NATURAL HERITAGE CHARACTERIZATION
SHAYNE AVENUE PROPERTIES, TOWN OF FORT ERIE

Prepared for:

Ms. Lisa Duchart

Prepared by:

Colville Consulting Inc.

C20024
October 2020

COLVILLE CONSULTING INC.

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Ms. Lisa Duchart to prepare a natural heritage characterization for a series of properties fronting onto Shayne Avenue, between Edgewood Avenue and Evelyn Avenue, in the Town of Fort Erie. This report is intended to summarize the results of field inventories conducted on and adjacent to the Subject Lands and characterize natural heritage features on the properties. This report is intended to identify any natural heritage features that would be considered Environmental Protection Area (EPA) or Environmental Conservation Area (ECA) within the Niagara Region Policy Plan or Town of Fort Erie Official Plan. This report will also serve to identify and potential natural heritage constrains on the property, as well as recommend mitigation measures to be considered when designing future development opportunities for these lands.

1.1 Subject Lands

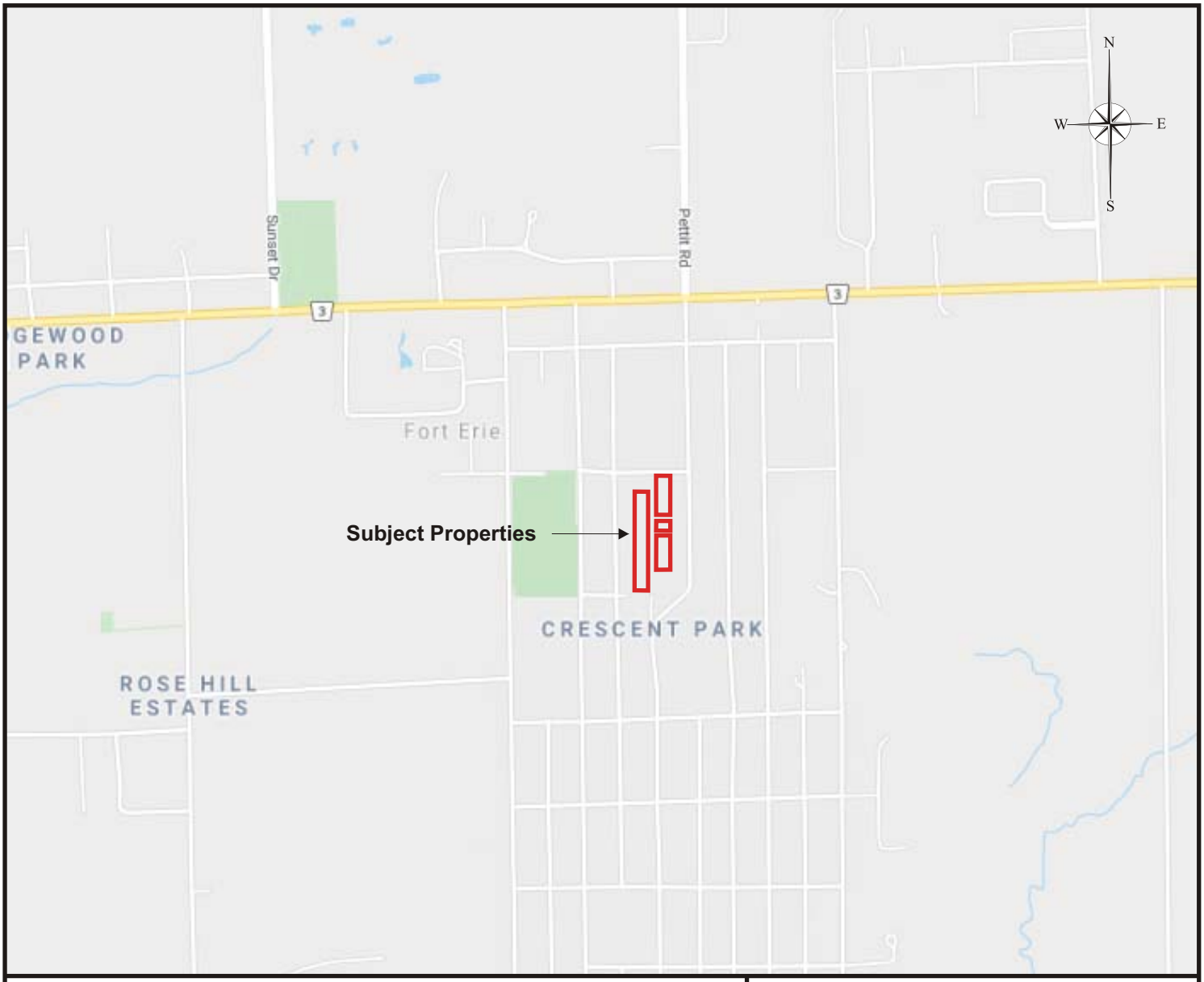
The Subject Lands are comprised of four properties that front onto Shayne Avenue, between Edgewood Avenue and Evelyn Avenue, in the Town of Fort Erie (see Figure 1). The four properties total approximately 1.54ha (3.81 acres) in size. The Subject Lands are generally flat, however it is possible that surface drainage may be directed to ditching adjacent to the unopened portion of Shayne Avenue.

Based a review of air photos, the Subject Lands were formerly cleared for agricultural purposes, however portions of the properties have succeeded to thicket, with scattered trees primarily located along Shayne Avenue. Historical and ongoing mowing by adjacent residents has resulted in portions of these lands consisting of manicured lawn and cultural meadow.

Based on our review of background information, it is our understanding that no natural heritage features have been mapped on or adjacent to the Subject Lands. No portion of these properties are currently identified as EPA or ECA in the Niagara Region Policy Plan, and no portion of the lands are identified as Environmental Protection or Environmental Conservation in Schedule A of the Town of Fort Erie Official Plan.

1.2 Scope of Project

The intent of this project is to assess botanical species composition and wildlife use of the properties, with the intent of delineating the extent of potential natural heritage features on and adjacent to the properties.



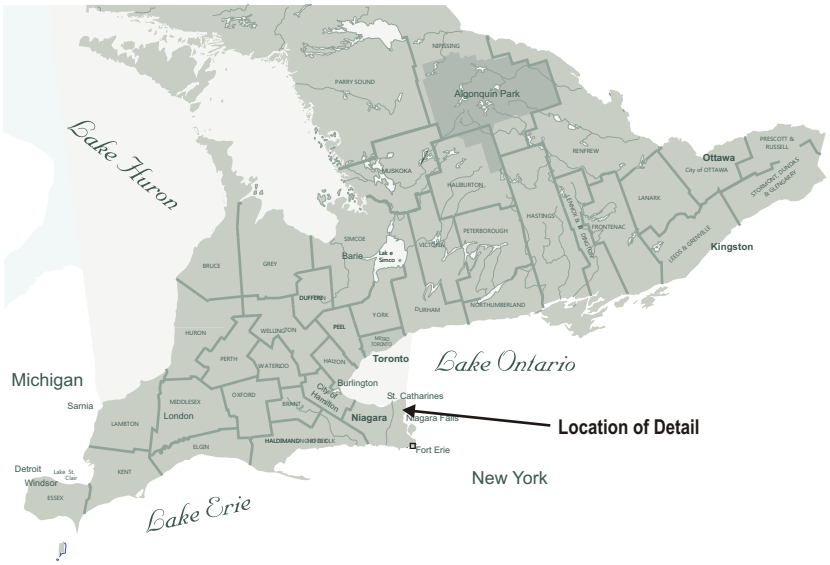


Figure 1
Location of Subject Properties

Natural Heritage Characterization Report
Shayne Avenue Properties

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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:

- Niagara Region Core Natural Heritage Map (ROM 2008);
- Ontario Ministry of Natural Resources and Forestry Species at Risk List for the Town of Fort Erie (MNRF 2018);
- Background data available from the NPCA and Ministry of Natural Resources and Forestry (MNRF); and
- Town of Fort Erie Natural Areas Inventory (Dougan and Associates 2003).

2.2 Field Inventories and Methodology

In order to identify potential natural heritage constraints on and adjacent to the Subject Lands, the following inventories and assessments were completed:

1) Spring and early-summer botanical inventories of the properties and adjacent lands;
2) Assessment and description vegetation communities on the properties using the Ecological Land Classification System for Southern Ontario;
3) Breeding bird surveys on and adjacent to Subject Lands;
4) An assessment of potential bat maternity colony habitat on the properties using methods outlined by MNRF; and
5) Document incidental wildlife observations during site visits, including any species of insects that may be considered locally rare of 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 undertaken on May 25 and June 25, 2020. 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 illustrated on Figure 2. A vascular plant checklist is provided in Appendix A. Photos of the properties are provided in Appendix B.

3.1.1 Botanical Inventories

A total of 78 plant species were documented on and adjacent to the Subject Lands during botanical inventories. None of the species observed are considered at risk provincially, or considered locally rare or uncommon.

3.1.2 Vegetation Communities

Vegetation over the majority of the property consists of a mix of buckthorn thicket and cultural meadow, with a portion of the meadow area regularly mowed. Scattered trees are located along the road

Legend

	Subject Properties
CUM1-1	Dry - Moist Old Field Meadow Type
THDM2-6	Buchthorn Deciduous Shrub Thicket Type

Figure 2
Extent of Vegetation Communities on the Subject Lands

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Shayne Avenue Properties

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allowance and sparsely scattered along property boundaries. Descriptions of the principal vegetation communities are provided below.

Buckthorn Deciduous Shrub Thicket Type (THDM2-6)

The relatively flat terrain and clay loam soils of this community support a Buckthorn Deciduous Shrub Thicket Type (THDM2-6). There are small patches and sparsely scattered trees in the canopy layer, including the occasional Silver Maple, with lesser amounts of Green Ash. European Buckthorn dominates a very thick sub-canopy layer, followed by the occasional Green Ash. The ground layer is very sparsely vegetated, with bare soil occurring throughout most of the community. Small colonies of Fowl Mannagrass are present, followed by scattered Green Ash and European Buckthorn. Many of the Green Ash present in this community are dead or showing signs of decline due to Emerald Ash Borer. The road allowance that runs north-south through this community is maintained by occasional mowing, however the canopy is generally contiguous.

Dry-Moist Old Field Meadow Type (CUM1-1)

Located on the northern portion of the Subject Lands is an occasionally mowed Dry-Moist Old Field Meadow Type (CUM1-1). This community is dominated by Brown Knapweed, followed by lesser amounts of Timothy, Red Clover and Kentucky Bluegrass. Some walking trails appear to be regularly mowed by adjoining residents.

3.2 Wildlife and Wildlife Habitat

3.2.1 Breeding Bird Survey

Breeding bird surveys were conducted on May 25 and June 25, 2020 and intended to inventory breeding birds on and adjacent to the Subject Properties. Surveys were completed under suitable weather conditions with little to no wind or precipitation and temperatures above 5^{o}C. All birds seen or heard calling were recorded and location documented.

A total of 29 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, with the exception of 4 non-native species (SNA), 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 with the exception of the uncommon summer resident Ruby-throated Hummingbird and uncommon permanent resident Carolina Wren, Red-bellied Woodpecker (Niagara Natural Areas Inventory, 2010).

3.2.2 Wildlife Observations

Incidental wildlife observations including signs were recorded during each visit to the Subject Lands, as well as on November 15, 2019, April 17, May 26, 2020 and August 12, 2020. Species observed during these visits were American Toad Grey Squirrel, Red Squirrel, Eastern Cottontail, Virginia Opossum, Skunk, Raccoon and Cabbage White Butterfly.

Table 1: Results of breeding bird surveys on and adjacent to the Shayne Avenue Properties.

Species	S Rank	Niagara Status*	Subject Lands	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
American Crow	S5B	C R		X	PO	H
American Goldfinch	S5B	C R	X		PO	S
American Robin	S5B	VC R	X	X	CO	FY
Baltimore Oriole	S4B	C R	X	X	CO	FY
Black-capped	S5	C P	X		PO	S
Blue Jay	S5	VC P	X		PO	H
Brown-headed	S4B	VC R	X		PO	
Canada Goose	S5	VC P	X		OBS	X
Carolina Wren	S4	U P	X		PO	S
Cedar Waxwing	S5B	C R	X		PO	H
Chipping Sparrow	S5B	C R	X		PO	S
Common Grackle	S5B	VC R	X	X	CO	FY
Downy Woodpecker	S5	C P	X		PO	S
Eastern Phoebe	S5B	C R	X		PO	H
European Starling	SNA	VC P	X		CO	FY
Gray Catbird	S4B	C R	X		PO	S
House Finch	SNA	C P	X		PO	S
House Sparrow	SNA	VC P	X	X	PO	S
Killdeer	S5B,S5N	C R	X		PO	S
Mourning Dove	S5	VC R	X		PO	S
Northern Cardinal	S5	C P	X		PR	P
Northern Flicker	S4B	C R	X		CO	AE
Red-bellied	S4	U P	X		PO	S
Red-winged	S4	VC R	X	X	PO	S
Ring-billed Gull	S5B,S4N	VC R	X		OBS	X
Rock Dove	SNA	VC P	X		OBS	X
Ruby-throated	S5B	U R	X		PO	S
Song Sparrow	S5B	VC R	X		PO	S
Warbling Vireo	S5B	C R	X	X	PR	A
Yellow Warbler	S5B	C R	X		PO	S

* 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

3.2.3 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 April 17, 2020 using methods described in MNRF (2017). The site visit was intended to inventory any potential roosting habitat on the properties.

From our observations, no significant cavity trees were located on the Subject Lands and any potential roosting habitat was limited to loose bark on dead Ash trees. As such, the Subject Lands do not appear to provide any significant roosting opportunities for bats.

4.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

4.1 Species at Risk Habitat

4.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered or Threatened species were observed on or adjacent to the Subject Lands during inventories and surveys. Additionally, our review of Natural Heritage Information Center (NHIC) data indicates that no Endangered or Threatened species are known to occur in the vicinity of these properties.

A species at risk screening conducted using known occurrence information in the Town of Fort Erie (MNRF 2018) indicates that potential habitat for Endangered or Threatened species on these properties is limited to loose and exfoliating bark that is present on dead ash trees, which could be providing potential roosting habitat for bats (see Appendix C). Since this type of habitat is not limited or unique in the Town of Fort Erie, and it is our conclusion that significant habitat of Endangered or Threatened species is not present on the Subject Lands.

4.1.2 Species of Conservation Concern

No Species of Conservation Concern were documented on or adjacent to the Subject Lands. A review of available NHIC data indicates that Species of Conservation Concern previously documented in the vicinity of the properties are limited to Biennial Gaura (S3). Although potential habitat for this species is present on the properties, this this species was not observed during botanical inventories.

Although not listed in the NHIC search, potential habitat for Eastern Wood-pewee, Redheaded Woodpecker and Wood Thrush is located on the Subject Lands. Since none of these species were documented during breeding bird surveys, it is our conclusion that these species are not utilizing potential habitat on these lands.

Based on the assessments completed, it is our conclusion that the Subject Lands are not providing habitat for Species of Conservation Concern.

4.2 Significant Wildlife Habitat

4.2.1 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 properties 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 D.

4.2.2 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 Lands.

4.2.3 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 habitats for Wildlife are present on the Subject Lands.

4.2.4 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.

The Subject Lands are not providing habitat for Species of Conservation Concern.

4.2.5 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.

As illustrated in Figure 4, the thicket and meadow communities on these lands are surrounded by existing residential land uses. Since these lands are isolated from any other natural areas, no portion of the Subject Lands form part of a migration corridor.

4.3 Provincially Significant Wetlands

No wetland features were identified on the Subject Lands and no provincially significant wetlands (PSW) are located on or adjacent to these properties.

4.4 Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interest (ANSI) are located on or adjacent to the properties.

4.5 Significant Woodlands

No natural heritage features are currently mapped on the Subject Lands. Our assessment of these properties indicates that vegetation communities on these parcels consists primarily of buckthorn thicket, along with areas of manicured lawn and cultural meadow. No portion of the properties contains tree canopy sufficient to be considered woodland, which is consistent with current mapping for these lands.

5.0 ENVIRONMENTAL POLICY

Although no natural heritage designations are currently assigned to these properties, the primary intent of this assessment is to determine if any portion of the Subject Lands meets the criteria to be considered a natural heritage feature. An assessment of the Subject Lands in the context of polices of the Niagara Region Policy Plan and the Town of Fort Erie Official Plan is provide below.

5.1 Niagara Region Policy Plan

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

Among other important environmental considerations, the policies address the Region's natural vegetation and wildlife, water resources, landforms, geology and soils, and core natural heritage features such as woodlands, wetlands and fish habitat. Those natural areas considered to be of provincial importance, as identified in the PPS, are identified in the Region's Core Natural Heritage System. The following components are identified in the Region's Core Natural Heritage System:

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

The Niagara Region Official Plan states that Environmental Protection Areas (EPA) include: provincially significant wetlands; provincially significant Life Science ANSIs; and significant habitat of endangered and threatened species. Within the Greenbelt Natural Heritage System, Environmental Protection Areas also include wetlands, significant valleylands, significant woodlands, significant wildlife habitat, habitat of species of concern, publicly owned conservation lands, savannahs and tallgrass prairies, and alvars.

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

Policy 7.B.1.7 of the Niagara Region Official Plan states that the boundaries of Core Natural Areas, Potential Natural Heritage Corridors and Fish Habitat are shown on the Core Natural Heritage Map (Regional Municipality of Niagara 2008). Boundaries may be defined more precisely through Watershed or Environmental Planning Studies, Environmental Impact Studies, or other studies prepared to the satisfaction of the Region and may be mapped in more detail in local official plans and zoning by-laws.

Based on our assessment, no portion of the Subject Properties contains features consistent with and EPA or ECA. Additionally, no core natural heritage features are located adjacent to the properties. Our inventories and assessments verifies the accuracy of Niagara Region mapping, which indicates that no natural heritage features are present on or adjacent to the Subject Lands (see Figure 3).

5.2 Town of Fort Erie Official Plan

Town of Fort Erie's environmental policies are contained within the Town of Fort Erie Official Plan (OP) and are intended to be complimentary to Provincial and Regional policies. Through the implementation of policies within the OP, the Town of Fort Erie intends to participate in the protection and conservation of natural heritage features in the Town.

Town of Fort Erie Natural Heritage Policies are contained within Section 8 of the Official Plan and includes polices specific to Environmental Protection Areas (EPA's) and Environmental Conservation Areas (ECA's). Section 8.2 states that areas designated as Environmental Protection on Schedule "A" include Provincially Significant Wetland Areas, Areas of Natural and Scientific Interest, the Habitat of, Threatened, and Endangered Species, Species of Special Concern and Natural Hazard areas as identified on Schedules "C" and "C1".

Section 8.3 states that areas designated as Environmental Conservation include Locally Significant Natural Areas, Locally Significant Wetlands, Woodlands, in some cases Valleylands, Meadows, and Rehabilitation Areas, which include corridor and linkages. The Environmental Conservation designations

Legend

Subject Properties

Figure 3
Extent of Significant Natural Heritage Features on the Subject Lands

Natural Heritage Characterization Report
Shayne Avenue Properties

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Notes: No portion of the Subject Properties meets the criteria to be considered EPA or ECA.
No potential natural heritage constraints located on or adjacent to the Subject Lands.

are intended to conserve natural habitat as well as to complement land use designations set out on the General Land Use Plan in Schedule "A".

Mapping Schedule A in the Town of Fort Erie Official Plan indicates that no portion of the Subject Lands has been identified as EPA or ECA. Additionally, Schedule C of the OP indicates that no natural heritage features have been identified on the Subject Lands. Our inventories and assessments confirm that no natural heritage features are present on of the Subject Lands.

5.3 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. Based on our review of background mapping, no portion of the Subject Lands have been mapped as NPCA regulated area. Our assessment confirms that no features of NPCA interest are located on or adjacent to the Subject Properties.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting Inc. was retained by Ms. Lisa Duchart to complete a characterization of natural heritage features on the properties located adjacent to Shayne Avenue. Background mapping available for the properties indicated that the no portion of the lands had been designated as EPA or ECA in the Niagara Region Policy Plan, or Environmental Protection or Environmental Conservation in the Town of Fort Erie Official Plan. Our assessments indicate that vegetation on the properties consists primarily of buckthorn thicket and cultural meadow, which are providing habitat for wildlife species that are common in urban areas of the Region.

From our assessment, it is our conclusion that no natural heritage features are located on these lands, and therefore no portion of the Subject Lands contains a feature consistent with EPA or ECA. Accordingly, it is our conclusion that no natural heritage constraints to development area located on these properties.

Despite not containing any natural heritage features, it is recommended that the following mitigation measures be considered when planning and developing the Subject Lands.

- 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 March 15 or after October 31 to minimize impacts to wildlife that may be utilizing the thicket and meadow on the properties.
- Adequate sediment and erosion controls should be installed prior to any construction or site alteration works on the Subject Lands to prevent sediment from being mobilized and leaving the work area.

Respectfully submitted by:

Ian Barrett, M.Sc.
Colville Consulting Inc.

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Appendix A

List of botanical species

Botanical List for Shayne Ave Properties, Fort Erie, ON. Conducted on May 25 and June 25, 2020

SCIENTIFIC_NAME	ENGLISH_COMMON_NAME	S_RANK	COSEWIC	COSSARO	L_RANK	G_RANK	N_RANK	EXOTIC_STATUS	COEFF_CONSERVATISM	COEFF_WETNESS	THDM2-6	CUM1-1	Notes
Acer negundo	Manitoba Maple	S5				G5	N5		0	0	X		
Acer platanoides	Norway Maple	SNA				GNR	NNA	SE5		5	X		
Acer saccharinum	Silver Maple	S5				G5	N5		5	-3	X	X	
Alliaria petiolata	Garlic Mustard	SNA				GNR	NNA	SE5		0	X	X	
Allium vineale	Wild Garlic	SNA				GNR	NNA	SE2		3		X	
Cardamine pratensis	Meadow Bittercress	SNA				GU	NNA	SE1		-3	X		
Carex sp	Sedge sp (Ovales)										X	X	
Carex sp	Sedge sp											X	
Carex vulpinoidea	Fox Sedge	S5				G5	N5		3	-5		X	
Centaurea jacea	Brown Knapweed	SNA				GNR	NNA	SE5		5		X	
Circaea canadensis	Broad-leaved Enchanter's Nightshade	S5				G5	N5		2	3	X		
Cornus racemosa	Grey Dogwood	S5				G5	N5		2	0	X	X	
Crataegus sp	Hawthorn sp										X		
Dactylis glomerata	Orchard Grass	SNA				GNR	NNA	SE5		3		X	
Daucus carota	Wild Carrot	SNA				GNR	NNA	SE5		5		X	
Dipsacus fullonum	Common Teasel	SNA				GNR	NNA	SE5		3		X	
Erigeron annuus	Annual Fleabane	S5				G5	N5		0	3		X	
Fragaria virginiana	Wild Strawberry	S5				G5	N5		2	3		X	
Fraxinus pennsylvanica	Red Ash	S4				G5	N5		3	-3	X	X	
Geum canadense	Canada Avens	S5				G5	N5		3	0	X		
Geum sp	Avens sp											X	
Glechoma hederacea	Ground-ivy	SNA				GNR	NNA	SE5		3		X	
Glyceria striata	Fowl Mannagrass	S5				G5	N5		3	-5	X		
Impatiens capensis	Spotted Jewelweed	S5				G5	N5		4	-3	X	X	
Juglans nigra	Black Walnut	S4?				G5	N4?		5	3	X		
Juncus effusus	Soft Rush	S5				G5	N5		4	-5		X	
Juncus tenuis	Path Rush	S5				G5	N5		0	0	X	X	
Leucanthemum vulgare	Oxeye Daisy	SNA				GNR	NNA	SE5		5		X	
Ligustrum vulgare	European Privet	SNA				GNR	NNA	SE5		3	X		
Lonicera tatarica	Tatarian Honeysuckle	SNA				GNR	NNA	SE5		3	X	X	
Lotus corniculatus	Garden Bird's-foot Trefoil	SNA				GNR	NNA	SE5		3		X	
Lycopus americanus	American Water-horehound	S5				G5	N5		4	-5		X	
Lythrum salicaria	Purple Loosestrife	SNA				G5	NNA	SE5		-5		X	
Medicago lupulina	Black Medick	SNA				GNR	NNA	SE5		3		X	
Morus alba	White Mulberry	SNA				GNR	NNA	SE5		0	X		
Moss sp	Moss sp										X		
Onoclea sensibilis	Sensitive Fern	S5				G5	N5		4	-3		X	
Oxalis sp	Wood-sorrel sp										X		
Parthenocissus quinquefolia	Virginia Creeper	S4?				G5	N4?		6	3	X	X	
Penstemon digitalis	Foxglove Beardtongue	S4				G5	N4N5		6	0	X		
Phleum pratense	Common Timothy	SNA				GNR	NNA	SE5		3		X	
Phragmites australis ssp. australis	European Reed	SNA				G5T5	NNA	SE5		-3		X	
Plantago lanceolata	English Plantain	SNA				G5	NNA	SE5		3		X	
Plantago rugelii	Rugel's Plantain	S5				G5	N5		1	0		X	
Poa pratensis	Kentucky Bluegrass	S5				G5	N5		0	3	X	X	
Populus deltoides	Eastern Cottonwood	S5				G5	N5		4	0	X		
Potentilla recta	Sulphur Cinquefoil	SNA				GNR	NNA	SE5		5		X	
Prunus avium	Sweet Cherry	SNA				GNR	NNA	SE4		5		X	
Prunus virginiana var. virginiana	Chokecherry	S5				G5T5	N5		2	3	X	X	
Ranunculus acris	Common Buttercup	SNA				G5	NNA	SE5		0		X	
Ranunculus sp	Buttercup sp											X	
Rhamnus cathartica	European Buckthorn	SNA				GNR	NNA	SE5		0	X	X	
Rhus typhina	Staghorn Sumac	S5				G5	N5		1	3	X	X	
Rosa multiflora	Multiflora Rose	SNA				GNR	NNA	SE5		3	X	X	
Rubus allegheniensis	Allegheny Blackberry	S5				G5	N5		2	3	X		
Rubus occidentalis	Black Raspberry	S5				G5	N5		2	5	X	X	
Rumex crispus	Curled Dock	SNA				GNR	NNA	SE5		0		X	
Salix discolor	Pussy Willow	S5				G5	N5		3	-3	X		
Scirpus sp	Bulrush sp											X	
Sisyrinchium angustifolium	Narrow-leaved Blue-eyed-grass	S4				G5	N4N5		6	0		X	

SCIENTIFIC_NAME	ENGLISH_COMMON_NAME	S_RANK	COSEWIC	COSSARO	L_RANK	G_RANK	N_RANK	EXOTIC_STATUS	COEFF_CONSERVATISM	COEFF_WETNESS	THDM2-6	CUM1-1	Notes
Solanum dulcamara	Bittersweet Nightshade	SNA				GNR	NNA	SE5		0	X	X	
Solidago canadensis	Canada Goldenrod	S5				G5	N5		1	3	X	X	
Symphyotrichum novae-angliae	New England Aster	S5				G5	N5		2	-3		X	
Symphyotrichum sp	Aster sp											X	
Symphyotrichum urophyllum	Arrow-leaved Aster	S4				G4G5	N4		6	5		X	
Taraxacum officinale	Common Dandelion	SNA				G5	N5	SE5		3		X	
Toxicodendron radicans	Poison Ivy	S5				G5	N5		2	0	X		
Trifolium pratense	Red Clover	SNA				GNR	NNA	SE5		3		X	
Trifolium repens	White Clover	SNA				GNR	NNA	SE5		3		X	
Tussilago farfara	Coltsfoot	SNA				GNR	NNA	SE5		3		X	
Ulmus americana	White Elm	S5				G4	N5		3	-3	X		
Verbena hastata	Blue Vervain	S5				G5	N5		4	-3		X	
Veronica officinalis	Common Speedwell	SNA				G5	NNA	SE5		5	X		
Viburnum opulus ssp. opulus	Cranberry Viburnum	SNA				G5TNR	NNA	SE3?		-3	X		
Viburnum recognitum	Smooth Arrowwood	S4				G4G5	N4		7	0	X		
Vicia cracca	Tufted Vetch	SNA				GNR	NNA	SE5		5		X	
Vitis riparia	Riverbank Grape	S5				G5	N5		0	0	X	X	

Legend

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.
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

Appendix B

Site Photos

Photo 1. Example of vegetaiton conditions along Shayne Avenue between the Subject Lands.

Photo 2. Example of vegetation conditions in the buckthorn thicket communities on the Subject Lands.

Photo 3. Example of vegetation conditions in the buckthorn thicket communities on the Subject Lands.

Photo 4. Example of vegetation conditions in the buckthorn thicket communities on the Subject Lands.

Photo 5. Example of vegetation conditions in the CUM1-1/mowed lawn communities on the Subject Lands.

Photo 6. Example of vegetation conditions in the CUM1-1/mowed lawn communities on the Subject Lands.

Appendix C

Species at Risk Screening

Fort Erie

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

AMPHIBIANS		ESA Protection	Key Habitats Used By Species	Subject Property
Fowler's Toad (*Anaxyrus fowleri*)	Known to Occur	*Species Protection and **Habitat Regulation***	generally found in sand dunes and lakeshore habitats; found in shallow areas of permanent water bodies; only occurs on the shores of Lake Erie	Potential habitat not present in vicinity of property.

BIRDS		ESA Protection	Key Habitats Used By Species	Subject Property
Acadian Flycatcher (*Empidonax virescens*)	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 property. Not observed during breeding bird surveys.
Bank Swallow (*Riparia riparia*)	Suspected 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. Not observed during breeding bird surveys.
Barn Swallow (Hirundo rustica)	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. Not observed during breeding bird surveys.
Bobolink (*Dolichonyx oryzivorus*)	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 property. Not observed during breeding bird surveys.
Cerulean Warbler (*Setophaga cerulea*; formerly *Dendoica cerulea*)	Suspected to Occur	*Species and General Habitat Protection*	generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	Suitable breeding habitat not present on property. Not observed during breeding bird surveys.
Chimney Swift (*Chaetura pelagica*)	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 property. Not observed during breeding bird surveys.
Common Nighthawk (*Chordeiles minor*)	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)	Typical breeding habitat not present on property.
Eastern Meadowlark (*Sturnella Magna*)	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 property. Not observed during breeding bird surveys.
Eastern Wood-Pewee (*Contopus virens*)	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 breeding habitat present on property. Not observed during breeding bird surveys.
King Rail *(Rallus elegans)*	Known to Occur	*Species and General Habitat Protection*	generally this species requires large marshes with open shallow water that merges with shrubby areas	Suitable breeding habitat not present on property. Not observed during breeding bird surveys.
Prothonotary Warbler (*Protonotaria citrea*)	Known to Occur	*Species and General Habitat Protection*	generally found in the dead trees of flooded woodlands or deciduous swamp forests; Carolinian zone	Suitable breeding habitat not present on property. Not detected during breeding bird surveys.
Red-Headed Woodpecker *(Melanerpes erythrocephalus)*	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	Suitable breeding habitat present on property. Not detected during breeding bird surveys.
Short-eared Owl (*Asio flammeus)*	Known to Occur	*N/A*	Generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields	Typical breeding habitat not present on property. Not observed during breeding bird surveys.
Wood Thrush (*Hylocichla mustelina*)	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.	Suitable breeding habitat present on property. Not observed during breeding bird surveys.
Yellow-breasted Chat *(Icteria virens)*	Known to Occur	*Species and General Habitat Protection*	generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Typical breeding habitat not present on property. Not observed during breeding bird surveys.

FISH			Key Habitats Used By Species	Subject Property

Lake Chubsucker (Erimyzon sucetta)	**Known to Occur**	*Species and General Habitat Protection*	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.
Grass Pickerel *(Esox americanus vermiculatus)*	**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.

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

MAMMALS		ESA Protection	**Key Habitats Used By Species**	**Subject Property**
Eastern small-footed Myotis (*Myotis leibii*)	**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.	Potential roosting or maternal habitat on property limited to exfoliating bark on dead ash trees. Property not providing significant habitat for roosting bats.
Little Brown Myotis (*Myotis lucifugus*)	**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).	Potential roosting or maternal habitat on property limited to exfoliating bark on dead ash trees. Property not providing significant habitat for roosting bats.
Northern Myotis (*Myotis septentrionalis*)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Often asssociated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	Potential roosting or maternal habitat on property limited to exfoliating bark on dead ash trees. Property not providing significant habitat for roosting bats.
Tri-colored Bat (*Perimyotis subflavus*)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures.	Typical roosting and maternal habitat not present on property.
Woodland Vole (*Microtus pinetorum*)	**Known to Occur**	*N/A*	generally associated with deciduous forests in areas of soft, friable, often sandy soil beneath deep humus, where it can burrow easily.	Typical habitat not present on property. Not observed on property.

MOLLUSCS		ESA Protection	**Key Habitats Used By Species**	**Subject Property**

MOSSES		ESA Protection	**Key Habitats Used By Species**	**Subject Property**

PLANTS		ESA Protection	**Key Habitats Used By Species**	**Subject Property**
American Ginseng (*Panax quinquefolius*)	**Known to Occur**	*Species and General Habitat Protection*	grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Typical habitat not present on property. Not observed during botanical inventories.
Butternut (*Juglans cinerea*)	**Known to Occur**	*Species and General Habitat Protection*	generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Typical habitat not present on property. Not observed during botanical inventories.
Common Hoptree (*Ptelea trifoliata*)	**Known to Occur**	*Species and General Habitat Protection*	generally grows in sandy soils in areas with a lot of natural disturbance - such as the outer edge of shoreline vegetation, sand spits, and sand points.	Typical habitat not present on property. Not observed during botanical inventories.
Eastern Flowering Dogwood (*Cornus florida*)	**Known to Occur**	*Species Protection and **Habitat Regulation***	generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Typical habitat not present on property. Not observed during botanical inventories.
Green Dragon (*Arisaema dracontium*)	**Known to Occur**	*N/A*	generally grows in damp deciduous forests and along streams.	Typical habitat not present on property. Not observed during botanical inventories.
Spotted Wintergreen (*Chimaphila maculata*)	**Historically Known to Occur**	*Species and General Habitat Protection*	generally grow in sandy habitats in dry-mesic oak-pine woods. In Canada, they grow very close to the Great Lakes	Typical habitat not present on property. Not observed during botanical inventories.
Swamp Rose-mallow (*Hibiscus moscheutos*)	**Known to Occur**	*Species and General Habitat Protection*	generally grows in open, coastal marshes, but it is also sometimes found in open wet woods, thickets and drainage ditches	Typical habitat not present on property. Not observed during botanical inventories.
White Wood Aster (*Eurybia divaricata*)	**Known to Occur**	*Species and General Habitat Protection*	generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Typical habitat not present on property. Species observed south of property on road allowance.

REPTILES		ESA Protection	**Key Habitats Used By Species**	**Subject Property**

Blanding's Turtle *(Emydonidea blandingii)*	**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 property.
Eastern Hog-nosed Snake (*Heterodon platirhinos*)	**Historically 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.	Typical habitat not present on property. Species not observed on property during inventories.
Snapping Turtle (*Chelydra serpentina*)	**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 gravely 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 property.
Spotted Turtle (*Clemmys guttata*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers the shallow, slow-moving and unpolluted water of ponds, bogs, marshes, ditches, vernal pools and sedge meadows. It can also be found in woodland streams and near the sheltered shores of shallow bays	Potential habitat not present on property.

Appendix D

Significant Wildlife Habitat Summary Table

Assessment of Significant Wildlife Habitat on the Shayne Avenue 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 Lands
Shorebird Migratory Stopover Area	Absent	Suitable habitat not present on Subject Lands
Raptor Wintering Area	Absent	Suitable habitat not present on Subject Lands
Bat Hibernacula	Absent	Suitable habitat not present on Subject Lands
Bat Maternity Colonies	Absent	Typical habitat not present on Subject Lands
Turtle Wintering Areas	Absent	Suitable habitat not present on Subject Lands
Reptile Hibernaculum	Absent	Suitable habitat not present on Subject Lands
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Suitable habitat not present on Subject Lands
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Suitable habitat not present on Subject Lands
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Suitable habitat not present on Subject Lands
Migratory Butterfly Stopover Areas	Absent	Suitable habitat not present on Subject Lands
Landbird Migratory Stopover Areas	Absent	Suitable habitat not present on Subject Lands
Deer Winter Congregation Areas	Absent	Suitable habitat not present on Subject Lands
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on Subject Lands
Sand Barren	Absent	Habitat type not present on Subject Lands
Alvar	Absent	Habitat type not present on Subject Lands
Old Growth Forest	Absent	Habitat type not present on Subject Lands
Savannah	Absent	Habitat type not present on Subject Lands
Tallgrass Prairie	Absent	Habitat type not present on Subject Lands
Other Rare Vegetation Communities	Absent	No rare vegetation communities present on Subject Properties

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

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.