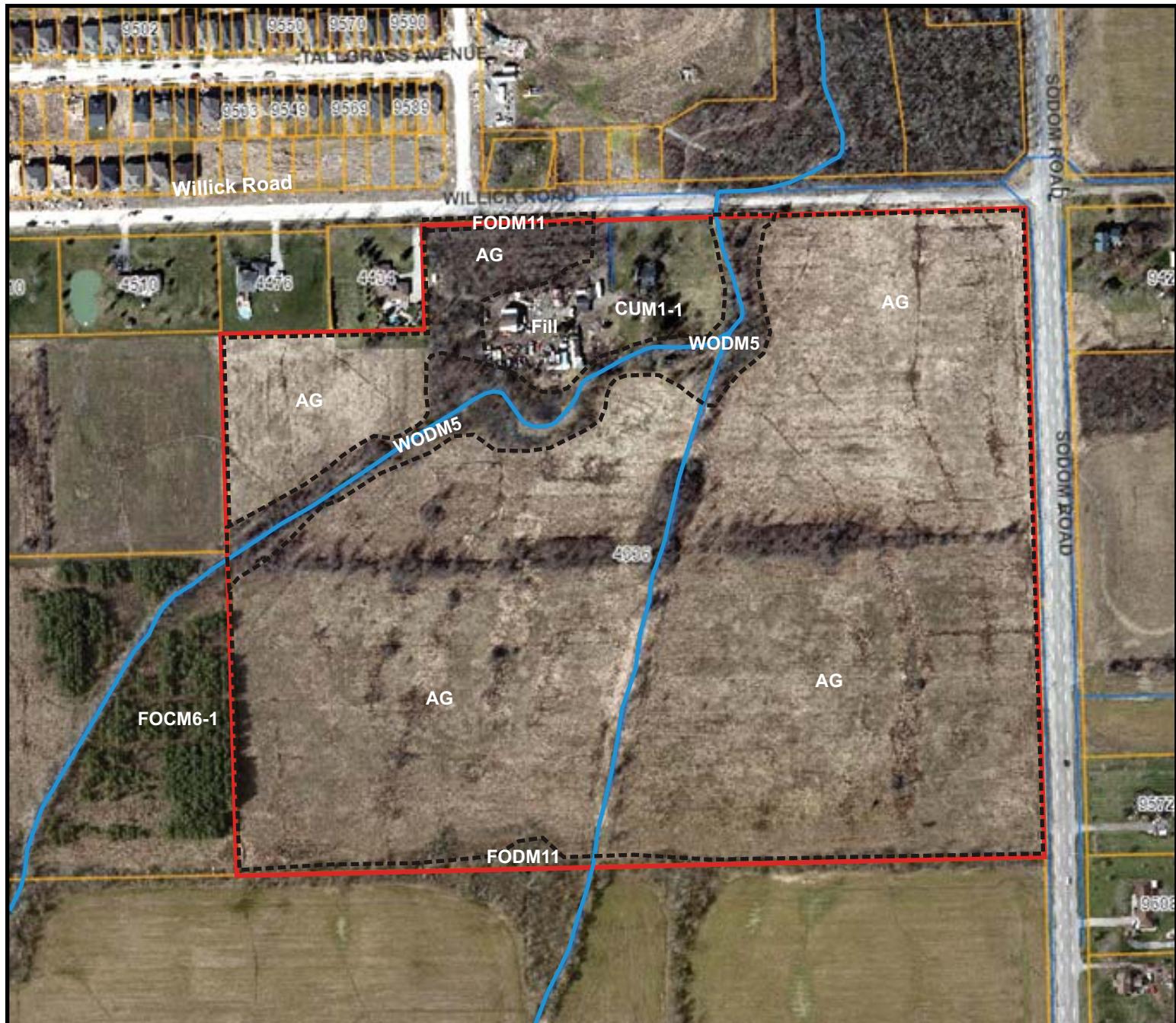
FODM11 *Naturalized Deciduous Hedge-row Ecosite*

Two Naturalized Deciduous Hedge-rows were identified on the property during botanical inventories. The hedgerow associated with Willick Road is dominated by mid-aged Pin Oak, with American Elm, Swamp White Oak, Green Ash and Shagbark Hickory as associates. Common Buckthorn and Hawthorns are also present in this hedgerow.

Located along the south property line is another narrow hedgerow. This hedgerow contained Pin Oak, American Elm, Green Ash, Shagbark Hickory, Common Buckthorn and Hawthorns.

FOCM6-1 *Dry - Fresh White Pine Naturalized Coniferous Plantation Type*

West of the property is a naturalizing plantation described as Dry - Fresh White Pine Naturalized Coniferous Plantation Type (FOCM6-1). This community was not inventoried extensively as part of this assessment, however White Pine approximately 25-30 years of age occur within this plantation, along with young Green Ash. No understory, shrub layer or ground cover were evident from limited observation from the Subject Property.



Legend

- Subject Property
- Watercourses
- AG Agricultural - Soybeans
- CUM1-1 Dry - Fresh Old Field Meadow Type
- FOCM6-1 Dry - Fresh White Pine Naturalized Coniferous Plantation Type
- FODM11 Naturalized Deciduous Hedge-row Ecosite
- WODM5 Fresh - Moist Deciduous Woodland Ecosite

Figure 3
**Extent of Natural Heritage Features
on the Subject Property**

**Natural Heritage Constraints Assessment
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3.2 Wildlife and Wildlife Habitat

3.2.1 Wildlife Observations

Incidental wildlife observations including signs were recorded during each visit to the property, which occurred on September 16 and October 14, 2021 and May 10, June 10, August 4, August 5 and October 5, 2022. These observations were limited to a Grey Squirrel, Eastern Cottontail, White-tailed Deer and Raccoon tracks.

3.2.2 Assessment of Potential Bat Roosting Habitat

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

An assessment of potential bat roosting habitat was conducted on May 10, 2022 using methods described in MNRF (2017). From our observations, no significant potential roost trees were located on the property. Several dead Ash trees were noted in association with Hunters Drain, however these trees are not providing significant potential habitat for roosting bats.

3.3 Watercourses

As illustrated in Figure 2, the main channel of Hunters Drain bisects the property. As this watercourse has been historically altered as part of drainage works, this channel is generally well defined and appears to be moderately entrenched. Channel width is variable across the property, with the channel on the northern portion of the property measuring an average of approximately 4m in width. Channel width south of the former shop on the property increases and was historically altered to function as an online pond. Remnant stone bank stabilization work is still visible in areas. Substrates through the channel consist of native silty clay material, which supports sporadic areas of emergent vegetation as described earlier in this report.

Flow in Hunters Drain is known to be intermittent. No water was present in the channel during July and August, however standing water was present in culverts and in the former online pond during an assessment conducted on October 7, 2022. No primary fisheries inventories were conducted as part of this assessment, however species known to occur in Hunters Drain include Emerald Shiner, Common Shiner, Central Mudminnow, Pumpkinseed, Bluegill, Green Sunfish, Largemouth Bass and Common White Sucker (NPCA 2008).

An ephemeral watercourse is also present on the southern portion of the property and bisects the agricultural lands on the property. This watercourse conveys water from lands south of the property to the main channel of Hunters Drain. The channel of this watercourse is poorly defined, but has been altered to assist with conveying surface drainage.

4.0 ENVIRONMENTAL POLICY

One of the intents of this assessment is to verify natural heritage designations currently identified on property. As illustrated in Figure 2, a portion of the property has been designated as Environmental Conservation Area (ECA) in the Niagara Region Official Plan, as well as ECA and Environmental Protection Area in the City of Niagara Falls Official Plan. The following is an assessment of these designations.

4.1 Niagara Region Official Plan

Policies related to the management of the natural heritage system and specific natural heritage features are included in Chapter 3 of the Niagara Region Official Plan. The natural heritage system is made up 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 the natural systems in the region.

The water resource system is made up of both groundwater 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 establishment of these natural systems is required by Provincial policy. These systems have been integrated in this Plan and are known together as the Region's natural environment system.

Section 3.1.2.1 states that individual natural heritage features and areas, key natural heritage features, key hydrological features, and other individual components which are considered mapped features of the natural environment system are shown as an overlay on Schedule C2.

Section 3.1.2.2 states that the individual features and components of the natural environment system that are mapped on Schedule C2 include:

- a) significant woodlands;
- b) other woodlands;
- c) provincially significant wetlands;
- d) other wetlands and non-provincially significant wetlands;
- e) life science areas of natural and scientific interest;
- f) earth science areas of natural and scientific interest;
- g) permanent and intermittent streams;
- h) inland lakes; and
- i) linkages.

As illustrated in Figure 2, mapped natural heritage features on the property consist of other woodlands, other wetlands and the main channel and tributary to Hunters Drain.

For the purposes of the Official Plan, other woodlands are defined 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%. Other woodlands would not include woodlands meeting the criteria as significant woodlands.

Other wetlands are defined as wetlands that meet the definition of a wetland, and which have not been evaluated as a provincially significant wetland. The Niagara Region Official Plan defined wetlands as lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.

Section 3.1.11.2 of the official plan 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.

Section 3.1.11.4. of the official plan states that inside of settlement areas, other woodlands are subject to an ecologically appropriate buffer to be determined at the time an application is made for development or site alteration in accordance with Policy 3.1.9.9.1.

Polices 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 states 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.

4.2 City of Niagara Falls Official Plan

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

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

Similar to the Niagara Region Official Plan, Section 11.2.13 of the City of Niagara Falls Official Plan indicates that Environmental Protection Areas (EPA) include: Provincially Significant Wetlands, NPCA regulated wetlands greater than 2ha in size, Provincially Significant Life ANSIs, significant habitat of threatened and endangered species, floodways and erosion hazard areas and environmentally sensitive areas.

Section 11.2.22 of the City of Niagara Falls Official Plan indicates that Environmental Conservation Areas (ECA) include: significant woodlands, significant valley lands, significant wildlife habitat, fish habitat, significant Life and Earth Science ANSIs, sensitive ground water areas, and locally significant wetlands or NPCA wetlands less than 2ha in size.

Based on our assessment, no features consistent with an ECA are present on the property. The treed area associated with Hunters Drain is too small to be considered woodland and does not appear to be consistent with an ECA.

As illustrated in Figure 2, the flood hazard associated with Hunters Drain has been designated as EPA. The mapped extent of the flood hazard generally follows the channel of Hunters Drain, however the

extent of the flood hazard on this property was not confirmed as part of this project. For the purposes of this assessment, the mapped extent of the flood hazard is considered to be EPA (see Figure 4).

Section 11.2.14 of the City of Niagara Falls Official Plan indicates that development or site alteration shall not be permitted in the EPA designation except where it has been approved by the Niagara Peninsula Conservation Authority or other appropriate authority, for the following:

- a) a) forest, fish and wildlife management;
- b) conservation and flood or erosion projects where it has been demonstrated that they are necessary in the public interest and other alternatives are not available;
- c) small scale, passive recreational uses and accessory uses such as trails, board walks, footbridges, fences, docks and picnic facilities that will not interfere with natural heritage features or their functions.

Section 11.2.20 of the City of Niagara Falls Official Plan goes on to state that where, as a result of a planning application, new floodline or stream corridor mapping has been generated to the approval of the Niagara Peninsula Conservation Authority, amendments to this Plan may not be required. However, where the planning application involves a site specific Zoning Bylaw amendment, it shall be amended accordingly.

4.3 Niagara Peninsula Conservation Authority

To administer Ontario Regulation 155/06, the Niagara Peninsula Conservation Authority (NPCA) has created a document titled NPCA Policy Document: 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 natural heritage features and hazard lands.

Mapped regulated features on the Subject Property are limited to tributary to Hunters Drain and the associated flood hazard. The extent of the NPCA regulated features on the Subject Lands is illustrated in Figure 2.

NPCA policies related to the management of watercourses are included in Section 9.0 of the NPCA Policy Document (NPCA 2022), with policies related to watercourse buffer composition are included in Section 9.2.5.

Section 9.2.5.1 of the policy document speaks to buffer requirements and states that the following buffer requirements apply to development and site alteration adjacent to a watercourse:

- 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.

NPCA policies related to the management of flood hazards are included in Section 6.2 of the NPCA Policy Document (NPCA 2022). These policies generally prohibit development and site alteration within flood hazards, with some site-specific exceptions.

5.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1 Species at Risk Habitat

5.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered species were observed during our assessments and a single Threatened species (Barn Swallow) was observed flying and calling above the Subject Property during summer site visits. No suitable nest structures are located on the property and therefore it is not anticipated that nesting is occurring on the Subject Lands. It is probable that this species is nesting on structures located south of the property, but no nests were observed or confirmed.

Background data available from the Natural Heritage Information Center (NHIC) indicates that Endangered or Threatened species known to occur in the vicinity of the property include Round Hickorynut (Endangered), Eastern Pondmussel (Endangered), American Water Willow (Threatened), Bobolink (Threatened), and Eastern Meadowlark (Threatened). Suitable potential habitat for Round Hickorynut, Eastern Pondmussel and American Water Willow is not present on or in close proximity to the property. Additionally, although the former lawn area associated with the previous residence is considered meadow, habitat in this area is too small and not of sufficient quality to be used by Eastern Meadowlark or Bobolink.

It is therefore our assessment that the Subject Property is not providing significant habitat for any Endangered or Threatened species.

5.1.2 Species of Conservation Concern

Species of Conservation Concern previously documented in the vicinity of the property include Grass Pickerel (Special Concern), Snapping Turtle (Special Concern), Wood Thrush (Special Concern) and, Eastern Wood-pewee (Special Concern). Based on our assessments, Hunters Drain on the property is not providing suitable habitat for Snapping Turtle and Grass Pickerel. Additionally, although it is possible for Wood Thrush and Eastern Wood-pewee to utilize habitat within the riparian woodland, the habitat available in this woodland is generally not of sufficient size to support either of these species.

It is therefore our conclusion that the Subject Property is not providing habitat for Species of Conservation Concern.

5.2 Significant Wildlife Habitat

5.2.1 Seasonal Concentration Areas of Animals

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identifies 14 types of seasonal concentrations of animals that may be considered significant wildlife habitat. 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.

Habitat present on an adjacent to the property is not known to support seasonal concentrations of animals and none of these functions were observed or documented during our inventories. An assessment of SWH is provided in Appendix E.

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.

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identifies 7 specialized habitats that may be considered significant wildlife habitat. 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 present on or adjacent to the Subject Property.

5.2.3 Specialized Habitats of Wildlife considered SWH

Some wildlife species require large areas of suitable habitat 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 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.

No specialized wildlife habitat is present on the property, and therefore it is our conclusion that Subject Property is not providing specialized habitat for wildlife.

5.2.4 Habitats of Species of Conservation Concern considered SWH

Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act. 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.

Habitat present on the Subject Property is not considered to be typical habitat for any species of conservation concern.

5.2.5 Migration Corridors

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

From our review of background mapping and observations of the property, the watercourse and adjacent riparian area may be providing some minor linkage functions in the vicinity of this property. To maintain wildlife movement associated with Hunters Drain, it is recommended that a 30m wide corridor be retained as natural habitat to maintain potential wildlife movement in the area.

5.3 Provincially Significant Wetlands and Other Wetlands

No provincially significant wetlands are located on or adjacent to the property and no wetlands were identified on the property during our inventories. The PSW nearest to this property is located approximately 360m to the southwest of the portion of the property in the urban boundary, and any future development on these lands will not impact this wetland unit.

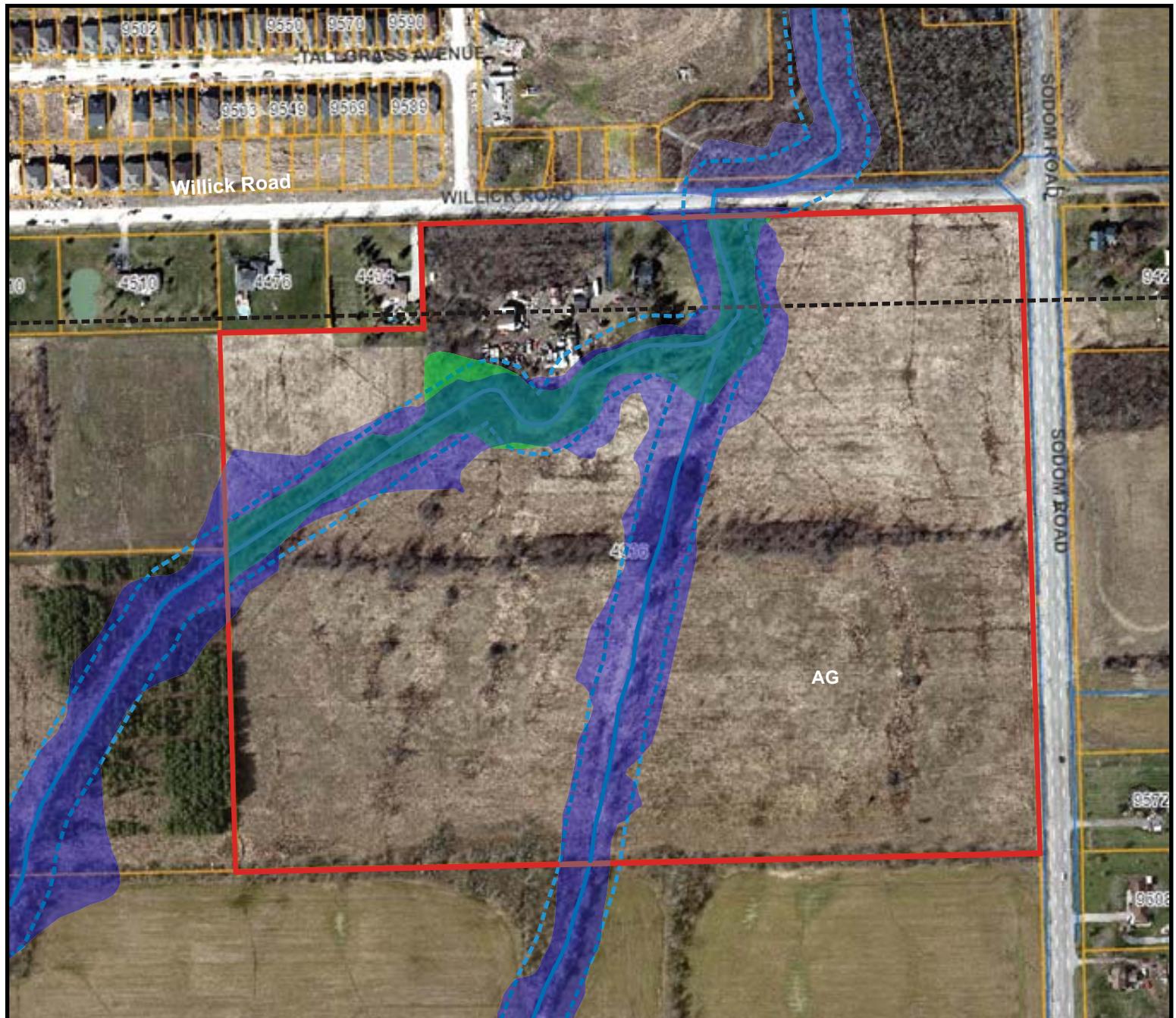
As illustrated in Figure 2, several pockets of other wetland have been identified on the property in Niagara Region mapping. These other wetlands have been identified on lands that are currently being used to cultivate soyabean, and therefore are not considered to be wetland, per the definition in the Niagara Region Official Plan.

The other wetland identified in association with the tributary to Hunters Drain occurs in an area of very little wetland vegetation, and is also therefore not considered to be a wetland.

5.4 Significant Woodlands and Other Woodlands

The mapped extent of significant and other woodlands are illustrated in Figure 2. As illustrated in Figure 3, lands north and west of the former shop on the property are currently in agricultural production and no longer contain any tree cover, as a result these lands are not considered to be woodland.

Vegetation in the riparian area of Hunters Drain was described as Fresh - Moist Deciduous Woodland Ecosite. Canopy cover in this community was variable and ranged from 10% to approximately 80%



Legend

- Subject Property
- - - - - Urban Boundary
- Watercourses
- - - - - 15m Buffer from Watercourses
- Mapped Extent of Flood Hazard (EPA)
- Riparian Treed Area

Notes: Extent of flood hazard not refined as part of this project.

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

**Natural Heritage Constraints Assessment
4336 Willick Road**

Prepared for:

**Achievers Exim
Consultants Inc.**

Prepared by:

**COLVILLE Q
CONSULTING INC.**

cover. Based on our assessment, the treed area associated with Hunters Drain measures an average of approximately 25m in width, which is less than the 40m minimum width recommended in the Natural Heritage Reference Manual (OMNR 2010) to be considered woodland. Therefore, it is our assessment that no woodlands occur on the Subject Property.

5.5 Fish Habitat

The extent of Hunters Drain and the Hunters Drain tributary are illustrated in Figure 4. For the purposes of this assessment, Hunters Drain is considered to be providing habitat for a variety of warmwater fish species, however it is also assumed that direct use of Hunters Drain is seasonal, due to the intermittent nature of the watercourse.

Because Hunters Drain is known to support a relatively tolerant fish community, for the purposes of this assessment, a 15m buffer from the watercourse is recommended to be considered when designing future lot boundaries for the subdivision of these lands. It is further recommended that the buffer associated with this watercourse be reassessed after final lot boundaries and development plans have been prepared.

To ensure continuity with the remainder of Hunters Drain, it is recommended that the lands associated with the watercourse in the urban boundary be retained with the portion of the lands outside of the urban boundary.

6.0 CONSTRAINTS ANALYSIS

Natural heritage features identified on the property are limited to fish habitat associated with Hunters Drain, however for the purposes of this constraints analysis, the flood hazard associated with Hunters Drain is also included in this assessment. To assist with preparation of final site design, natural heritage and natural hazard constraints to development on and adjacent to the property have been identified and are discussed further below.

6.1 Areas of High Constraint

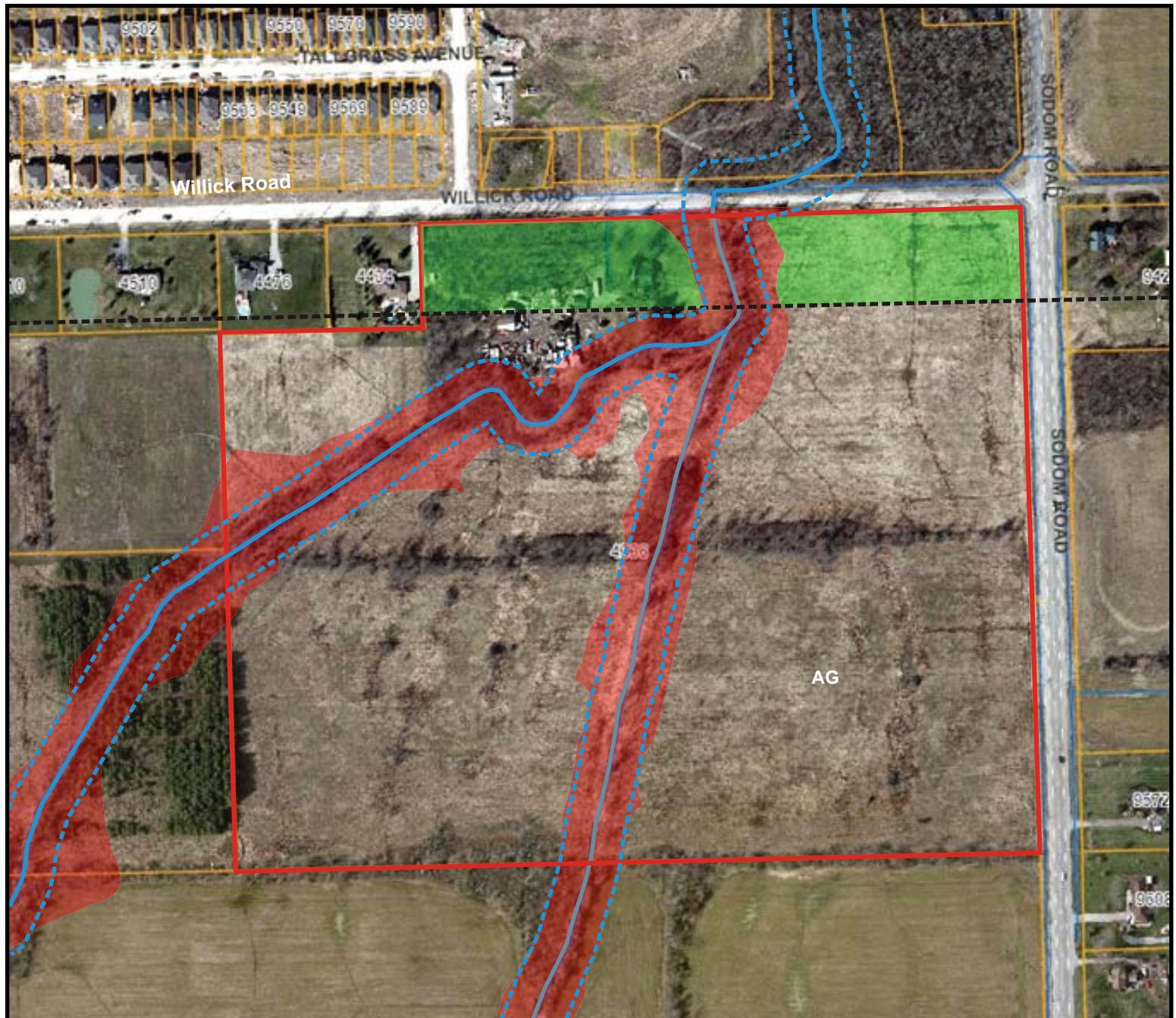
As illustrated in Figure 4, Hunters Drain and the associated flood hazard are located on and adjacent to the Subject Property. For the purposes of this assessment, Hunters Drain, as well as a 15m buffer from the bankfull channel, have been designated as an Area of High Constraint (see Figure 5). The mapped flood hazard associated with Hunters Drain is also considered to be a High Constraint to development, as lot boundaries and structural development are required to be located outside of the hazard.

It should be noted that the mapped flood hazard on this property has not been refined through topographic survey. It is therefore recommended that the extent of the flood hazard and associated development constraint be refined by survey prior to finalizing a development proposal for this property.

It is further recommended that the 15m buffer associated with Hunters Drain be reassessed for appropriateness following final lot creation and the preparation of development concepts.

6.2 Areas of No Constraint

As discussed above, lands within the urban boundary east and west of the flood hazard do not meet the standard of other woodland or other wetland, and do not contain any significant natural heritage features. Therefore, lands with the urban boundary outside of the flood hazard and 15m buffer associated with Hunters Drain are considered to contain no natural heritage constraints to development.



Legend

- Subject Property
- - - - - Urban Boundary
- Watercourses
- - - - - 15m Buffer from Watercourses
- Area of High Constraint
- Area of No Constraint

Notes: Area of high constraint on the property to be further refined with the extent of the flood hazard.

Figure 5
Extent of Natural Heritage Constraints on the Subject Property

**Natural Heritage Constraints Assessment
4336 Willick Road**

Prepared for:

**Achievers Exim
Consultants Inc.**

Prepared by:

COLVILLE 
CONSULTING INC.

Although the intent of this study was to assess the extent of natural heritage constraints within the urban boundary on the property, it is our assessment that the majority of lands outside of the flood hazard and buffer associated with Hunters drain on the remainder of the property are in agricultural production and are not considered to contain any significant natural heritage features.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting Inc. was retained by Achievers Exim Consultants Inc. to complete a natural heritage constraints assessment for the property located at 4336 Willick Road. Based on our assessment, natural heritage features on the property are limited to Hunters Drain. It is our recommendation that lands within 15m of Hunters Drain, as well as the associated flood hazard, be considered high constraints to development. The future subdivision of these lands should be designed to avoid lot boundary encroachment into the area identified as Area of High Constraint in Figure 5. The remainder of the property was in agricultural production at the time of assessment and is considered to not contain any significant natural heritage features.

Respectfully submitted by:



Ian Barrett, M.Sc.
Colville Consulting Inc.

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Appendix A
Vascular Plant Checklist

Plant List for the 4336 Willick Road. Conducted on August 4 and October 6, 2022

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	Grank	COSEWIC	COSSARO	SRank	LRare
<i>Acer rubrum</i>	Red Maple	4	0	G5			S5	
<i>Acer negundo</i>	Manitoba Maple	0	-2	G5			S5	
<i>Acer saccharinum</i>	Silver Maple	5	-3	G5			S5	
<i>Agrimonia gryposepala</i>	Tall Agrimony	2	2	G5			S5	
<i>Agrostis gigantea</i>	Redtop Grass	0	0	G4G5			SE5	
<i>Agrostis stolonifera</i>	Creeping Bent Grass	0	-3	G5			S5	
<i>Alliaria petiolata</i>	Garlic Mustard	0	0	G?			SE5	
<i>Ambrosia artemisiifolia</i>	Common Ragweed	0	3	G5			S5	
<i>Amelanchier arborea</i>	Downy Serviceberry	5	3	G5			S5	
<i>Arctium minus</i> ssp. <i>minus</i>	Common Burdock	0	5	G?			SE5	
<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>	Jack-in-the-pulpit	5	-2	G5			S5	
<i>Asclepias incarnata</i> ssp. <i>incarnata</i>	Swamp Milkweed	6	-5	G5			S5	
<i>Aster ericoides</i> var. <i>ericoides</i>	Heath Aster	4	4	G5			S5	
<i>Aster lanceolatus</i> ssp. <i>lanceolatus</i>	Panicled Aster	3	-3	G5			S5	
<i>Aster macrophyllus</i>	Large-leaved Aster	5	5	G5			S5	
<i>Aster novae-angliae</i>	New England Aster	2	-3	G5			S5	
<i>Aster pilosus</i> var. <i>pilosus</i>	Hairy Aster	4	2	G5			S5	
<i>Aster puniceus</i> var. <i>puniceus</i>	Purple-stem Aster	6	-5	G5			S5	
<i>Athyrium filix-femina</i> var. <i>angustum</i>	Northern Lady Fern	4	0	G5			S5	
<i>Bidens frondosa</i>	Devil's Beggar-ticks	3	-3	G5			S5	
<i>Boehmeria cylindrica</i>	False Nettle	4	-5	G5			S5	
<i>Bromus inermis</i> ssp. <i>inermis</i>	Smooth Brome	0	5	G4G5			SE5	
<i>Carex granularis</i>	Meadow Sedge	3	-4	G5			S5	
<i>Carex intumescens</i>	Bladder Sedge	6	-4	G5			S5	
<i>Carex lupulina</i>	Common Hop Sedge	6	-5	G5			S5	
<i>Carex</i> spp.	Sedge Species							
<i>Carex tenera</i>	Slender Straw Sedge	4	-1	G5			S5	
<i>Carex vulpinoidea</i>	Fox Sedge	3	-5	G5			S5	
<i>Carya ovata</i>	Shagbark Hickory	6	3	G5			S5	
<i>Centaurea jacea</i>	Brown Knapweed	0	5	G?			SE5	
<i>Cephalanthus occidentalis</i>	Buttonbush	7	-5	G5			S5	
<i>Cichorium intybus</i>	Chicory	0	5	G?			SE5	
<i>Cinna arundinacea</i>	Stout Woodreed	7	-3	G5			S4	
<i>Circaea lutetiana</i> ssp. <i>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</i> ssp. <i>racemosa</i>	Grey Dogwood	2	-2	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>Danthonia spicata</i>	Poverty Oat Grass	5	5	G5			S5	

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	Grank	COSEWIC	COSSARO	SRank	LRare
<i>Daucus carota</i>	Wild Carrot	0	5	G?			SE5	
<i>Dipsacus fullonum</i> ssp. <i>sylvestris</i>	Common Teasel	0	5	G?			SE5	
<i>Elymus repens</i>	Quack Grass	0	3	G5			SE5	
<i>Epilobium</i> sp	Willow-herb Species							
<i>Eupatorium maculatum</i> ssp. <i>maculatum</i>	Spotted Joe-pye-weed	3	-5	G5			S5	
<i>Eupatorium perfoliatum</i>	Common Boneset	2	-4	G5			S5	
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	G5			S5	
<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	Common Strawberry	2	1	G5			S5	
<i>Fraxinus pennsylvanica</i>	Green 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>Hamamelis virginiana</i>	Witch-hazel	6	3	G5			S5	
<i>Hypericum perforatum</i>	Common St. John's-wort	0	5	G?			SE5	
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	G5			S5	
<i>Iris</i> sp	Iris Species							
<i>Juglans nigra</i>	Black Walnut	5	3	G5			S4	
<i>Juncus effusus</i> ssp. <i>solutus</i>	Soft Rush	4	-5	G5			S5	
<i>Lactuca</i> sp	Lettuce Species							
<i>Leersia oryzoides</i>	Rice Cut Grass	3	-5	G5			S5	
<i>Ligustrum vulgare</i>	Common Privet	0	1	G?			SE5	
<i>Lonicera X bella</i>	Showy Fly Honeysuckle	0	5	G?			SE2	
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	0	1	G?				
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	G5			S5	
<i>Lythrum salicaria</i>	Purple Loosestrife	0	-5	G5			SE5	
<i>Malus pumila</i>	Common Apple	0	5	G5			SE5	
<i>Melilotus alba</i>	White Sweet-clover	0	3	G5			SE5	
<i>Moehringia lateriflora</i>	Grove Sandwort	7	3	G5			S5	
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	G5			S5	
<i>Oxalis</i> sp	Wood-sorrel Species							
<i>Panicum capillare</i>	Witch Panic Grass	0	0	G5			S5	
<i>Panicum dichotomiflorum</i>	Fall Panic Grass	0	-2	G5			SE5	
<i>Parthenocissus inserta</i>	Thicket Creeper	3	3	G5			S5	
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	G5			S5	
<i>Phragmites australis</i>	Common Reed	0	-4	G5			S5	
<i>Picea abies</i>	Norway Spruce	0	5	G?			SE3	
<i>Pinus strobus</i>	Eastern White Pine	4	3	G5			S5	
<i>Pinus sylvestris</i>	Scots Pine	0	5	G?			SE5	
<i>Plantago lanceolata</i>	Ribgrass	0	0	G5			SE5	
<i>Plantago rugelii</i>	Pale Plantain	1	0	G5			S5	
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Blue Grass	0	1	G?			S5	
<i>Podophyllum peltatum</i>	Mayapple	5	3	G5			S5	
<i>Polygonum sagittatum</i>	Arrow-leaved Tearthumb	5	-5	G5			S4	

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	Grank	COSEWIC	COSSARO	SRank	LRare
<i>Polygonum virginianum</i>	Jumpseed	6	0	G5			S4	
<i>Populus deltoides</i> ssp. <i>deltoides</i>	Eastern Cottonwood	4	-1	G5			S5	
<i>Potentilla simplex</i>	Common Cinquefoil	3	4	G5			S5	
<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	Heal-all	5	5	G5			S5	
<i>Prunus virginiana</i> ssp. <i>virginiana</i>	Choke Cherry	2	1	G5			S5	
<i>Quercus bicolor</i>	Swamp White Oak	8	-4	G5			S4	
<i>Quercus palustris</i>	Pin Oak	9	-3	G5			S4	
<i>Quercus rubra</i>	Red Oak	6	3	G5			S5	
<i>Rhamnus cathartica</i>	Common Buckthorn	0	3	G?			SE5	
<i>Rhus radicans</i> ssp. <i>negundo</i>	Climbing Poison-ivy	5	-1	G5			S5	
<i>Rhus typhina</i>	Staghorn Sumac	1	5	G5			S5	
<i>Rosa multiflora</i>	Multiflora Rose	0	3	G?			SE4	
<i>Rubus canadensis</i>	Smooth Blackberry	7	5	G5			S4?	
<i>Rubus idaeus</i> ssp. <i>melanolasius</i>	Wild Red Raspberry	0	-2	G5			S5	
<i>Salix alba</i>	White Willow	0	-3	G5			SE4	
<i>Salix cinerea</i>	Ashy Willow	0	5	G5			SE2	
<i>Sambucus canadensis</i>	Common Elderberry	5	-2	G5			S5	
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	0	G?			SE5	
<i>Solidago altissima</i> var. <i>altissima</i>	Tall Goldenrod	1	3	G?			S5	
<i>Solidago juncea</i>	Early Goldenrod	3	5	G5			S5	
<i>Solidago nemoralis</i> ssp. <i>nemoralis</i>	Gray Goldenrod	2	5	G5			S5	
<i>Solidago rugosa</i> ssp. <i>rugosa</i>	Rough Goldenrod	4	-1	G5			S5	
<i>Sonchus</i> sp	Sow-thistle Species							
<i>Spiraea alba</i>	Narrow-leaved Meadowsweet	3	-4	G5			S5	
<i>Taraxacum officinale</i>	Common Dandelion	0	3	G5			SE5	
<i>Tilia americana</i>	Basswood	4	3	G5			S5	
<i>Trifolium pratense</i>	Red Clover	0	2	G?			SE5	
<i>Tussilago farfara</i>	Coltsfoot	0	3	G?			SE5	
<i>Typha</i> sp	Cattail Species							
<i>Ulmus americana</i>	White Elm	3	-2	G5?			S5	
<i>Veronica officinalis</i>	Common Speedwell	0	5	G5			SE5	
<i>Viburnum acerifolium</i>	Maple-leaved Viburnum	6	5	G5			S5	
<i>Vicia cracca</i>	Cow Vetch	0	5	G?			SE5	
<i>Vitis riparia</i>	Riverbank Grape	0	-2	G5			S5	

Legend

CoeCons. - Coefficient of Conservatism. Scores for each species range from 0 (low conservatism) to 10 (high conservatism).

A conservatism value of 0 indicates species is widespread. A value of 8, 9 or 10 indicates that a species is a habitat specialist.

CoeWet. - Coefficient of Wetness

5 - Almost always occur in upland areas

4, 3, 2 - Usually occur in upland areas

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

-2, -3, -4 Usually occur in wetlands
-5 Almost always occur in wetlands

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

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

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

Srank - Subnational Rank

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

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

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

S4 — Apparently Secure - Uncommon but not rare

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

SE — Exotic

Lrank - Local Rank

R - Rare, U - Uncommon

Appendix B

Site Photos



Photo 1. Example of vegetation conditons in the FODM11 community and agricultural area in the northwest corner of the property.



Photo 2. Example of vegetation conditions in the CUM1-1 community on the property.



Photo 3. Example of vegetation conditions in the Fill/CUM1-1 community on the property.



Photo 4. Example of vegetation conditions in the WODM5 community on the property.



Photo 5. Example of vegetation conditions in the WODM5 community on the property.



Photo 6. Example of vegetation conditions in the WODM5 community on the property.



Photo 7. Example of vegetation conditions in and adjacent to the primary watercourse on the property.



Photo 8. Example of vegetation conditions in and adjacent to the primary watercourse on the property.



Photo 9. Example of vegetation conditions in and adjacent to the east watercourse on the property.



Photo 10. Example of vegetation conditions in the agricultural area on the southern portion of the property.

Appendix C
Species at Risk Screening

Niagara Falls

Species At Risk Designations	
ENDANGERED	Red
THREATENED	Yellow
SPECIAL CONCERN	Green
EXTIRPATED	White

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.	Species not known to occur in vicinity of Subject 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	Species not known to occur in vicinity of Subject Property.
BIRDS		ESA Protection	Key Habitats Used By Species	Subject Property
Acadian Flycatcher (<i>Empidonax virescens</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	Suitable breeding habitat not present on or adjacent to Subject Property.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Known to Occur	N/A	Prefers deciduous and mixed-deciduous forest; and habitat close to water bodies such as lakes and rivers. They roost in super canopy trees such as Pine.	Suitable breeding habitat not present on or adjacent to Subject Property.
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 breeding habitat not present on or adjacent to Subject Property.
Barn Swallow (<i>Hirundo rustica</i>)	Known to Occur	Species and General Habitat Protection	Prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Suitable breeding habitat not present on or adjacent to Subject 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 breeding habitat not present on or adjacent to Subject Property.
Chimney Swift (<i>Chaetura pelagica</i>)	Known to Occur	Species and General Habitat Protection	Historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Suitable breeding habitat not present on or adjacent to Subject Property.
Common Nighthawk (<i>Chordeiles minor</i>)	Known to Occur	N/A	Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops)	Suitable breeding habitat not present on or adjacent to Subject Property.
Eastern Meadowlark (<i>Sturnella Magna</i>)	Known to Occur	Species and General Habitat Protection	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Suitable breeding habitat not present on or adjacent to Subject Property.
Eastern Whip-poor-will (<i>Caprimulgus vociferus</i>)	Known to Occur	Species and General Habitat Protection	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Suitable breeding habitat not present on or adjacent to Subject Property.
Eastern Wood-Pewee (<i>Contopus virens</i>)	Known to Occur	N/A	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Typical breeding habitat not present on or adjacent to property.

Golden-winged Warbler (<i>Vermivora chrysoptera</i>)	Known to Occur	N/A	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Suitable breeding habitat not present on property.
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	Historically Known to Occur	Species and General Habitat Protection	Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Suitable breeding habitat not present on or adjacent to Subject Property.
Least Bittern (<i>Ixobrychus exilis</i>)	Known to Occur	Species and General Habitat Protection	generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Suitable breeding habitat not present on or adjacent to Subject Property.
Northern Bobwhite (<i>Colinus virginianus</i>)	Historically Known to Occur	Species and General Habitat Protection	Generally inhabits a variety of edge and grassland type - habitats including nonintensively farmed agricultural lands.	Suitable breeding habitat not present on or adjacent to Subject Property.
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 breeding habitat not present on or adjacent to Subject Property.
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	Typical breeding habitat not present on or adjacent to property.
Wood Thrush (<i>Hylocichla mustelina</i>)	Known to Occur	N/A	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Typical breeding habitat not present on or adjacent to property.
Yellow-breasted Chat (<i>Icteria virens</i>)	Known to Occur	Species and General Habitat Protection	Generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Suitable breeding habitat not present on or adjacent to Subject Property.

FISH		Key Habitats Used By Species		Subject Property
American Eel (<i>Anguilla rostrata</i>)	Known to Occur	Species and General Habitat Protection	All fresh water, estuaries and coastal marine waters that are accessible to the Atlantic Ocean; 12-mile Creek watershed and Lake Ontario	Potential habitat not present on or adjacent to Subject 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 or adjacent to Subject Property
Greater Redhorse (<i>Moxostoma valenciennei</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 or adjacent to Subject Property
Lake Chubsucker (<i>Erimyzon suetta</i>)	Known to Occur	Species and General Habitat Protection	Generally prefer marshes, wetlands and lakes with clear, still waters and abundant aquatic plants	Potential habitat not present on or adjacent to Subject Property
Lake Sturgeon (<i>Acipenser fulvescens</i>)	Known to Occur	Species and General Habitat Protection	Generally inhabits the bottoms of shallow areas of large freshwater lakes and rivers	Potential habitat not present on or adjacent to Subject 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	Significant potential habitat not present on or adjacent to Subject Property
Rusty-patched Bumble Bee (<i>Bombus affinis</i>)	Formerly Occurred and May Still Occur	Species and General Habitat Protection	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 or adjacent to Subject Property

West Virginia White (<i>Pieris virginiensis</i>)	Known to Occur	N/A	Generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (<i>Cardamine diphylla</i>), which is a small, spring-blooming plant of the forest floor.	Potential habitat not present on or adjacent to Subject Property
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MAMMALS		ESA Protection	Key Habitats Used By Species	Subject Property
Gray Fox (<i>Urocyon cinereoargenteus</i>)	Suspected to Occur	Species and General Habitat Protection	Generally prefers deciduous forests, marshes, swampy areas, and urban areas	Species does not likely occur in area.
Eastern small-footed Myotis (<i>Myotis leibii</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	No significant potential roosting or maternal habitat present on property.
Little Brown Myotis (<i>Myotis lucifugus</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	No significant potential roosting or maternal habitat present on property.
Northern Myotis (<i>Myotis septentrionalis</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	No significant potential roosting or maternal habitat present on property.
Tri-colored Bat (<i>Perimyotis subflavus</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures.	No significant potential roosting or maternal habitat present on property.

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

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

PLANTS		ESA Protection	Key Habitats Used By Species	Subject Property
American Chestnut (<i>Castanea dentata</i>)	Known to Occur	Species and General Habitat Protection	Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Suitable habitat not present on property. Not detected during botanical inventory.
American Columbo (<i>Frasera carolinensis</i>)	Known to Occur	Species and General Habitat Protection	most commonly associated with open deciduous forested slopes, thickets and clearings; grows in a variety of relatively stable habitats as well as on a wide variety of soils	Suitable habitat not present on property. Not detected during botanical inventory.
American Ginseng (<i>Panax quinquefolius</i>)	Known to Occur	Species and General Habitat Protection	Grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Suitable habitat not present on property. Not detected during botanical inventory.
American Water-willow (<i>Justicia americana</i>)	Known to Occur	Species and General Habitat Protection	Generally grows along shorelines and sometimes in nearby wetlands, as well as along streams where the bottom is composed of gravel, sand or organic matter.	Suitable habitat not present on property. Not detected during botanical inventory.

Black Gum (<i>Nyssa sylvatica</i>)	Known to Occur (S3)	N/A	Dry to wet woods and savannahs.	Suitable habitat not present on property. Not detected during botanical inventory.
Broad Beech Fern (<i>Phegopteris hexagonoptera</i>)	Known to Occur	N/A	generally inhabits shady areas of beech and maple forests where the soil is moist or wet	Suitable habitat not present on property. Not detected during botanical inventory.
Butternut (<i>Juglans cinerea</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Suitable habitat not present on property. Not detected during botanical inventory.
Common Hoptree (<i>Ptelea trifoliata</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in sandy soils in areas with a lot of natural disturbance - such as the outer edge of shoreline vegetation, sand spits, and sand points.	Suitable habitat not present on property. Not detected during botanical inventory.
Deerberry (<i>Vaccinium stamineum</i>)	Known to Occur	Species and General Habitat Protection	Generally occurs on sandy and welldrained soil, often in dry open woodlands (Niagara Gorge)	Suitable habitat not present on property. Not detected during botanical inventory.
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 property. Not detected during botanical inventory.
Drooping Trillium (<i>Trillium flexipes</i>)	Historically Known to Occur	Species Protection and Habitat Regulation	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Suitable habitat not present on property. Not detected during botanical inventory.
Eastern Flowering Dogwood (<i>Cornus florida</i>)	Known to Occur	Species Protection and Habitat Regulation	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Suitable habitat not present on property. Not detected during botanical inventory.
Red Mulberry (<i>Morus rubra</i>)	Known to Occur	Species Protection and Habitat Regulation	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	Suitable habitat not present on property. Not detected during botanical inventory.
Round-leaved Greenbrier (<i>Smilax rotundifolia</i>)	Known to Occur	Species Protection and Habitat Regulation	Generally grows in open moist to wet woodlands, oftengrowing on sandy soils . Habitat is variable.	Suitable habitat not present on property. Not detected during botanical inventory.
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 property. Not detected during botanical inventory.
Spotted Wintergreen (<i>Chimaphila maculata</i>)	Known to Occur	Species and General Habitat Protection	Generally grow in sandy habitats in dry-mesic oak-pine woods.	Suitable habitat not present on property. Not detected during botanical inventory.
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 property. Not detected during botanical inventory.
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.	Suitable habitat not present on property. Not detected during botanical inventory.

REPTILES	ESA Protection	Key Habitats Used By Species	Subject Property	
Blanding's Turtle (<i>Emydonidea blandingii</i>)	Known to Occur	Species and General Habitat Protection	Generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.	Potential habitat not present on or adjacent to Subject 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.	Potential habitat not present on or adjacent to Subject 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.	Potential habitat not present on or adjacent to Subject 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.	Potential habitat not present on or adjacent to Subject Property

Appendix D
Significant Wildlife Habitat Summary Table

Assessment of potential Significant Wildlife Habitat on the Subject 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 Subject Property
Shorebird Migratory Stopover Area	Absent	Suitable habitat not present on Subject Property
Raptor Wintering Area	Absent	Suitable habitat not present on Subject Property
Bat Hibernacula	Absent	Suitable overwintering habitat not present on Subject Property
Bat Maternity Colonies	Absent	Potential roosting habitat not present in trees in Study Area
Turtle Wintering Areas	Absent	Suitable overwintering habitat not present on Subject Property
Reptile Hibernaculum	Absent	No evidence of snake use or hibernacula observed on Subject Property
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Suitable habitat not present on Subject Property
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Suitable habitat not present on Subject Property
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Suitable habitat not present on Subject Property
Migratory Butterfly Stopover Areas	Absent	Suitable habitat not present on Subject Property
Landbird Migratory Stopover Areas	Absent	Significant potential habitat not present on Subject Property
Deer Winter Congregation Areas	Absent	Suitable habitat not present on Subject Property
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on Subject Property
Sand Barren	Absent	Habitat type not present on Subject Property
Alvar	Absent	Habitat type not present on Subject Property
Old Growth Forest	Absent	Habitat type not present on Subject Property
Savannah	Absent	Habitat type not present on Subject Property

Tallgrass Prairie	Absent	Habitat type not present on Subject 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 Subject Property
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Absent	Suitable habitat not present on Subject Property
Woodland Raptor Nesting Habitat	Absent	Suitable habitat not present on Subject Property
Turtle Nesting Areas	Absent	Suitable habitat not present on Subject Property
Seeps and Springs	Absent	No seeps or springs present on Subject Property
Amphibian Breeding Habitat (Woodland)	Absent	Suitable habitat not present on Subject Property
Amphibian Breeding Habitat (Wetlands)	Absent	Suitable habitat not present on Subject Property
Woodland Area-Sensitive Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property

HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH

Marsh Breeding Bird Habitat	Absent	Suitable habitat not present on Subject Property
Open Country Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
Shrub/Early Successional Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
Terrestrial Crayfish	Absent	Suitable habitat not present on Subject Property
Special Concern and Rare Wildlife Species	Absent	Subject Property not likely providing habitat for special concern wildlife species.

ANIMAL MOVEMENT CORRIDORS

Amphibian Movement Corridors	Absent	Suitable habitat not present on Subject Property
Bat Migratory Stopover Area	Absent	Suitable habitat not present on Subject 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.