

ENVIRONMENTAL IMPACT STUDY
CHIPPAWA PROPERTIES
CITY OF NIAGARA FALLS

Prepared for:

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Lawrence Avenue Group Limited to prepare an Environmental Impact Study (EIS) to assess potential ecological impacts associated with the potential future development for multiple adjacent properties located east of Willoughby Drive, between Cattell Drive and Weinbrenner Road, in the City of Niagara Falls (see Figure 1). This EIS is intended to present the results of our field investigations and assessments of any potential impacts the proposed development may have on natural heritage features located on and adjacent to the properties, henceforth referred to as the Subject Lands, and the recommendation of appropriate mitigation strategies. A summary of our assessment is included below.

1.1 Description of the Subject Lands

The Subject Lands for this assessment consist of fourteen property parcels that collectively measure approximately 11.01ha (27.21 acres) in size and are irregularly shaped. The Subject Lands are bisected by a drainage feature that conveys stormwater from urbanized lands west of these properties, northeast to the Niagara River. Surrounding land uses are predominantly residential and commercial, with a golf course to the east and residential development to the north and south.

There are currently no structures on the Subject Lands, with the majority of the properties consisting primarily of periodically mowed meadow. Hedgerows occur on both sides of the drainage feature that bisects the lands, as well as on the eastern and southern edges of the Subject Lands. A review of historical air photos indicates that these lands were entirely under agricultural production until at least 1971, and that the drainage feature was not built until the 1980s.

Based on our review of background information, it is our understanding that there are no mapped natural heritage features on the Subject Lands (see Figure 2). Although not located on the Subject Lands, a portion of the Usshers Creek Provincially Significant Wetland Complex is located south of Weinbrenner Road, however no portion of this wetland is located within 30m of the properties. Niagara Region mapping also indicates that there is a portion of significant woodland to the east of the Subject Lands.

No features regulated by the Niagara Peninsula Conservation Authority (NPCA) are located on the property, however the drainage channel that bisects the lands, as well as the watercourse to the east of the property are regulated areas. Natural heritage features adjacent to the Subject Lands are shown in Figure 2.

1.2 Description of Proposed Development

The conceptual proposed development on the Subject Lands consists of a residential subdivision development with a mix of apartments and townhouses totalling 978 units, along with associated amenities including parking, roadways, landscaping and open greenspace. A proposed concept plan is provided in Appendix A.

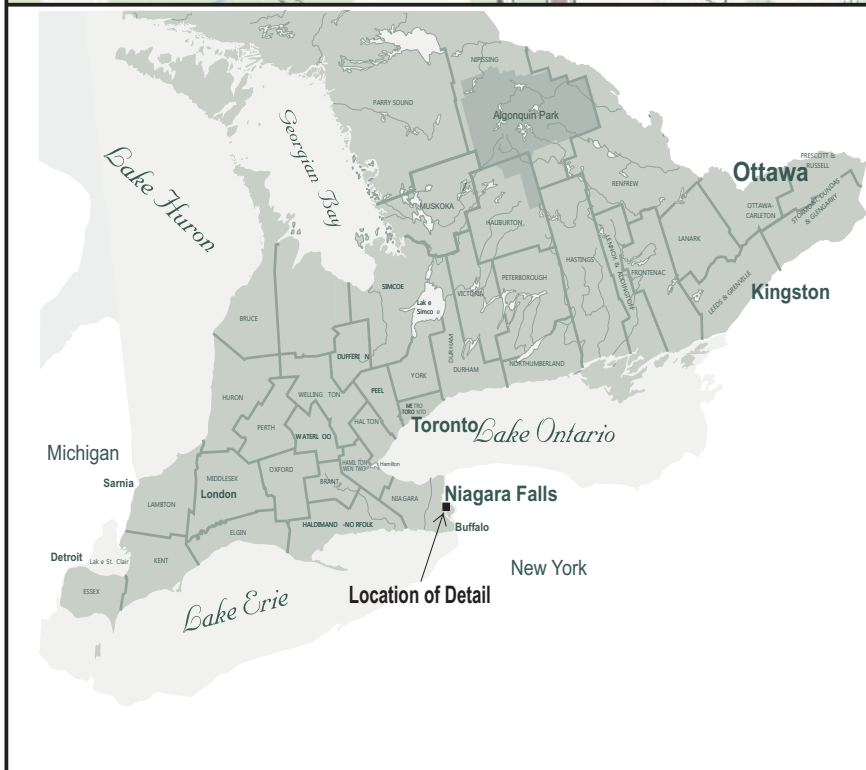
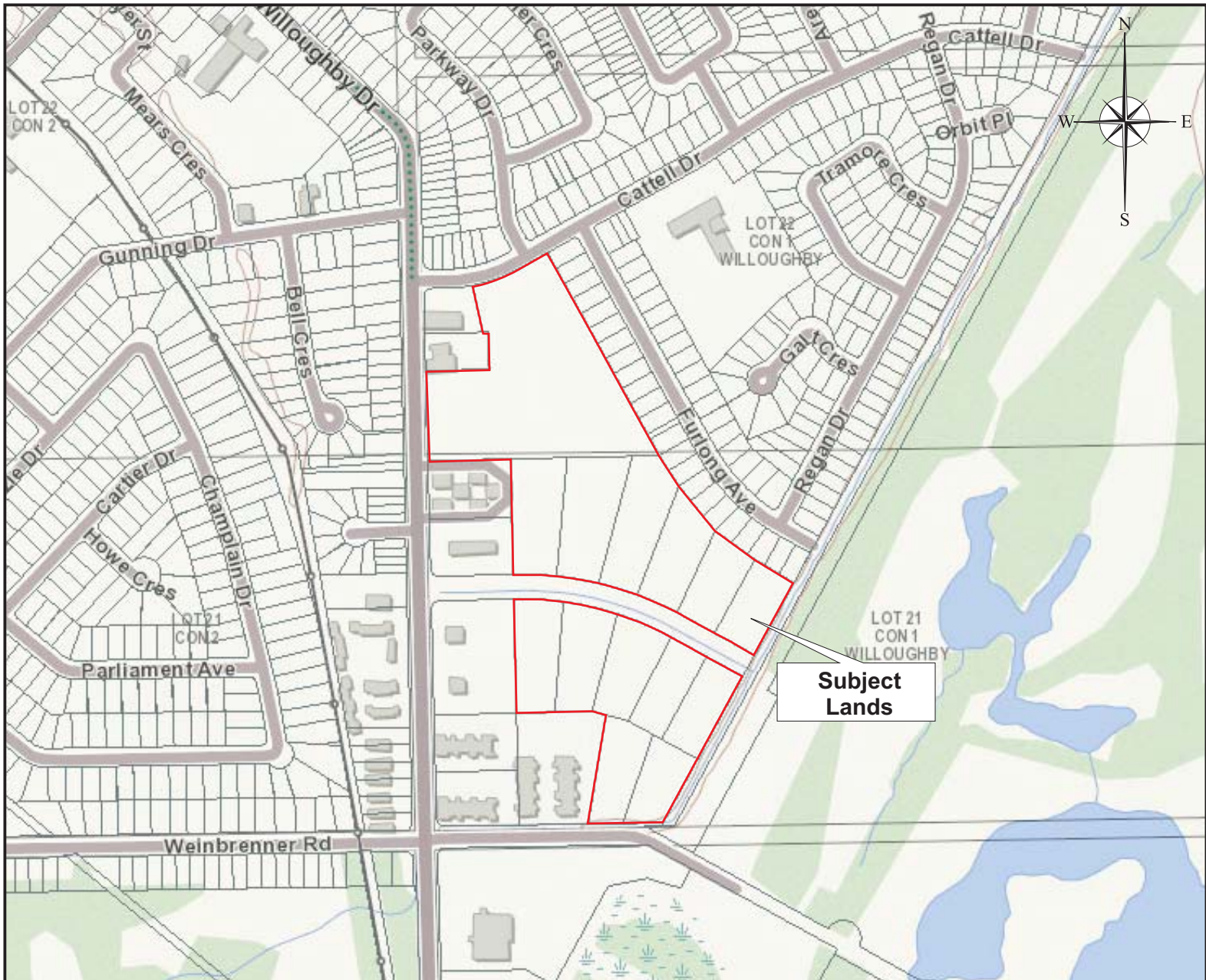


FIGURE 1
Location Map

Environmental Impact Study
Chippawa Properties, City of Niagara Falls

Prepared for:
Lawrence Avenue Group Ltd

Prepared by:
COLVILLE CONSULTING INC.

DATE: October 2024

FILE: C18033



Legend

- Subject Lands
- Watercourse
- Provincially Significant Wetland
- Significant Woodland

Figure 2
Mapped Natural Heritage Features

Environmental Impact Study
Chippawa Properties, City of Niagara Falls

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2.0 ENVIRONMENTAL POLICY

2.1 Provincial Policy Statement

The Provincial Planning Statement (PPS) was issued under Section 3 of the Planning Act and came into effect on October 20, 2024. The PPS was updated in 1997, 2005, 2014, 2020 and most recently in 2024. It applies to all applications submitted after October 20, 2024, and states that decisions affecting planning matters “shall be consistent with” policy statements issued under the Act. This EIS has been prepared in compliance with Chapter 4, Policy 4.1 of the PPS, which deals specifically with the long-term protection and management of natural heritage features and areas.

The PPS intends to ensure that natural features and areas be protected for the long term. The PPS indicates that diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features.

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

Development and site alteration is not permitted in:

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

Unless it can be demonstrated that there will be no negative impacts on the natural heritage features or their ecological functions, development and site alteration are not permitted in:

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

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

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

2.2 Regional Niagara Official Plan

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

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

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

While there are no mapped features on the Subject Lands, mapped natural heritage features adjacent to the Subject Land include significant woodland, provincially significant wetland and intermittent watercourses. Not all of the features and components that make up the natural environment system can, or have been mapped, as part of the schedules to the Official Plan. Where features or components of the natural environment system listed in Schedule L are not mapped, detailed area-specific or site-specific studies such as an environmental impact study, hydrological evaluation, or sub-watershed study are required for their identification.

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

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

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

Section 3.1.9.6 of the Official Plan includes policies related to development and site alteration in Natural Heritage Features and Areas outside of the Provincial Natural Heritage System. Section 3.1.9.6.1 states that development and site alteration shall not be permitted in the following natural heritage features and areas:

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

Section 3.1.9.6.2 states that development and site alteration shall not be permitted in the following natural heritage features and areas unless it has been demonstrated through the preparation of an environmental impact study that there will be no negative impacts on the natural features or their ecological functions:

- a) other woodlands;
- b) significant valleylands;
- c) significant wildlife habitat; and
- d) areas of natural and scientific interest.

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

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

Policies related to buffers in settlement areas are include in section 3.1.9.10. Section 3.1.9.10.1 states that within settlement areas, mandatory buffers from natural heritage features and areas are required. The width of an ecologically appropriate buffer would be determined through an environmental impact study and/or hydrological evaluation at the time an application for development or site alteration is made, or through the completion of a sub-watershed study in support of a secondary plan or other large-scale

development. The width of the buffer would be based on the sensitivity of the ecological functions from the proposed development or site alteration, and the potential for impacts to the feature and ecological functions as a result of the proposed change in land use.

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

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

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

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

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

2.3 City of Niagara Falls Official Plan

The City of Niagara Falls Official Plan has been drafted to complement the Regional Policy 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 although located on adjacent properties, no portion of the Subject Lands have been designated Environmental Protection Area (EPA) or Environmental Conservation Area (ECA).

Environmental Protection Areas (EPA) include: Provincially Significant Wetlands, NPCA regulated wetlands greater than 2ha in size, Provincially Significant Life ANSIs, significant habitat of threatened and endangered species, floodways and erosion hazard areas and environmentally sensitive areas.

Environmental Conservation Areas (ECA) include: significant woodlands, significant valley lands, significant wildlife habitat, fish habitat, significant Life and Earth Science ANSIs, sensitive ground water areas, and locally significant wetlands or NPCA wetlands less than 2ha in size.

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

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

No development is permitted within any Provincially Significant Wetland.

2.4 Niagara Peninsula` Conservation Authority

The Niagara Peninsula Conservation Authority (NPCA) is responsible for the administration of Ontario Regulation 41/24 and the Conservation Authorities Act, which provides the NPCA jurisdiction to regulate development activities within and adjacent to flood and erosion hazards, valleys, watercourses and wetlands. The guiding principle of this regulation is to ensure any development work proposed within regulated areas will have no adverse impact on flooding, erosion, dynamic beaches unstable soils and bedrock.

To assist with reviewing development applications, the NPCA has created a document titled Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority (NPCA 2024). The purpose of the document is to provide guidance for reviewing development applications that are located within regulated areas.

There are no regulated features on the Subject Lands, and adjacent features are limited to a portion of the Usshers Creek Provincially Significant Wetland Complex located south of Weinbrenner Road, approximately 70 metres south of the Subject Lands. There is however a drainage ditch on and directly adjacent to the Subject Lands. NPCA policies related to the management of watercourses are contained in Section 9 of the policy document. This section states that in general interference with a watercourse is not permitted, except in accordance with the policies included in the policy NPCA document.

3.0 STUDY APPROACH

3.1 Background Review

As part of our assessment, 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 (1993);
- Niagara Region Official Plan (2022);
- NPCA Policy Document: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority (NPCA 2024);
- Data available from the Natural Heritage Information Center (NHIC);
- Background data available from the NPCA and Ministry of Natural Resources and Forestry (MNRF); and
- Niagara Natural Areas Inventory 2006-2009 (NPCA 2010).

3.2 Field Inventories and Methodology

In order to ensure all natural heritage features on the Subject Lands were assessed adequately, the following assessments and inventories were conducted as outlined in the approved Terms of Reference (see Appendix B):

- 1) Summer and fall botanical inventories of the Subject Lands;
- 2) Assessment and description of vegetation communities on the property using the Ecological Land Classification System for Southern Ontario (ELC);
- 3) A tree inventory documenting size, species, and health of each tree on the properties;
- 4) Breeding bird surveys;
- 5) Amphibian call surveys;
- 6) Assessment of potential bat roosting habitat;
- 7) Assessment of drainage features and general aquatic habitat, and
- 8) Document incidental wildlife observations during site visits.

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

4.0 STUDY FINDINGS

4.1 Botanical Inventories and Vegetation Mapping

Botanical inventories of the Subject Lands were conducted on August 12, 2018, as well as July 12 and September 22, 2023. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described and a list of botanical species was compiled (see Appendix C). Species status was assessed for Ontario (using NHIC data) and the Niagara Region (Oldham 2010). Vegetation communities are described below and illustrated in Figure 3, with representative site photographs of the property provided in Appendix D.

4.1.1 Botanical Inventories

One hundred-forty species or taxa were observed and noted during this assessment. No species at risk or provincially rare species were observed during the field visits. A planted Honey Locust tree was documented adjacent to a roadway, however since this species is of horticultural origin, it is not considered to be a provincially rare specimen. No species considered to be rare in the Region were documented and locally uncommon species were limited to isolated stems of Foxglove Beard-tongue, which were growing adjacent to the drainage ditch.

4.1.2 Vegetation Communities

The majority of the lands on the Subject Lands consists of former agricultural lands that have succeeded into a mix of meadow, thicket and wooded hedgerow. The majority of Some of wooded/thicket area on the Subject Lands was cleared in the winter of 2021/2022 and now consists of open meadow that is regularly mowed.

The following is a list of vegetation communities mapped and described on and adjacent to the Subject Land:

CUM1-1	Dry-Moist Old Field Meadow Type
CUT1-4	Gray Dogwood Cultural Thicket Type
FODM11	Naturalized Deciduous Hedgerow Ecosite
MAMM1	Graminoid Mineral Meadow Marsh Ecosite
MAMM1-2	Cattail Graminoid Mineral Meadow Marsh Type
WODM5	Fresh – Moist Deciduous Woodland

Descriptions of vegetation communities are provided below, and photos of the vegetation communities are provided in Appendix D.

CUM1-1 Dry – Moist Old Field Meadow Type with MAMM1 Graminoid Mineral Meadow Marsh Ecosite inclusion

Vegetation over most of the property consists of Dry – Moist Old Field Meadow Type (CUM1-1), which has been regularly mowed for the past several seasons. Native grasses, sedges and forbs dominate the community. Scattered throughout this community are also several very small pockets of mineral meadow marsh, which are dominated by Reed Canary grass and sedge species, and generally too small to map. The largest of these areas occurs on the northern portion of the Subject Lands and was delineated as a

Graminoid Mineral Meadow Marsh Ecosite (MAMM1) inclusion. This vegetation community appears to occur as a result of runoff from the parking area associated with the commercial plaza west of the Subject Lands. This area generally contains water in the early spring but was dry by late-May. Trees scattered along the northeastern property boundary and road allowance consist of Eastern Cottonwood, Silver Maple, White Elm, Willows, Spruce species and Oak species.

CUT1-4 Gray Dogwood Cultural Thicket Type / WODM5 Fresh – Moist Deciduous Woodland

Located along the drainage feature in the central portion of the property, are narrow shrub hedgerows that were described as Grey Dogwood Cultural Thicket Type (CUT1-4) and Fresh – Moist Deciduous Woodland Ecosite (WODM5). Canopy trees in this community consist primarily of young to mid-aged White Elm and Pin Oak, providing a variable cover from 0-50%. The variable sub-canopy is dominated by Red/Green Ash, Elms and Oaks, with pockets of the Common Buckthorn and Hawthorns. The shrub layer is dominated by Grey Dogwood and Common Buckthorn. The ground layer contains grasses, Tall Goldenrod, Panicked Aster, Canada Avens, Rough Goldenrod, Graceful Sedge and Poison Ivy with an abundance of Common Buckthorn seedlings.

CUT1-4 Gray Dogwood Cultural Thicket Type, WODM5 Fresh – Moist Deciduous Woodland, FODM11 Naturalized Deciduous Hedgerow Ecosite

Vegetation along the east property boundary also consists of a mix of Grey Dogwood Cultural Thicket Type (CUT1-4) and Fresh – Moist Deciduous Woodland (WODM5), with a portion of this area also described as Naturalized Deciduous Hedgerow Ecosite (FODM11). The young to mid-aged canopy, which varies from 0-60+% cover, is dominated by White Elm and Pin Oak, with scattered Swamp White Oak and Eastern Cottonwood trees. The sub-canopy is dominated by Red/Green Ash, as well as young Elms and Oaks, with pockets of the Common Buckthorn and Hawthorns. The often-dense shrub layer is dominated by Grey Dogwood and Common Buckthorn, with occasional Meadowsweet and Silky Dogwood. The ground layer ranges from open patches of grasses and Tall Goldenrod to more shaded, closed canopy areas dominated by Panicked Aster, Canada Avens, Rough Goldenrod, Jumpseed, Common Strawberry, Graceful Sedge and Poison Ivy with an abundance of Common Buckthorn seedlings. The hedgerow area has a slightly less dense shrub layer and slightly more oak trees in the canopy layer.

MAMM1-2 Cattail Graminoid Mineral Meadow Marsh Type

Bisecting the Subject Lands running east to west is an open drain which supports a linear community of Cattail Graminoid Mineral Meadow Marsh Type (MAMM1-2). Cattails and Common Reed co-dominated in this community. This drain corridor is periodically mowed and the rim and steep banks of the ditch support dry meadow or Grey Dogwood thicket with the occasional Willow species.



Legend

- Subject Lands
- Watercourses
- CUM1-1** Fresh - Moist Old Field Meadow Type
- CUT1-4** Gray Dogwood Cultural Thicket Type
- FODM11** Naturalized Deciduous Hedgerow Ecosite
- MAMM1-2** Cattail Graminoid Mineral Meadow Marsh Type
- MAMM1** Graminoid Mineral Meadow Marsh Ecosite
- WODM5** Fresh - Moist Deciduous Woodland Ecosite
- Amphibian Call Survey Station

0 75 M 150 M
1:3,930

Figure 3
Extent of Vegetation Communities
on the Subject Lands

Environmental Impact Study
Chippawa Properties, City of Niagara Falls

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4.2 Wildlife and Wildlife Habitat

4.2.1 Breeding Bird Survey

Breeding bird surveys were conducted on June 8 and June 24, 2023, to inventory breeding birds on and adjacent to the Subject Lands. Surveys were completed at least 15 days apart, under suitable weather conditions with little to no wind or precipitation. A thorough search of the Subject Lands was completed during both surveys between dawn and no later than 10:00 am. All birds seen or heard calling were recorded and the highest breeding evidence per species was determined in accordance with the criteria of the Atlas of the Breeding Birds of Ontario (Cadman et al. 2007).

A total of 38 species of birds were observed or heard on, above or adjacent to the Subject Lands. According to Ontario conservation status ranks (S-rank) designations, with the exception of 4 non-native species (SNA) and 2 “vulnerable” species (S3), 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; American Redstart, Chimney Swift, Great Blue Heron, uncommon to rare summer resident Orchard Oriole, occasional summer resident Purple Finch and rare permanent resident Tufted Titmouse (Niagara Natural Areas Inventory, 2010).

The Barn Swallow observed flying and calling over the Subject Lands on the second site visit are listed as Special Concern in Ontario and are also designated as Special Concern in Canada. Suitable nesting structures for this species is not present on the property.

The Chimney Swift observed flying and calling over the Subject Lands on the first site visit are listed as Threatened in provincially and federally. Nesting habitat for this species is not present on the property.

Table 1 below summarizes the bird species heard and/or seen on or adjacent to the Subject Lands during both site visits

Table 1: List of bird species documented on and adjacent to the Subject Lands

Species	S Rank	Niagara Status*	Hedgerow/Woodland	Meadow	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
American Crow	S5	C R	X			PO	H
American Goldfinch	S5	C R	X	X		PO	S
American Redstart	S5B	U R	X			PO	S
American Robin	S5	VC R	X	X		CO	FY
Baltimore Oriole	S4B	C R	X			PO	S
Barn Swallow	S4B	VC R	X	X		OBS	X
Black-capped Chickadee	S5	C P	X			PO	S
Blue Jay	S5	VC P	X			PO	H
Brown-headed Cowbird	S5	VC R	X			PR	D
Canada Goose	S5	VC P		X		PO	H
Cedar Waxwing	S5	C R	X			PO	H

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Species	S Rank	Niagara Status*	Hedgerow/ Woodland	Meadow	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
Chimney Swift	S3B	U R	X			PO	H
Chipping Sparrow	S5B	C R	X	X	X	PO	S
Common Grackle	S5	VC R	X		X	CO	FY
Double-crested Cormorant	S5B, S4N	VC R		X		OBS	X
Downy Woodpecker	S5	C P	X			PO	S
European Starling	SNA	VC P	X			CO	FY
Gray Catbird	S5B	C R	X			PR	A
Great Blue Heron	S4	U R		X		OBS	X
Great Crested Flycatcher	S5B	C R	X			PO	S
House Finch	SNA	C P	X			PO	S
House Sparrow	SNA	VC P	X		X	PO	S
House Wren	S5B	C R	X			PO	S
Killdeer	S5B	C R		X		PO	H
Mourning Dove	S5	VC R	X		X	PO	S
Northern Cardinal	S5	C P	X		X	CO	FY
Orchard Oriole	S4B	UR R	X			PO	S
Purple Finch	S5	O R	X			PO	S
Purple Martin	S4B	VC R	X			OBS	X
Red-winged Blackbird	S5	VC R	X	X		PR	A
Ring-billed Gull	S5	VC R		X		OBS	X
Rock Dove	SNA	VC P		X	X	OBS	X
Rose-breasted Grosbeak	S5B	C R	X			PO	H
Savannah Sparrow	S4B	VC R		X		PO	S
Song Sparrow	S5	VC R	X	X		CO	FY
Tufted Titmouse	S3	R P			X	PO	S
Warbling Vireo	S5B	C R	X			PO	S
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

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

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

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

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

A – agitated behavior or anxiety calls of an adult

D – courting or display between a male and female or two males N – nest building or excavation of nest hole

T – permanent territory presumed through registration of territorial song or presence of adult bird in breeding habitat on at least 2 days, one week or more apart at the same place

DD- distraction display or feigning injury AE – Adults leaving or entering nest site in circumstances indicating occupied nest FS – adult carrying fecal sac FY – recently fledged young CF – adult carrying food for young NE – nest containing eggs NY – nest with young

4.2.2 Amphibian Call Surveys

Amphibian call surveys were conducted on April 5, May 14 and June 18, 2023. Two survey locations were established on the Subject Lands to assess amphibian use of potential habitats. The locations of survey stations are illustrated on Figure 3. Station 1 was intended primarily to assess use of a small meadow marsh inclusion at the north end of the Subject Lands. Station 2 was established to assess use of the watercourse features adjacent to the Subject Lands.

Each station was surveyed for a period of three minutes, between one half-hour after sunset, and midnight. All species of calling amphibians were recorded along with a calling code (0 – no calling; 1- calls not overlapping, can be discretely counted; 2 – calls overlapping, but numbers of individuals can still be estimated; 3 – full chorus, numbers of individuals cannot be estimated), along with an estimate of the number of individual amphibians where possible.

The amphibian survey conducted on April 5, 2023 commenced at approximately 22:20. Air temperature during the April 5, 2023 survey was 8°C, with partly cloudy conditions, nearly full moon and light winds. The May 16, 2023 visit began at approximately 22:55, while the air temperature was 12°C, winds were light and it was partly cloudy. The final amphibian survey was completed on June 22, 2023, beginning at approximately 23:15. Skys were overcast and air temperature was 19°C with little wind during the survey. The results of the amphibian surveys are presented in Table 2.

Table 2: Results of amphibian call surveys.

		Spring Peeper	Western Chorus Frog	American Toad
Station 1	April 5, 2023	-	1-2	-
	May 16, 2023	-	-	-
	June 22, 2023	-	-	-
Station 2	April 5, 2023	1-1	1-2	-
	May 16, 2023	-	1-1	1-2
	June 22, 2023	-	-	-

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

4.2.3 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 and maternal habitat on the property was conducted on April 20, 2023 utilizing methods described in Bat and Bat habitat Surveys of Treed Habitats (MNRF 2017). No significant snags or cavity trees that may provide potential maternal or roost habitat were observed on the Subject Lands during these assessments.

4.2.4 Incidental Wildlife Observations

Incidental wildlife observations, including signs were recorded during visits to the Subject Lands conducted on April 23, May 15, June 6, June 8, June 24, July 5, July 12, August 12 and September 22, 2023. Species confirmed using the property were Grey Squirrel, Eastern Cottontail, White-tailed Deer, and Raccoon. Incidental insect observations including signs were recorded including Cricket, Emerald Ash Borer, Mosquito, Moth and Spittlebug.

4.3 Watercourse and Drainage Features

As illustrated in Figure 3, two drainage features occur adjacent to the Subject Lands. For the purpose of this assessment, the drainage feature that separates the north and south portions of the Subject Lands has been assigned the identifier of Watercourse 1 and the drainage feature east of the property has been assigned the identifier of Watercourse 2.

An assessment of Watercourses 1 and 2 was conducted on July 5, 2023 using the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (TRCA 2014). Descriptions of these drainage features are provided below.

Watercourse 1

The drainage feature described as Watercourse 1 occurs within the road allowance associated with Caronpost Road. Our review of historical air photos indicates that this drainage feature was constructed in the 1980's, and was constructed to act as a stormwater outlet for lands west of Willoughby Drive. Mapping indicates that this watercourse originates at the storm sewer outlet east of Willoughby Drive and conveys water approximately 360m east to Watercourse 2.

The channel of Watercourse 1 is well defined and generally trapezoidal in shape. The low flow channel of this watercourse varies from approximately 2.5-3.0m in width, with the channel eventually extending to approximately 10m wide at the top of bank. Channel substrates consist primarily of silt and clay. Vegetation within the watercourse consists primarily of Common Reed and Cattails, with Gray Dogwood and a mix of meadow species lining the channel banks. The channel shape and characteristics are generally consistent throughout the length of the channel.

Because this watercourse primarily conveys stormwater, flow in the channel is considered to be intermittent with scattered potential refuge pools.

Watercourse 2

The drainage feature described as Watercourse 2 occurs east of the Subject Lands. This drainage appears to have been partially constructed between 1954 and 1965, with the channel appearing to be extended south and deepened more recently than is evident in the 1965 air photo. This channel appears to have been constructed to act as a stormwater outlet for the residential development north of the Subject Lands but has been modified historically to also function as an outlet for lands south and southwest of these properties. Mapping indicates that this watercourse originates approximately 900m southwest of the Subject Lands and conveys water to the Niagara River, approximately 1200m northeast of these lands.

The channel of Watercourse 2 is also well defined and generally trapezoidal in shape. The low flow channel of this watercourse varies from approximately 2.0-3.0m in width, with the channel eventually extending to approximately 8m wide at the top of bank. Channel substrates consist primarily of silt and clay. Vegetation within the watercourse is variable, consisting of Common Reed and Cattails where vegetation is present. Common Buckthorn, Gray Dogwood and a mix of deciduous trees occur on the watercourse banks and adjacent to the channel.

Flow in Watercourse 2 is also considered to be intermittent with scattered potential refuge pools.

5.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1 Species at Risk

5.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered species were observed on the property during our observations and Threatened species were limited to Chimney Swift, which were observed calling and foraging over the Subject Lands. Since suitable nest locations for this species do not occur on the property, any use of this property is suspected to be associated with incidental foraging.

As part of this assessment, we conducted a review of Natural Heritage Information Center (NHIC) data available for lands in the vicinity of the property (Appendix E). Endangered species known to occur in the vicinity of the property are limited to Red-headed Woodpecker and Northern Bobwhite. Red-headed Woodpeckers are a cavity nester that prefers open oak and beech forests, grassland and forest edges. Habitat available on the property is not consistent with typical breeding habitat of Red-headed Woodpecker and this species was not documented during breeding bird surveys. Northern Bobwhite generally prefer a variety of edge and grassland habitat. This species does not currently occur in the Region and was not detected during field inventories. A Species at Risk Screening is provided in Appendix F.

Threatened species known to occur in the vicinity of the property include Eastern Meadowlark and American Water Willow. None of these species were detected on or adjacent to the Subject Lands during surveys and therefore these lands are not providing habitat for these species.

5.1.2 Other Potential Species of Conservation Concern

Species of Conservation Concern documented on the property during our assessments were limited to Barn Swallows, which were observed flying and calling over the Subject Lands. Suitable nesting structures for Barn Swallows are not present on the property and it is assumed the Subject Lands are providing incidental foraging opportunities for this species.

Additional Species of Conservation Concern previously documented in the vicinity of the property are limited to Eastern Wood-pewee, Wood Thrush, and Snapping Turtle. Although Eastern Wood-pewee and Wood Thrush will use a variety of treed habitats during the breeding season, these species were not observed to be present on or adjacent to the properties during surveys. Therefore, the Subject Lands do not appear to be providing habitat for these species. Potential habitat for Snapping Turtle is not present on the Subject Lands.

5.2 Significant Wildlife Habitat

The SWH Criteria Schedule for Ecoregion 7E (OMNRF 2015) identifies four main types of significant wildlife habitat (SWH): seasonal concentrations areas, rare vegetation communities, specialized wildlife habitats, and habitats of Species of Conservation Concern.

5.2.1 Seasonal Concentration Areas

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. A significant wildlife habitat screening was completed as part of this project and can be seen in Appendix G.

Based on our assessments, the Subject Lands does not appear to be providing significant potential habitat for seasonal concentrations of wildlife.

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 Lands.

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 habitats for wildlife were noted on the property during our observations.

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 those that are provincially rare (S1-S3). 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.

Special Concern species documented during our surveys were limited to Barn Swallows, that were observed foraging over the Subject Lands. Because this species is known to forage opportunistically over a variety of habitat types and land uses, foraging habitat for this species is not considered to be significant wildlife habitat.

Based on our inventories, habitats available on these properties are not functioning as significant wildlife habitat.

5.2.5 Animal Movement Corridors

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

The Subject Lands are bound to the north, south and west by existing residential and urban land uses. Natural areas associated with a golf use exist to the east of the property, however the vegetation communities on these properties do not provide any linkage or migration functions to connect natural areas.

5.3 Significant Areas of Natural and Scientific Interest

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

5.4 Significant and Other Wetlands

During our review of background mapping, it was noted that a portion of the Usshers Creek Provincially Significant Wetland Complex (PSW) is located south of Weinbrenner Road, approximately 70m south of the Subject Lands. Wetland vegetation communities on the Subject Lands are limited to small inclusions of meadow marsh within the cultural meadow areas, as well as vegetation associated with the watercourse. None of these vegetation communities are considered to be Significant Wetlands.

It is understood that the Niagara Region Official Plan defines other wetlands to include:

- all wetlands that meet an Ecological Land Classification (ELC) wetland system classification and have not been evaluated as a provincially significant wetland. Vegetation communities that would be considered other wetlands are identified in Table 5-1;
- both evaluated non-provincially significant wetlands and wetlands that have not been evaluated. These include wetlands that are regulated, and wetlands that are not regulated by the Conservation Authority; and
- wetlands with ecological and hydrological functions and wetlands that only have a hydrological function.

Two wetland vegetation communities have been identified on the Subject Lands using ELC. The meadow marsh associated with Watercourse 1 occurs in the low flow channel of this watercourse and is sustained by stormwater conveyed in the channel. Because this vegetation community is associated with the watercourse, it is not considered to provide any significant wetland functions and not be considered an other wetland as described in the Niagara Region Official Plan.

The Graminoid Mineral Meadow Marsh Ecosite (MAMM1) inclusion at the north end of the property measures approximately 300m² in size and occurs as a result of runoff from the adjacent commercial use. Water draining from the adjacent buildings and parking area accumulates in this area, resulting in the Reed Canary Grass community observed in this location. Because water in this feature does not directly contribute flow to a surface watercourse, the accumulated water appears to be retained as surface water until the area dries through evapotranspiration. Our observations indicate that Western Chorus Frogs were

calling from this community, however the hydroperiod does not appear to be sufficient to support successful recruitment.

Because this vegetation community is artificially supported by uncontrolled stormwater runoff and is not a naturally occurring feature, this vegetation community is not considered to meet the criteria to be considered another wetland.

5.5 Significant and Other Woodlands

Our review of background mapping available from the City of Niagara Falls and Niagara Region indicates that no significant woodlands have been identified on the Subject Lands and our inventory confirms the accuracy of this mapping. There are lands east of the property that are currently mapped as significant woodland, east of Watercourse 2.

During our assessment it was noted that hedgerows occur along Watercourse 2 and the east property boundaries. These hedgerows were described as a complex of cultural thicket and deciduous woodland, as well as Naturalized Deciduous Hedgerow. The Naturalized Deciduous Hedgerow measures an average of approximately 22m in width and less than 0.3ha in size, and is therefore not considered to meet criteria to be considered an other woodland.

The hedgerow and treed area comprised of cultural thicket and deciduous woodland measures an average of approximately 25m in width and is also less than 0.3ha in size. This treed area is considered to be too small to meet criteria to be considered a woodland. Watercourse 2 separates this hedgerow from the adjacent significant woodland.

Based on our assessment, no significant or other woodlands occur on the Subject Lands.

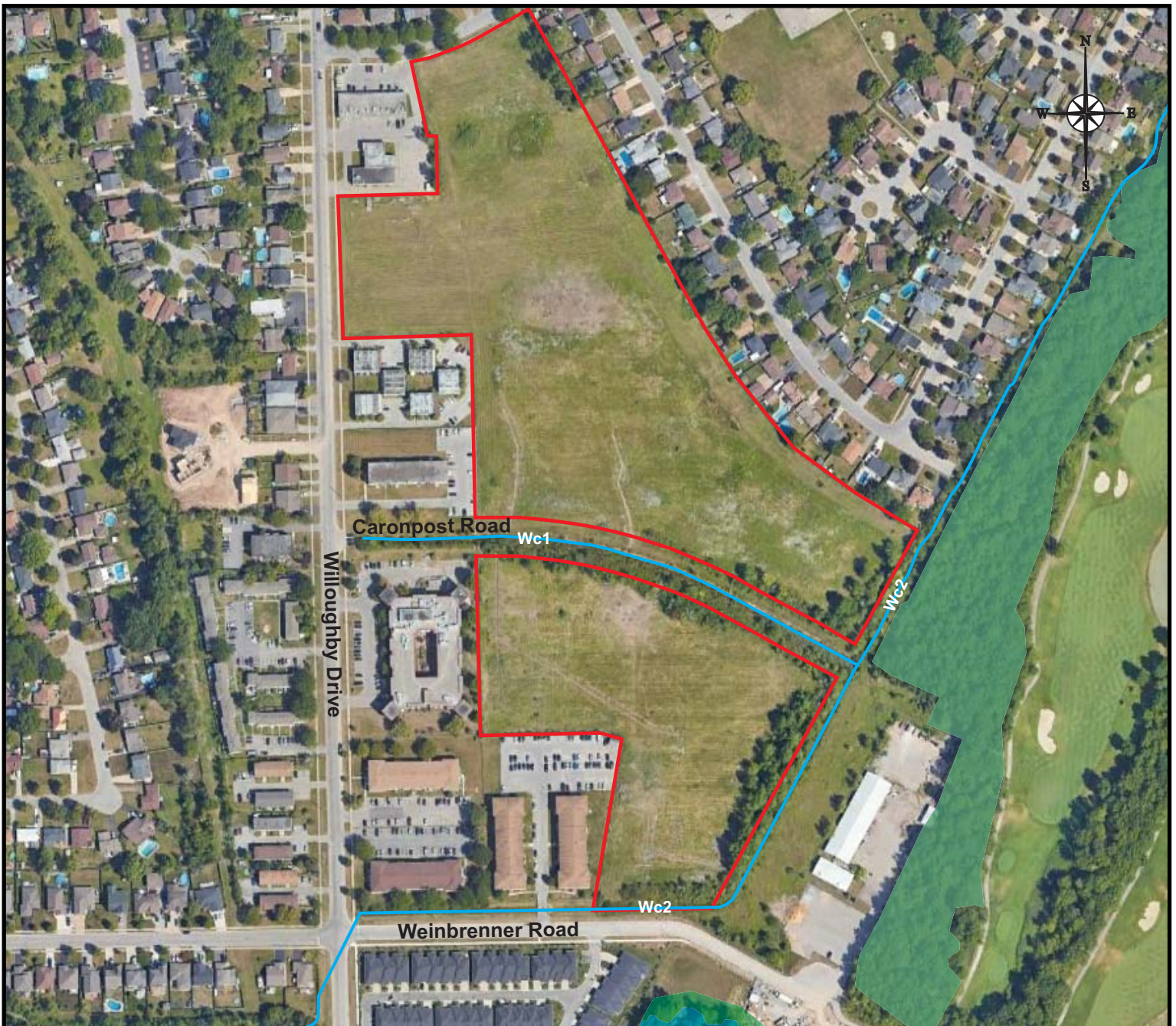
5.6 Watercourses

As described above, two watercourses occur adjacent to the Subject Lands. These watercourses were constructed with the intent of functioning as drainage outlets to lands in the vicinity of the Subject Lands. Because these watercourses convey stormwater to the Niagara River, these watercourses are considered to have intermittent flow regimes, and for the purposes of this assessment, are considered to potentially provide seasonal fish habitat.

5.7 Supporting Features

The Niagara Region Official Plan defines supporting features and areas as lands that have been restored or have the potential of being restored, and include:

- a. grasslands, thickets, and meadows that support the ecological functions of adjacent key natural heritage features, key hydrologic features, and/or natural heritage features and areas;
- b. valleylands, which includes lands that may have ecological and/or hydrologic functions, that are not significant valleylands, and are not the site of a permanent or intermittent stream that is regulated by the Conservation Authority;
- c. wildlife habitat that is not considered to be significant wildlife habitat; and
- d. enhancement areas, which are the subject of Section 3.1.16 of this Plan.



Legend

- Subject Lands
- Watercourse
- Provincially Significant Wetland
- Significant Woodland

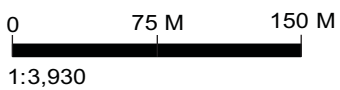


Figure 4
Refined Extent of
Natural Heritage Features

Environmental Impact Study
Chippawa Properties, City of Niagara Falls

Prepared for: **Lawrence Avenue Group Ltd**

Prepared by: **COLVILLE** 
 CONSULTING INC.

DATE: October 2024

FILE: C18033

Our assessment indicates that vegetation over a majority of the property consists of regularly mowed cultural meadow, with hedgerows and thickets also occurring. These areas appear to be providing habitat for a variety of urban wildlife species, however it is not suspected that these areas are providing any significant supporting functions to watercourses or woodlands adjacent to the lands.

6.0 POTENTIAL ECOLOGICAL IMPACTS

6.1 Significant Habitat of Endangered and Threatened Species

As discussed above, no Endangered species were observed during our assessment of the property and Threatened species were limited to the Chimney Swift. Since suitable nest locations for this species do not occur on the property, any use of this property is suspected to be associated with incidental foraging.

Based on our assessment, it is our conclusion that the proposed development will have no impact on the habitat of Endangered or Threatened Species

6.2 Other Potential Species of Conservation Concern

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

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

Based on our assessment, no portion of the proposed project will impact Species of Conservation Concern.

6.3 Locally Rare and Uncommon Species

No locally rare species were documented on the property. Locally uncommon species documented on the property were limited to Foxglove Beard-tongue, American Redstart, Orchard Oriole, Great Blue Heron and Chimney Swift.

Foxglove Beard-tongue which found adjacent to the drainage ditch. Since the drainage ditch is on city property, further consultation with the city will be necessary if this species is to be impacted by roadway construction.

American Redstart is considered to be a possible breeder on the property, as a singing male was documented during breed bird surveys. This species generally breeds in moist, deciduous, second-growth woodlands with abundant shrubs, often near water, however reported breeding habitat is variable and can include alder (*Alnus*) and willow (*Salix*) thickets, shrubby second-growth woodlands, thickets in treefall gaps within old-growth forest, shade trees and shrubby vegetation (e.g., fencerows), orchards and mixed deciduous-coniferous woodlands (Sherry et al. 2020). This species also appears to be area-sensitive in parts of eastern North America, occurring disproportionately in interior woodland compared to habitat edges, and disproportionately in tracts of habitat > 4,000 ha in area (Sherry et al. 2020).

Due to the variable and general habitat use of this species, the proposed project will not impact any habitat features that are considered critical to this species.

During the breeding period in the United States and southern Canada, the Orchard Oriole occupies open woodlands, orchards, shade trees and tree rows in agricultural and suburban areas, forest edges, and wooded riparian areas, lakeshores, and marshes (Scharf and Kren 2022). In Ontario, this species nests in scattered trees around gardens, orchards, and other open woodland, and avoids heavily forested regions (Scharf and Kren 2022).

Because habitat for this species is often considered a backyard species in Ontario and does not have specific breeding habitat requirements, suitable habitat for this species will continue to occur in the area following the proposed development on this property.

The Great Blue Heron and Chimney Swift were not considered to be breeding on the property and use of these lands is related to incidental foraging.

6.4 Significant Wildlife Habitat

Based on our assessments, no portion of the property is functioning as significant wildlife habitat.

6.5 Significant and Other Woodlands

As discussed above in section 5.5, there are no mapped significant woodlands on the Subject Lands, nor is there any ELC communities on the property that could be considered as significant woodland. While there is a significant woodland adjacent to the Subject Lands, the edge of this woodland is over 15 meters away from the property boundary, east of Watercourse 2.

For the purposes of this assessment, a 15 metre buffer has been applied to the significant woodland feature east of the Subject Lands (see Figure 5). A portion of the proposed development on the northeast corner of the property will be located in close proximity to this buffer, however the proposed development will have no impact on the woodland. The proposed development on this property will be consistent with existing developments to the north and any wildlife using the adjacent woodland will be accustomed to residential land uses.

Based on our assessments, the proposed development will have no impact to the adjacent significant woodland.

It is our assessment that the hedgerows and treed areas on the property do not meet criteria to be considered other woodland.

6.6 Other Wetlands

As illustrated in figure 3, a Graminoid Mineral Meadow Marsh Ecosite (MAMM1) inclusion exists at the north end of the property and measures approximately 300m² in size. As mentioned in Section 5.4, this small node occurs as a result of runoff from the adjacent commercial use, with water draining from the adjacent buildings and parking area, resulting in the Reed Canary Grass community observed in this location. Because water in this feature does not directly contribute flow to a surface watercourse, the accumulated water appears to be retained as surface water until the area dries through evapotranspiration.



Legend

- Subject Lands
- Watercourse
- Provincially Significant Wetland
- Significant Woodland
- 15 Metre Significant Woodland Buffer

Figure 5
 Refined Extent of Natural Heritage Features
 with Conceptual Site Plan

Environmental Impact Study
 Chippawa Properties, City of Niagara Falls

Prepared for: **Lawrence Avenue Group Ltd.**

Prepared by:



DATE: October 2024

FILE: C18033

Our observations indicate that this inclusion does not provide any significant wetland functions and is not supporting any functions consistent with significant wildlife habitat. Removal of this vegetation community will not pose any impact to natural heritage features or functions in the area.

As mentioned in Section 5.4, the meadow marsh associated with Watercourse 1 occurs in the low flow channel of this watercourse and is sustained by stormwater conveyed in the channel. Because this vegetation community is associated entirely by the watercourse and is not a naturally occurring feature, this vegetation community is not considered to be a wetland.

6.7 Watercourses

As illustrated in Figure 3, two watercourses are located on the property. Both are artificially created drainage ditches to convey stormwater and were documented to have intermittent flow. Based on current design plans, a public roadway is to be constructed along the area where Watercourse 1 currently sits. This area is currently mapped by the City of Niagara Falls as a road allowance associated with Caronpost Road. If there is to be a roadway built in the current alignment, the hydrological function of this drainage ditch will need to be replicated underground. Further consultation with the city will be necessary for any site alteration to occur in this area and permits/permissions may be required from the NPCA and Fisheries and Oceans Canada.

For the purposes of this impact assessment, it is assumed that Watercourse 1 will need to be piped to construct Caronpost Road. Because this watercourse was constructed for the sole purpose of conveying stormwater, habitat associated with this watercourse is limited. Our assessments indicate that the watercourse is not providing any significant aquatic habitat functions and it is not likely that piping this watercourse as intended will result in any impact to fish habitat or aquatic habitat functions in Watercourse 2.

Similar to Watercourse 1, Watercourse 2 adjacent to the Subject Lands was constructed to convey stormwater and was not documented to be providing any significant habitat or ecological functions. Because this watercourse is off site, it is understood that this watercourse will be maintained in its current location following the proposed development.

Because Watercourse 2 is essentially a roadside ditch along Weinbrenner Road and located to the rear of lots along most of its length to the Niagara River, the proposed development extending to the east property limit will not result in any impacts to Watercourse 2. It is recommended that vegetation in the channel and the watercourse block be maintained in its current state, which will essentially maintain any current functions associated with the watercourse. No additional naturalized buffer associated with this watercourse is required to maintain functions.

7.0 MITIGATION MEASURES

Based on our assessment, it is our expectation that the proposed development will have no impact on the ecological functions of the woodland adjacent to the Subject Lands or negatively impact any significant natural heritage features in the area. Figure 5 illustrates the extent of refined natural heritage features with recommended buffers and the proposed conceptual site plan for the Subject Lands. To assist in avoiding

any impacts associated with the proposed development, it is recommended that the following mitigation measures be implemented during final design and future construction of the proposed development.

- Adequate sediment and erosion controls should be installed prior to the commencement of work adjacent to the watercourse to help prevent any off-site movement of soil material during construction. Sediment controls should remain in place until all disturbed areas have been vegetated and stabilized.
- Sediment and erosion controls should be inspected regularly to ensure proper function.
- A silt fence is recommended to be installed to reduce any offsite movement of silt and help prevent wildlife movement into work areas.
- Any grading or filling to be conducted on the Subject Lands should be designed to maintain existing overland flow patterns to help avoid hydrological and sedimentation impacts to adjacent watercourses.
- The removal of trees and vegetation should be timed to minimize impacts on any wildlife species. It is recommended that tree removal be completed prior to April 1 or after October 31 to minimize impacts to bird and bat species that may be utilizing trees on the property.
- A survey for active bird nests should be conducted prior to any vegetation removal or site alteration planned to occur between April 1 and October 31.
- Tree removal required as part of this project should be conducted by a forestry professional to help avoid impacts to trees to remain on site.
- Any exterior lighting should be directed away from the woodland adjacent the property to minimize impacts on wildlife. Shades should be installed on exterior lighting to prevent light from being directed upward or towards natural areas.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting Inc. was retained to complete an Environmental Impact Study to identify potential impacts associated with the development of a residential subdivision on the Subject Lands located east of Willoughby Drive, between Cattell Drive and Weinbrenner Road, in the City of Niagara Falls. This EIS has been prepared with the intention of identifying the extent of any natural heritage features on and adjacent the Subject Lands and assessing impacts associated with the development of a residential subdivision. Based on our observations of the property and adjacent areas, it is our conclusion that the proposed development will have no impact on the ecological function of natural heritage features on and adjacent to the Subject Lands.

To assist with avoiding impacts, it is recommended that the above noted mitigation measures be implemented as required during detailed design, construction and post construction on the Subject Lands.

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

COLVILLE CONSULTING INC.

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

Respectfully submitted by:



Ian Barrett, M.Sc.
Colville Consulting Inc.



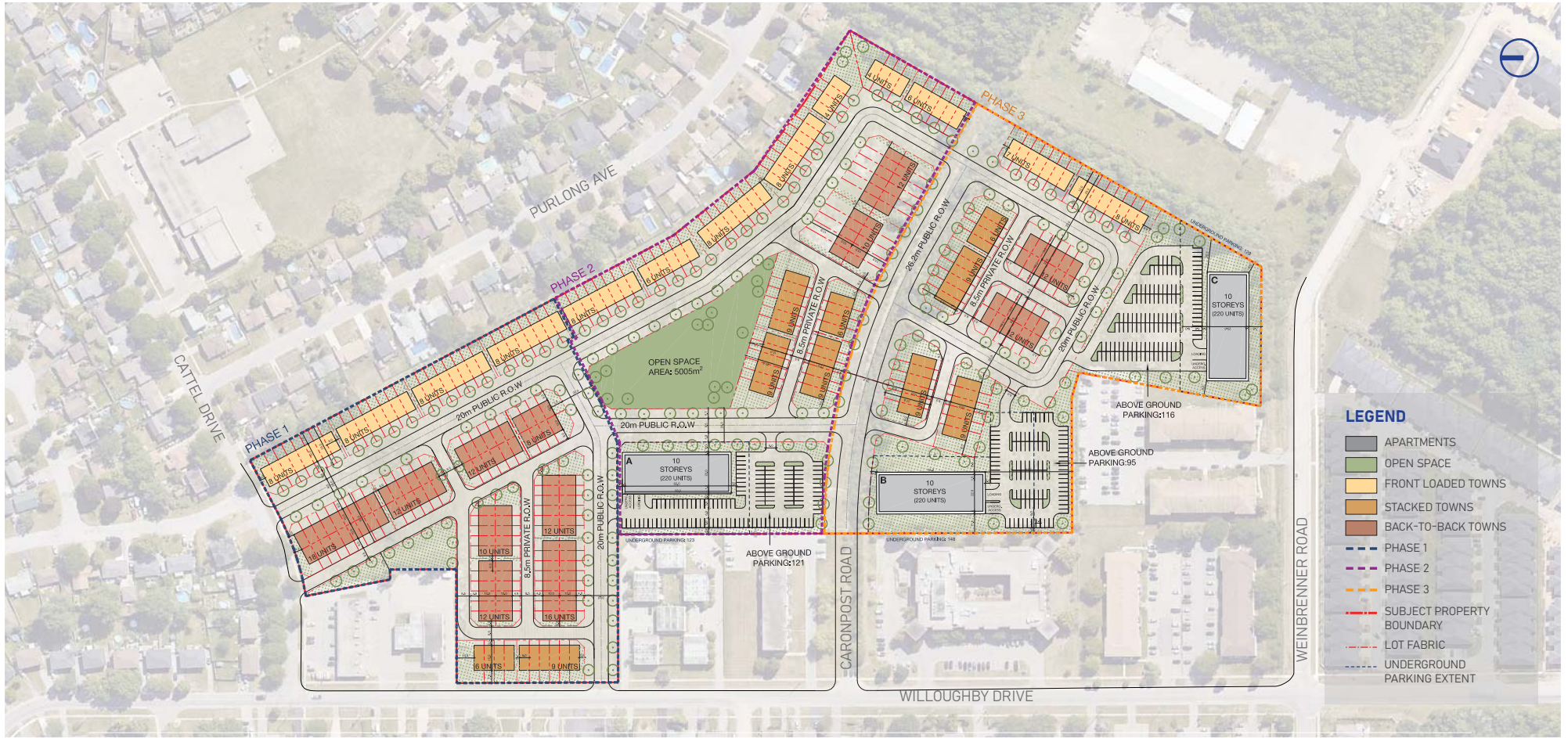
Nash Colville, B.A., CERP-IT, CISEC-IT
Colville Consulting Inc.

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Appendix A

Concept Development Plan



LEGEND

- APARTMENTS
- OPEN SPACE
- FRONT LOADED TOWNS
- STACKED TOWNS
- BACK-TO-BACK TOWNS
- PHASE 1
- PHASE 2
- PHASE 3
- SUBJECT PROPERTY BOUNDARY
- LOT FABRIC
- UNDERGROUND PARKING EXTENT

SITE INFORMATION		
TOTAL SITE AREA	109,762m ² (11.0ha)	
HEIGHT	Apartment	10 Storeys
	Towns	3 Storeys
PARKING PROVIDED	Apartment	1.1 spaces per unit
	Front Loaded Towns	2.0 spaces per unit
	Stacked Towns	1.0 spaces per unit
	Back-to-Back	2.0 spaces per unit
OPEN SPACE	5005m ² (4.5%)	

DEVELOPMENT STATISTICS			
TYPOLGY	UNITS	GFA m ²	
Apartment	660 units (220 per apt. block)	14,146	
Front Loaded Towns	91 units	19,656	
Stacked Towns	81 units	11,664	
Back-to-Back	146 units	26,280	
TOTAL	978 units	71,746	
Density (units per ha)	88.96 units per hectare		
PARKING		REQUIRED	PROVIDED
Apartment	925 spaces (1.4 spaces/unit)	726 spaces (1.1 spaces/unit)	
Towns	555 spaces	555 spaces	

NOTES

- Assumes all apartment typologies are 10-storeys with a setback above the 8th storey. Typical residential floor height of 3.0m.
- For the purpose of this concept, an average of 64.25m² (691.5ft²) unit size is used to calculate approximate total number of apartment units with a 90% efficiency.
- Assumes all townhouse typologies are 3-storeys. 216m²/unit for front loaded towns, 144m² for stacked towns and 180m² for back-to-back towns.
- Assumes 1.5 units per 6.0m wide module for stacked towns or 3-unit typologies (12.0m).
- The base plan (lot lines, roads/R.O.Ws, context) is based on the a survey plan provided by the client. All dimensions are approximate and need to be confirmed by a legal survey.

WILLOUGHBY DRIVE

NIAGARA FALLS, ON

LAWRENCE AVE GROUP

DATE
2024.06.03

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Appendix B
Terms of Reference

September 13th, 2024

Mackenzie Ceci
Senior Planner
City of Niagara Falls
4310 Queen Street
Niagara Falls, ON
L2E 6X5

Ms. Cara Lampman
Manager Environmental Planning
Regional Municipality of Niagara
1815 Sir Isaac Brock Way
Thorold, ON
L2V 4T7

Ms. Sarah Mastroianni
Manager, Planning and Permits
Niagara Peninsula Conservation Authority
3350 Merrittville Hwy, Unit 9
Thorold, ON
L2V 4Y6

Dear Ms. Ceci, Ms. Lampman and Ms. Mastroianni,

Re: EIS Terms of Reference – Chippawa Properties, City of Niagara Falls

Colville Consulting Inc. was retained by Laurence Avenue Group Limited to prepare an Environmental Impact Study (EIS) to assess potential ecological impacts associated with potential future development for multiple adjacent properties located in the Chippawa area in Niagara Falls. This Terms of Reference (ToR) provides an outline of the scope of work required of the EIS that will form part of the application package associated with this development. This ToR has been prepared to outline the proposed inventories and assessments that have already been completed and/or will be completed as a part of the preparation of the EIS.

PROPERTY DESCRIPTION

The Subject Property consists of fourteen property parcels located east of Willoughby Drive, between Cattell Drive and Weinbrenner Road, as is shown in Figure 1. The approximate size of the Subject Property is 11.01 ha (27.21 acres). The Subject Lands are bisected by a drainage feature that conveys stormwater from urbanized lands west of these properties, northeast to the Niagara River. Surrounding land uses are predominantly residential and commercial, with a golf course to the east and residential development to the north and south.

There are currently no structures on the Subject Lands, with the majority of the properties consisting primarily of periodically mowed meadow. Hedgerows occur on both sides of the drainage feature that bisects the lands, as well as on the eastern and southern edges of the Subject Lands. A review of historical air photos indicates that the entirety of these lands were under

agricultural production until at least 1971, and that the drainage feature was not built until the 1980s.

Based on our review of background information, it is our understanding that there are no mapped natural heritage features on the Subject Property (see Figure 2). Although not located on the Subject Lands, a portion of the Usshers Creek Provincially Significant Wetland Complex is located south of Weinbrenner Road, however no portion of this wetland is located within 30m of the properties. Niagara Region mapping also indicates that there is a portion of Significant Woodland to the east of the Subject Lands.

No features regulated by the Niagara Peninsula Conservation Authority (NPCA) are located on the property, however the drainage channel that bisects the lands, as well as the watercourse to the east of the property are likely regulated areas. These natural heritage features adjacent to the Subject Property are shown in Figure 2.

PROPOSED DEVELOPMENT

Proposed development on the Subject Property consists of a residential development with a mix of apartments and townhouses totalling 978 units, along with associated amenities including parking, roadways, landscaping and open greenspace. A proposed concept plan is provided in Appendix A.

REVIEW OF BACKGROUND INFORMATION

The following is a summary of natural heritage features currently mapped on the Subject Property.

Regional Niagara Official Plan

Our review of the Niagara Region's Official Plan Natural Environment System mapping (Schedule C2) indicates that no natural heritage features are located on the Subject Property. The constructed ditch that bisects the Subject Lands has been identified as an intermittent stream in mapping, however this ditch is located on City of Niagara Falls property.

Located west of the property is an additional constructed ditch, which has been identified as an intermittent stream. This ditch has been constructed primarily to convey storm water to the Niagara River. West of the ditch is a treed area associated with the golf course that has been designated as Significant Woodland. No portion of the woodland occurs on the Subject Property. These features will be assessed and evaluated through our studies.

Although not mapped as Significant Wildlife Habitat (SWH), an assessment of potential SWH available on the Subject Property was completed (see Appendix B). Assessments to delineate the extent of potential habitat have been included in this scope of work.

City of Niagara Falls

Our review of the City of Niagara Falls Official Plan, the entirety of the Subject Property is designated as Residential. Directly east of the Subject Property is a thin strip of land that's designated as Environmental Conservation Area, which is associated with the woodland within the nearby golf course. There is also a node of land south of the Subject Property across the road that is designated as Environmental Protection Area, related to the wetland in that area.

Niagara Peninsula Conservation Authority

Our review of background mapping indicates that no features regulated by the Niagara Peninsula Conservation Authority (NPCA) are located on the Subject Property. The constructed channel associated with Caronpost Road has been identified as a regulated watercourse, as has the channel west of the property. Neither of these channels occur on the property, however portions of these channels are located less than 15m from the Subject Lands.

Ministry of Environment, Conservation and Parks

The Ministry of Environment, Conservation and Parks (MECP) is responsible for the administration of the Endangered Species Act (ESA). Based on a species at risk screening completed for this property (see Appendix C), it is possible that potential habitats for several bird and bat species at risk are present on the property. Studies have been included in the work plan below to assess use by these species.

A review of Natural Heritage Information Center (NHIC) mapping and data previously provided by the Province indicates that **Red-headed Woodpecker (Endangered)**, **Northern Bobwhite (Endangered)**, **Eastern Meadowlark (Threatened)**, **Wood Thrush (Special Concern)**, **Eastern Wood-pewee (Special Concern)**, **Barn Swallow (Special Concern)** and **Snapping Turtle (Special Concern)** have the potential to occur on or adjacent to the Subject Property.

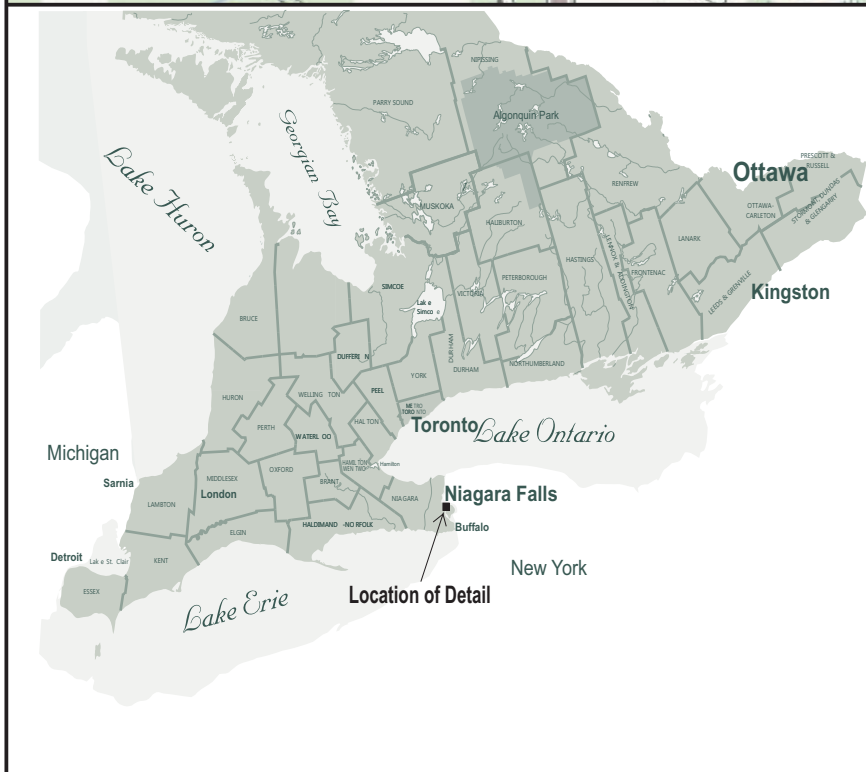
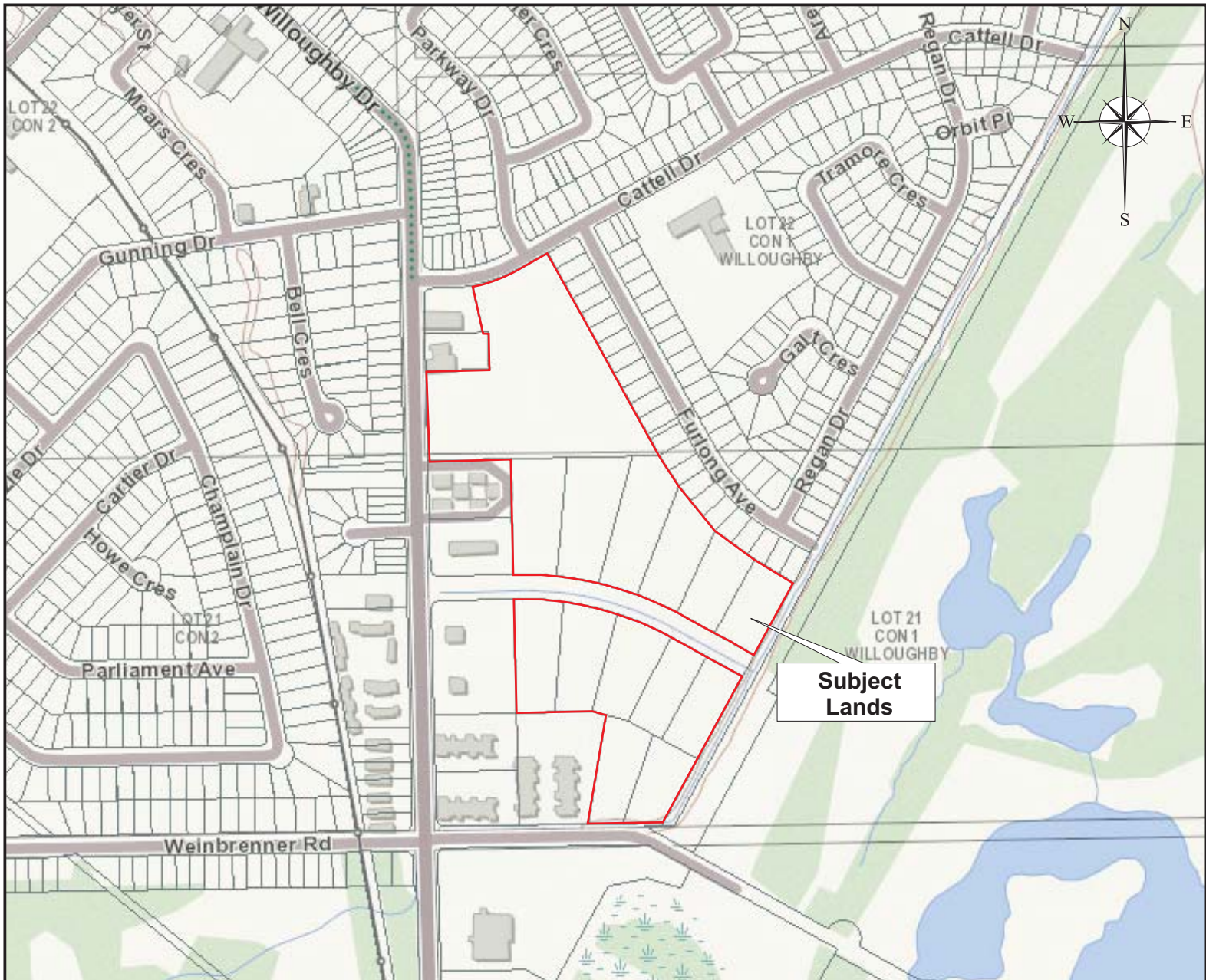


FIGURE 1
Location Map

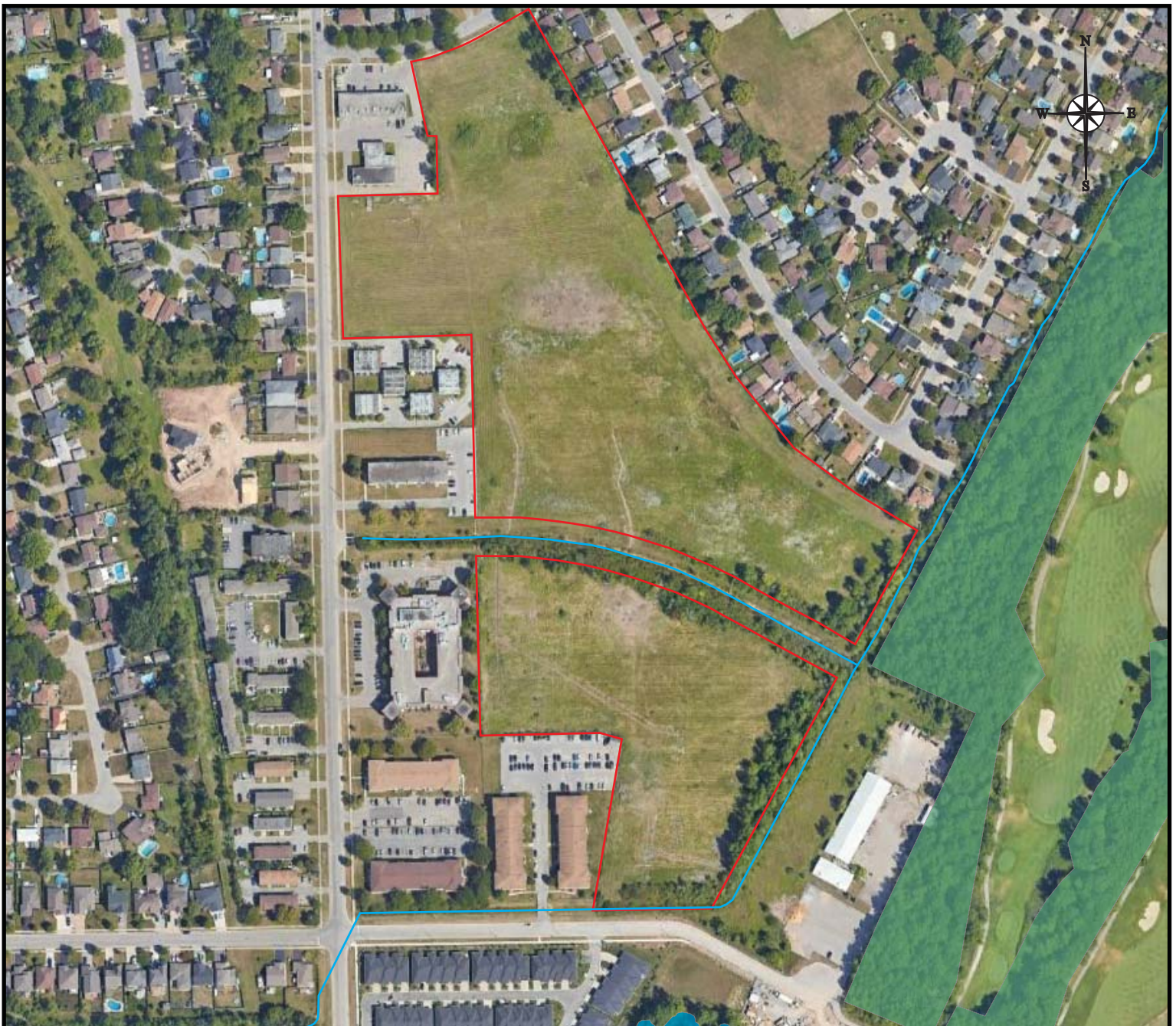
Environmental Impact Study
Chippawa Properties, City of Niagara Falls

Prepared for:
Ollie Switch Developments

Prepared by:
COLVILLE CONSULTING INC.

DATE: September 2024

FILE: C18033



Legend

- Property Boundary
- Watercourses
- Provincially Significant Wetland
- Provincially Significant Woodland

Figure 2
Mapped Natural Heritage Features

Environmental Impact Study
Chippawa Properties, City of Niagara Falls

Prepared for: **Ollie Switch Developments**

Prepared by: **COLVILLE** 
 CONSULTING INC.

DATE: September 2024

FILE: C18033

PROPOSED SCOPE OF WORK

This EIS is intended to build upon a Natural Heritage Constraints Assessment that was previously completed for the property. As indicated above, there are currently no natural heritage features on the Subject Property which have been included within the Region's Core Natural Heritage System. There is however natural heritage features mapped on properties adjacent to the Subject Property including a Provincially Significant Wetland to the south and Significant Woodland directly to the east associated with the Legends on the Niagara Golf Course.

To assess the extent of natural heritage features on the property and determine the impact of the proposed development on these features, we are intending to complete the following inventories and assessments as part of the EIS.

- 1) Botanical inventories of the property and adjacent lands, with inventories to be conducted in the summer and fall ;
- 2) Complete an assessment and description of vegetation communities on the property using the Ecological Land Classification System for Southern Ontario;
- 3) Conduct breeding bird surveys on and adjacent to Subject Lands, incorporating two surveys completed at least 15 days apart;
- 4) Complete an assessment of potential bat roosting habitat on the property using methods established by the Ministry of Natural Resources and Forestry;
- 5) Complete amphibian call surveys following Marsh Monitoring Protocols to assess amphibian use of the property and adjacent lands;
- 6) Conduct active hand searches for reptiles and amphibians using methods outlined by the MNRF. The intent of this assessment will be to document any reptile and amphibian species that may be using the Subject Lands, as well as determine the location of any potential reptile hibernacula;
- 7) Conduct headwater drainage feature assessments/general aquatic habitat assessment generally following HDF assessment procedure;
- 8) Conduct an assessment of habitat and ecological functions of the drainage channels adjacent to the property generally following the Headwater Drainage Features Protocol;
- 9) Complete Species at Risk and Significant Wildlife Habitat screenings for the property; and
- 10) Document incidental wildlife observations during site visits, including any species of insects that may be considered locally rare or species at risk.

Upon completion of the review of background information and field inventories, the results of our analysis will be compiled in a report that will be prepared in the context of applicable policies of the Niagara Region, City of Niagara Falls and NPCA, as well as consider the guidance provided in the Natural Heritage Reference Manual. This EIS will also identify the location and status of any species at risk observed during inventories.

The EIS will assess conformity with the applicable federal, provincial and local environmental policies and will include relevant background information from the NPCA, Niagara Region, City of Niagara Falls and Ministry of Natural Resources and Forestry (MNRF).

I trust this Terms of Reference and scope of work is satisfactory to the Niagara Region, the City of Niagara Falls and the NPCA. Please do not hesitate to contact the undersigned at 905-935-2161

should you have any questions regarding this matter. Alternatively, you can reach myself or Ian Barrett by email at nash@colvilleconsultinginc.ca or ian@colvilleconsultinginc.com respectively.

Yours sincerely,

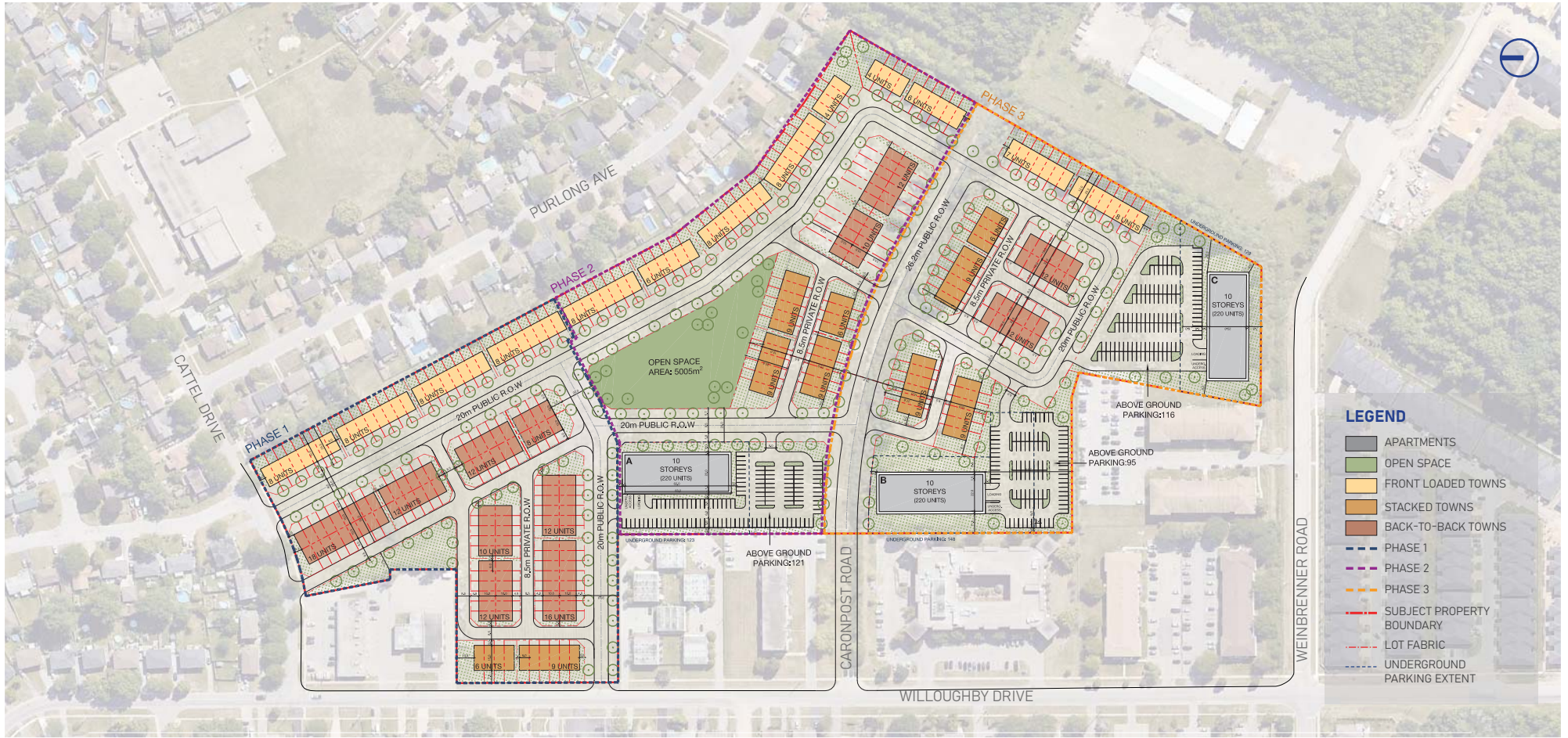


Nash Colville B.A., CISEC-IT, CERPIT
Colville Consulting Inc.



Ian Barrett, M.Sc.
Colville Consulting Inc.

Appendix A:
Conceptual Site Plan



SITE INFORMATION		
TOTAL SITE AREA	109,762m² (11.0ha)	
HEIGHT	Apartment	10 Storeys
	Towns	3 Storeys
PARKING PROVIDED	Apartment	1.1 spaces per unit
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	Stacked Towns	1.0 spaces per unit
	Back-to-Back	2.0 spaces per unit
OPEN SPACE	5005m² (4.5%)	

DEVELOPMENT STATISTICS			
TYPOLGY	UNITS	GFA m²	
Apartment	660 units (220 per apt. block)	14,146	
Front Loaded Towns	91 units	19,656	
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Back-to-Back	146 units	26,280	
TOTAL	978 units	71,746	
Density (units per ha)	88.96 units per hectare		
PARKING		REQUIRED	PROVIDED
Apartment	925 spaces (1.4 spaces/unit)	726 spaces (1.1 spaces/unit)	
Towns	555 spaces	555 spaces	

NOTES

- Assumes all apartment typologies are 10-storeys with a setback above the 8th storey. Typical residential floor height of 3.0m.
- For the purpose of this concept, an average of 64.25m² (691.5ft²) unit size is used to calculate approximate total number of apartment units with a 90% efficiency.
- Assumes all townhouse typologies are 3-storeys. 216m²/unit for front loaded towns, 144m² for stacked towns and 180m² for back-to-back towns.
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Appendix B:
Significant Wildlife Habitat Table

Assessment of potential Significant Wildlife Habitat – Chippawa 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 overwintering habitat not present on Subject Lands.
Bat Maternity Colonies	Absent	Significant Potential roost habitat not present on the Subject Lands.
Turtle Wintering Areas	Absent	Suitable overwintering habitat not present on Subject Lands
Reptile Hibernaculum	Absent	No obvious hibernacula present on properties.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Potential habitat not present on Subject Lands
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	No colonial nesting species present on Subject Lands.
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	No colonial nesting species present on Subject Lands.
Migratory Butterfly Stopover Areas	Absent	Suitable habitat not present on Subject Lands
Landbird Migratory Stopover Areas	Absent	Significant potential habitat no 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 Lands
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	Suitable habitat not present on Subject Lands
Terrestrial Crayfish	Absent	Suitable habitat not present on Subject Lands
Special Concern and Rare Wildlife Species	Absent	Subject Lands may be providing incidental foraging opportunities.
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.

Appendix C:
Species at Risk Screening

Niagara Falls

Species At Risk Designations

ENDANGERED

THREATENED

SPECIAL CONCERN

EXTIRPATED

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

BIRDS	ESA Protection	Key Habitats Used By Species	Subject Lands
Acadian Flycatcher (<i>Empidonax vireescens</i>)	Known to Occur	Species and General Habitat Protection Generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines	Suitable habitat not present on subject lands. Will be assessed during surveys.
Bank Swallow (<i>Riparia riparia</i>)	Known to Occur	Species and General Habitat Protection It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers.	Suitable habitat not present on subject lands. Will be assessed during surveys.
Barn Swallow (<i>Hirundo rustica</i>)	Known to Occur	Species and General Habitat Protection Prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Suitable nesting habitat not present on subject lands. Will be assessed during surveys.
Bobolink (<i>Dolichonyx oryzivorus</i>)	Known to Occur	Species and General Habitat Protection Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Suitable habitat not present on subject lands. Will be assessed during surveys.
Chimney Swift (<i>Chaetura pelagica</i>)	Known to Occur	Species and General Habitat Protection Historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Suitable habitat not present on subject lands. Will be assessed during surveys.
Common Nighthawk (<i>Chordeiles minor</i>)	Known to Occur	N/A Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops)	Typical habitat not present on subject lands.
Eastern Meadowlark (<i>Sturnella Magna</i>)	Known to Occur	Species and General Habitat Protection Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Suitable habitat not present on subject lands. Will be assessed during surveys.
Eastern Whip-poor-will (<i>Caprimulgus vociferus</i>)	Known to Occur	Species and General Habitat Protection Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Typical habitat not present on subject lands.
Eastern Wood-Pewee (<i>Contopus virens</i>)	Known to Occur	N/A Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Potential breeding habitat present on subject lands. Will be assessed during surveys.
Golden-winged Warbler (<i>Vermivora chrysoptera</i>)	Known to Occur	N/A Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Potential breeding habitat present on subject lands. Will be assessed during surveys.
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	Historically Known to Occur	Species and General Habitat Protection Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Suitable habitat not present on subject lands. Will be assessed during surveys.
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 habitat not present on subject lands. Will be assessed during surveys.
Peregrine Falcon (<i>Falco peregrinus</i>)	Known to Occur	N/A Generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas.	Suitable habitat not present on subject lands. Will be assessed during surveys.

Red-Headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Known to Occur	N/A	Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Typical breeding habitat not present on subject lands. Will be assessed during surveys.
Wood Thrush (<i>Hylocichla mustelina</i>)	Known to Occur	N/A	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understorey layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Potential breeding habitat present on subject lands. Will be assessed during surveys.
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 habitat not present on subject lands. Will be assessed during surveys.

FISH		ESA Protection	Key Habitats Used By Species	Subject Lands
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 subject lands.
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 subject lands.
Lake Chubsucker (<i>Erimyzon succetta</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 subject lands.
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 subject lands.

INSECTS		ESA Protection	Key Habitats Used By Species	Subject Lands
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	Scattered stems of swamp and common milkweed present on lands. Will be assessed during surveys.
Rusty-patched Bumble Bee (<i>Bombus affinis</i>)	Formerly Occurred and May Still Occur	Species and General Habitat Protection June 27, 2014	Generally inhabits a range of diverse habitats including mixed farmland, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows	Typical habitat not present on subject lands.
West Virginia White (<i>Pieris virginensis</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 subject lands.

MAMMALS		ESA Protection	Key Habitats Used By Species	Subject Lands
Grey Fox (<i>Urocyon cinereoargenteus</i>)	May Occur	Species and General Habitat Protection	Generally prefers deciduous forests, marshes, swampy areas, and urban areas	Potential habitat not present on subject lands.
Eastern Small-footed Myotis (<i>Myotis leibii</i>)	Known to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius; Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Typical roosting habitat not present on subject lands.
Little Brown Myotis (<i>Myotis lucifugus</i>)	Known 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).	Significant potential roosting habitat not present on subject lands.
Northern Myotis (<i>Myotis septentrionalis</i>)	Known 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.)	Significant potential roosting habitat not present on subject lands.
Tri-colored Bat (<i>Perimyotis subflavus</i>)	Known 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.	Significant potential roosting habitat not present on subject lands.

PLANTS		ESA Protection	Key Habitats Used By Species	Subject Lands
American Chestnut (<i>Castanea dentata</i>)	Known to Occur	Species and General Habitat Protection	Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Typical habitat not present on subject lands. Will be assessed during surveys.
American Ginseng (<i>Panax quinquefolius</i>)	Known to Occur	Species and General Habitat Protection	Grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Typical habitat not present on subject lands. Will be assessed during surveys.

American Water-willow (<i>Justicia americana</i>)	Known to Occur	Species and General Habitat Protection	Generally grows along shorelines and sometimes in nearby wetlands, as well as along streams where the bottom is composed of gravel, sand or organic matter	Typical habitat not present on subject lands. Will be assessed during surveys.
Black Ash (<i>Fraxinus nigra</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open moist to wet woodlands and wetlands, often growing on poorly drained soils.	Typical habitat not present on subject lands. Will be assessed during surveys.
Butternut (<i>Juglans cinerea</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Typical habitat not present on subject lands. Will be assessed during surveys.
Common Hoptree (<i>Ptelea trifoliata</i>)	Known to Occur	N/A	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 subject lands. Will be assessed during surveys.
Deerberry (<i>Vaccinium stamineum</i>)	Known to Occur	Species and General Habitat Protection	Generally occurs on sandy and well-drained soil, often in dry open woodlands (Niagara Gorge)	Typical habitat not present on subject lands. Will be assessed during surveys.
Drooping Trillium (<i>Trillium flexipes</i>)	Historically Known to Occur	Species and General Habitat Protection	Generally grows in dry, sandy loam, nonacidic soils of mature, deciduous woodlands that are usually associated with watercourses.	Typical habitat not present on subject lands. Will be assessed during surveys.
Eastern Flowering Dogwood (<i>Cornus florida</i>)	Known to Occur	Species Protection and Habitat Regulation	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Typical habitat not present on subject lands. Will be assessed during surveys.
Red Mulberry (<i>Morus rubra</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; Can grow in open areas such as hydro corridors	Typical habitat not present on subject lands. Will be assessed during surveys.
Round-leaved Greenbrier (<i>Smilax rotundifolia</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open moist to wet woodlands, often growing on sandy soils. Habitat is variable.	Typical habitat not present on subject lands. Will be assessed during surveys.
Shumard Oak (<i>Quercus shumardii</i>)	Known to Occur	N/A	Generally grows in deciduous forests, where the soils are poorly drained clay and clay loam. Requires full sunlight.	Typical habitat not present on subject lands. Will be assessed during surveys.
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.	Typical habitat not present on subject lands. Will be assessed during surveys.
Swamp Rose-mallow (<i>Hibiscus moscheutos</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open, coastal marshes, but it is also sometimes found in open wet woods, thickets and drainage ditches	Typical habitat not present on subject lands. Will be assessed during surveys.
White Wood Aster (<i>Eurybia divaricata</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Typical habitat not present on subject lands. Will be assessed during surveys.

REPTILES		ESA Protection	Key Habitats Used By Species	Subject Lands
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.	Typical habitat not present on subject lands. Will be assessed during surveys.
Eastern Musk Turtle (<i>Sternotherus odoratus</i>)	Known to Occur	Species and General Habitat Protection	Generally prefers shallow, slowmoving water where it typically walks along the bottom rather than swimming	Typical habitat not present on subject lands. Will be assessed during surveys.
Eastern Ribbonsnake (<i>Thamnophis sauritus</i>)	Known to Occur	N/A	Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Typical habitat not present on subject lands. Will be assessed during surveys.
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.	Typical habitat not present on subject lands. Will be assessed during surveys.

Appendix C

Vascular Plant Checklist

Plant List for the Chippawa Property, Niagara Falls, ON. Conduct on August 12, 2018, July 12 and September 22, 2023.

ScientificName	CommonNames	Coe. Cons.	Coe. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrare	CUM1-1	CUT/WODM5/FODM11	MAMM	Notes
<i>Acalypha virginica</i> var. <i>rhomboidea</i>	Three-seeded Mercury	0	3	G5			S5			x		
<i>Acer ginnala</i>	Amur Maple	0	5	G?			SE1		x	x		
<i>Acer negundo</i>	Manitoba Maple	0	-2	G5			S5			x		
<i>Acer platanoides</i>	Norway Maple	0	5	G?			SE5	x		x		
<i>Acer saccharinum</i>	Silver Maple	5	-3	G5			S5	x		x		
<i>Agrostis gigantea</i>	Redtop Grass	0	0	G4G5			SE5	x			x	
<i>Agrostis stolonifera</i>	Creeping Bent Grass	0	-3	G5			S5	x		x	x	
<i>Alliaria petiolata</i>	Garlic Mustard	0	0	G?			SE5	x		x		
<i>Allium</i> sp	Onion Species							x				
<i>Ambrosia artemisiifolia</i>	Common Ragweed	0	3	G5			S5	x				
<i>Apocynum cannabinum</i>	Indian Hemp	3	0	G5			S5	x		x		
<i>Apocynum</i> sp	Dogbane Species									x		
<i>Arctium minus</i> ssp. <i>minus</i>	Common Burdock	0	5	G?			SE5	x		x		
<i>Asclepias incarnata</i> ssp. <i>incarnata</i>	Swamp Milkweed	6	-5	G5			S5			x	x	
<i>Asclepias syriaca</i>	Common Milkweed	0	5	G5			S5	x				
<i>Aster lanceolatus</i> ssp. <i>lanceolatus</i>	Panicled Aster	3	-3	G5			S5	x		x		
<i>Aster pilosus</i> var. <i>pilosus</i>	Hairy Aster	4	2	G5			S5	x				
<i>Atriplex patula</i>	Spearscale	0	-2	G5			S5	x				
<i>Betula</i> sp	Birch Species									x		Escaped or planted non-native Birch
<i>Bidens frondosa</i>	Devil's Beggar-ticks	3	-3	G5			S5	x		x	x	
<i>Bromus inermis</i> ssp. <i>inermis</i>	Smooth Brome	0	5	G4G5			SE5	x				
<i>Calystegia sepium</i> ssp. <i>angulata</i>	Hedge Bindweed	2	0	G5			S5			x	x	
<i>Carex bebbii</i>	Bebb's Sedge	3	-5	G5			S5			x	x	
<i>Carex crinita</i>	Fringed Sedge	6	-4	G5			S5			x	x	
<i>Carex gracillima</i>	Graceful Sedge	4	3	G5			S5			x		
<i>Carex granularis</i>	Meadow Sedge	3	-4	G5			S5	x		x		
<i>Carex tenera</i>	Slender Straw Sedge	4	-1	G5			S5	x		x	x	
<i>Carex vulpinoidea</i>	Fox Sedge	3	-5	G5			S5	x		x	x	
<i>Centaurea jacea</i>	Brown Knapweed	0	5	G?			SE5	x		x		
<i>Chenopodium album</i> var. <i>album</i>	Lamb's Quarters	0	1	G5			SE5	x				
<i>Cichorium intybus</i>	Chicory	0	5	G?			SE5	x		x		
<i>Cirsium arvense</i>	Canada Thistle	0	3	G?			SE5	x		x		
<i>Cirsium vulgare</i>	Bull Thistle	0	4	G5			SE5	x				
<i>Clinopodium vulgare</i>	Wild Basil	4	5	G?			S5	x		x		
<i>Convolvulus arvensis</i>	Field Bindweed	0	5	G?			SE5	x				
<i>Convallaria majalis</i>	Lily-of-the-valley			G?			SE?			x		
<i>Cornus amomum</i> ssp. <i>obliqua</i>	Silky Dogwood	5	-4	G5			S5	x		x		
<i>Cornus foemina</i> ssp. <i>racemosa</i>	Grey Dogwood	2	-2	G5			S5	x		x		
<i>Cornus stolonifera</i>	Red-osier Dogwood	2	-3	G5			S5			x		
<i>Corylus avellana</i>	European Filbert			G?			SE?	x				
<i>Crataegus mollis</i>	Downy Hawthorn	4	-2	G5			S5			x		
<i>Crataegus punctata</i>	Dotted Hawthorn	4	5	G5			S5			x		
<i>Dactylis glomerata</i>	Orchard Grass	0	3	G?			SE5	x		x		
<i>Daucus carota</i>	Wild Carrot	0	5	G?			SE5	x		x		
<i>Dipsacus fullonum</i> ssp. <i>sylvestris</i>	Common Teasel	0	5	G?			SE5	x		x		
<i>Echinochloa</i> sp	Barnyard Grass Species							x			x	
<i>Elymus repens</i>	Quack Grass	0	3	G5			SE5	x		x		
<i>Epilobium</i> sp	Willow-herb Species										x	
<i>Erechtites hieracifolia</i>	Pilewort	2	3	G5			S5	x		x		
<i>Eupatorium perfoliatum</i>	Common Boneset	2	-4	G5			S5			x	x	
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	G5			S5	x		x	x	In wet areas of Woodland or along the drain
<i>Festuca rubra</i>	Red Fescue		1	G5			S5	x				
<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	Common Strawberry	2	1	G5			S5	x		x		
<i>Fraxinus pennsylvanica</i>	Red Ash	3	-3	G5			S5			x		
<i>Geum canadense</i>	White Avens	3	0	G5			S5			x		
<i>Glechoma hederacea</i>	Ground Ivy	0	3	G?			SE5	x		x		
<i>Gleditsia triacanthos</i>	Honey Locust	3	0	G5			S2	x				Root suckers growing from planted trees along roadside
<i>Glyceria striata</i>	Fowl Manna Grass	3	-5	G5			S5			x	x	
<i>Helianthus annuus</i> ssp. <i>annuus</i>	Common Sunflower	0	1	G5			SE4	x				Escaped or planted
<i>Hemerocallis fulva</i>	Tawny Day-lily	0	5	G?			SE5	x				
<i>Hibiscus syriacus</i>	Rose of Sharon			G?			SE?	x				
<i>Hypericum perforatum</i>	Common St. John's-wort	0	5	G?			SE5	x		x		
<i>Juglans nigra</i>	JUGLANDACEAE	5	3	G5			S4			x		
<i>Juglans</i> sp	Walnut Species							x				A planted English or Japanese Walnut
<i>Juncus effusus</i> ssp. <i>solutus</i>	Soft Rush	4	-5	G5			S5	x		x	x	
<i>Juncus tenuis</i>	Path Rush	0	0	G5			S5	x		x	x	
<i>Juniperus virginiana</i>	Eastern Red Cedar	4	3	G5			S5	x				
<i>Lactuca</i> sp	Lettuce Species							x				

ScientificName	CommonNames	Coe. Cons.	Coe. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrare	CUM1-1	CUT/WODM5/FODM11	MAMM	Notes
<i>Leontodon autumnalis</i> ssp. <i>autumnalis</i>	Fall Hawkbit	0	5	G?			SE5		x			
<i>Leonurus cardiaca</i> ssp. <i>cardiaca</i>	Motherwort	0	5	G?			SE5		x	x		
<i>Ligustrum ovalifolium</i>	Oval-leaved Privet	0	5	G?			SE1		x	x		
<i>Ligustrum vulgare</i>	Common Privet	0	1	G?			SE5			x		
<i>Linaria vulgaris</i>	Butter-and-eggs	0	5	G?			SE5		x			
<i>Lolium perenne</i>	Perennial Rye Grass	0	3	G?			SE4		x			
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0	5	G?			SE3			x		
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	0	1	G?					x			
<i>Ludwigia palustris</i>	Marsh Purslane	5	-5	G5			S5				x	
<i>Lycopus americanus</i>	Cut-leaved Water-horehound	4	-5	G5			S5			x		
<i>Lysimachia nummularia</i>	Moneywort	0	-4	G?			SE5		x	x		
<i>Lythrum salicaria</i>	Purple Loosestrife	0	-5	G5			SE5		x	x	x	
<i>Malus pumila</i>	Common Apple	0	5	G5			SE5					
<i>Mellilotus alba</i>	White Sweet-clover	0	3	G5			SE5		x	x		
<i>Mellilotus officinalis</i>	Yellow Sweet-clover	0	3	G?			SE5		x			
<i>Oxalis</i> sp	Wood-sorrel Species								x	x		
<i>Parthenocissus inserta</i>	Thicket Creeper	3	3	G5			S5			x	x	
<i>Penstemon digitalis</i>	Foxglove Beard-tongue	6	1	G5			S4S5	U	x	x		Along drain corridor
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	G5			S5		x	x	x	
<i>Phleum pratense</i>	Timothy	0	3	G?			SE5		x			
<i>Phragmites australis</i>	Common Reed	0	-4	G5			S5				x	
<i>Picea glauca</i>	White Spruce	6	3	G5			S5		x	x		
<i>Pinus strobus</i>	Eastern White Pine	4	3	G5			S5		x	x		
<i>Plantago lanceolata</i>	Ribgrass	0	0	G5			SE5		x			
<i>Plantago major</i>	Common Plantain	0	-1	G5			SE5		x			
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Blue Grass	0	1	G?			S5		x	x		
<i>Polygonum aviculare</i>	Common Knotweed	0	1	G?			SE5		x			
<i>Polygonum hydropiper</i>	Common Smartweed	0	-5	G5			SE5		x	x		
<i>Polygonum pensylvanicum</i>	Pink Knotweed	3	-4	G5			S5		x	x		
<i>Polygonum persicaria</i>	Lady's Thumb	0	-3	G?			SE5		x	x		
<i>Polygonum virginianum</i>	Jumpseed	6	0	G5			S4			x		
<i>Populus deltoides</i> ssp. <i>deltoides</i>	Eastern Cottonwood	4	-1	G5			S5			x		
<i>Potentilla simplex</i>	Common Cinquefoil	3	4	G5			S5			x		
<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	Heal-all	5	5	G5			S5			x		
<i>Pyrus communis</i>	Common Pear	0	5	G5			SE4			x		
<i>Quercus bicolor</i>	Swamp White Oak	8	-4	G5			S4			x		
<i>Quercus palustris</i>	Pin Oak	9	-3	G5			S3			x		
<i>Rhamnus cathartica</i>	Common Buckthorn	0	3	G?			SE5			x		
<i>Rhamnus frangula</i>	Glossy Buckthorn	0	-1	G?			SE5			x		
<i>Rhus radicans</i> ssp. <i>negundo</i>	Climbing Poison-ivy	5	-1	G5			S5			x		
<i>Rosa</i> sp	Rose Species								x	x		
<i>Rudbeckia hirta</i>	Black-eyed Susan	0	3	G5			S5		x			
<i>Rumex crispus</i>	Curly Dock	0	-1	G?			SE5		x			
<i>Salix alba</i>	White Willow	0	-3	G5			SE4			x		
<i>Salix alba</i> var. <i>tristis</i>	Weeping White Willow	0	-3	G5?			SE4?			x		
<i>Salix amygdaloides</i>	Peach-leaved Willow	6	-3	G5			S5			x	x	
<i>Salix cinerea</i>	Ashy Willow	0	5	G5			SE2			x		
<i>Salix eriocephala</i>	Woolly-headed Willow	4	-3	G5			S5			x	x	
<i>Salix exigua</i>	Sandbar Willow	3	-5	G5			S5			x	x	
<i>Salix X rubens</i>	Hybrid White Willow	0	-4	G?			SE4			x		
<i>Scirpus atrovirens</i>	Black Bulrush	3	-5	G5?			S5		x		x	
<i>Scirpus cyperinus</i>	Wool Grass	4	-5	G5			S5		x	x		
<i>Scirpus validus</i>	Softstem Bulrush	5	-5	G?			S5				x	
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	0	G?			SE5		x	x		
<i>Solanum nigrum</i>	Black Nightshade	0	0	G?			SE1		x		x	
<i>Solidago altissima</i> var. <i>altissima</i>	Tall Goldenrod	1	3	G?			S5		x	x		
<i>Solidago juncea</i>	Early Goldenrod	3	5	G5			S5		x	x		
<i>Solidago nemoralis</i> ssp. <i>nemoralis</i>	Gray Goldenrod	2	5	G5			S5		x			
<i>Solidago rugosa</i> ssp. <i>rugosa</i>	Rough Goldenrod	4	-1	G5			S5			x		
<i>Sonchus</i> sp	Sow-thistle Species								x			
<i>Spiraea alba</i>	Narrow-leaved Meadowsweet	3	-4	G5			S5			x	x	
<i>Taraxacum officinale</i>	Common Dandelion	0	3	G5			SE5		x	x		
<i>Tragopogon</i> sp	Goat's-beard Species								x			
<i>Trifolium dubium</i>	Suckling Clover	0	3	G?			SE4		x			
<i>Trifolium hybridum</i> ssp. <i>elegans</i>	Alsike Clover	0	1	G?			SE5		x			
<i>Trifolium pratense</i>	Red Clover	0	2	G?			SE5		x			
<i>Trifolium repens</i>	White Clover	0	2	G?			SE5		x			
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	G5			S5				x	
<i>Ulmus americana</i>	White Elm	3	-2	G5?			S5			x		

ScientificName	CommonNames	Coe. Cons.	Coe. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrare	CUM1-1	CUT/WODM5/FODM11	MAMM	Notes
<i>Verbena hastata</i>	Blue Vervain	4	-4	G5			S5			x	x	
<i>Vicia cracca</i>	Cow Vetch	0	5	G?			SE5		x			
<i>Vitis riparia</i>	Riverbank Grape	0	-2	G5			S5		x	x		

Legend

Coe. Cons. - 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.

Coe. Wet. - 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 D
Site Photographs



Photo 1. Example of vegetation conditions in the CUM1-1 community at the north end of the Subject Lands.



Photo 2. Example of vegetation conditions in the CUM1-1 community in the middle portion of the Subject Lands.



Photo 3. Example of vegetation conditions in the CUM1-1 community in the middle portion of the Subject Lands.



Photo 4. Example of vegetation conditions in the CUT1-4/WODM5 community adjacent to the drainage channel.



Photo 5. Example of vegetation conditions in the CUT1-4/WODM5 community in the northeast corner of the Subject Lands.



Photo 6. Example of vegetation conditions in the FODM11 community along the east property boundary.



Photo 7. Example of vegetation conditions within and adjacent to Watercourse 1.



Photo 8. Example of vegetation conditions within and adjacent to Watercourse 2.

Appendix E

NHIC Data

NHIC Data

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1037532	SPECIES	Finlayson's Oakworm Moth	Anisota finlaysoni	S2		SC	17PH5968	
1037532	SPECIES	Upland Sandpiper	Bartramia longicauda	S2B			17PH5968	
1037532	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17PH5968	
1037532	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17PH5968	
1037532	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17PH5968	
1037532	SPECIES	Copenhagen Hawthorn	Crataegus intricata	SH			17PH5968	
1037532	SPECIES	Unicorn Clubtail	Arigomphus villosipes	S3			17PH5968	
1037532	SPECIES	Greater Redhorse	Moxostoma valenciennesi	S3			17PH5968	
1037532	SPECIES	Northern Bobwhite	Colinus virginianus	S1?	END	END	17PH5968	
1037532	SPECIES	Timber Rattlesnake	Crotalus horridus	SX	EXP	EXP	17PH5968	
1037532	SPECIES	Red-headed Woodpecker	Melanerpes erythrocephalus	S3	END	END	17PH5968	
1037532	SPECIES	Different Hawthorn	Crataegus pruinosa var. dissona	S3			17PH5968	
1037532	SPECIES	American Water-willow	Justicia americana	S2	THR	THR	17PH5968	
1037532	SPECIES	Tufted Titmouse	Baeolophus bicolor	S3			17PH5968	
1037532	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17PH5968	
1037532	SPECIES	Barn Swallow	Hirundo rustica	S4B	SC	SC	17PH5968	
1037532	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony	Colonial Wading Bird Colony	SNR			17PH5968	

Appendix F
Species At Risk Screening

Niagara Falls

Species At Risk Designations

ENDANGERED

THREATENED

SPECIAL CONCERN

EXTIRPATED

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

BIRDS	ESA Protection	Key Habitats Used By Species	Subject Lands
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 habitat not present on subject lands. Species not observed during breeding bird surveys.
Bank Swallow (<i>Riparia riparia</i>)	Known to Occur	Species and General Habitat Protection It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers.	Suitable habitat not present on subject lands. Species not observed during breeding bird surveys.
Barn Swallow (<i>Hirundo rustica</i>)	Known to Occur	Species and General Habitat Protection Prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Suitable nesting habitat not present on subject lands. Species observed foraging over lands during breeding bird surveys.
Bobolink (<i>Dolichonyx oryzivorus</i>)	Known to Occur	Species and General Habitat Protection Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Suitable habitat not present on subject lands. Species not observed during breeding bird surveys.
Chimney Swift (<i>Chaetura pelagica</i>)	Known to Occur	Species and General Habitat Protection Historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Suitable habitat not present on subject lands. Species not observed during breeding bird surveys.
Common Nighthawk (<i>Chordeiles minor</i>)	Known to Occur	N/A Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops)	Typical habitat not present on subject lands.
Eastern Meadowlark (<i>Sturnella Magna</i>)	Known to Occur	Species and General Habitat Protection Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Suitable habitat not present on subject lands. Species not observed during breeding bird surveys.
Eastern Whip-poor-will (<i>Caprimulgus vociferus</i>)	Known to Occur	Species and General Habitat Protection Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Typical habitat not present on subject lands.
Eastern Wood-Pewee (<i>Contopus virens</i>)	Known to Occur	N/A Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Potential breeding habitat present on subject lands. Species not observed on or adjacent to lands during breeding bird surveys.
Golden-winged Warbler (<i>Vermivora chrysoptera</i>)	Known to Occur	N/A Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Potential breeding habitat present on subject lands. Species not observed on or adjacent to lands during breeding bird surveys.
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	Historically Known to Occur	Species and General Habitat Protection Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Suitable habitat not present on subject lands. Species not observed during breeding bird surveys.
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 habitat not present on subject lands. Species not observed during breeding bird surveys.
Peregrine Falcon (<i>Falco peregrinus</i>)	Known to Occur	N/A Generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas.	Suitable habitat not present on subject lands. Species not observed during breeding bird surveys.
Red-Headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Known to Occur	N/A Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Typical breeding habitat not present on subject lands. Species not observed during breeding bird surveys.

Wood Thrush (<i>Hylocichla mustelina</i>)	Known to Occur	N/A	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Potential breeding habitat present on subject lands. Species not observed on or adjacent to lands during breeding bird surveys.
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 habitat not present on subject lands. Species not observed during breeding bird surveys.

FISH		ESA Protection	Key Habitats Used By Species	Subject Lands
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 subject lands.
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 subject lands.
Lake Chubsucker (<i>Erimyzon sucetta</i>)	Known to Occur	Species and General Habitat Protection	Generally prefer marshes, wetlands and lakes with clear, still waters and abundant aquatic plants	Potential habitat not present on subject lands.
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 subject lands.

INSECTS		ESA Protection	Key Habitats Used By Species	Subject Lands
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	Scattered stems of swamp and common milkweed present on lands. No use by Monarchs documented.
Rusty-patched Bumble Bee (<i>Bombus affinis</i>)	Formerly Occurred and May Still Occur	Species and General Habitat Protection June 27, 2014	Generally inhabits a range of diverse habitats including mixed farmland, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows	Typical habitat not present on subject lands.
West Virginia White (<i>Pieris virginianensis</i>)	Known to Occur	N/A	Generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (<i>Cardamine diphylla</i>), which is a small, spring-blooming plant of the forest floor.	Potential habitat not present on subject lands.

MAMMALS		ESA Protection	Key Habitats Used By Species	Subject Lands
Grey Fox (<i>Urocyon cinereoargenteus</i>)	May Occur	Species and General Habitat Protection	Generally prefers deciduous forests, marshes, swampy areas, and urban areas	Potential habitat not present on subject lands.
Eastern Small-footed Myotis (<i>Myotis leibii</i>)	Known to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius; Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Typical roosting habitat not present on subject lands.
Little Brown Myotis (<i>Myotis lucifugus</i>)	Known 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).	Significant potential roosting habitat not present on subject lands.
Northern Myotis (<i>Myotis septentrionalis</i>)	Known 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.)	Significant potential roosting habitat not present on subject lands.
Tri-colored Bat (<i>Perimyotis subflavus</i>)	Known 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.	Significant potential roosting habitat not present on subject lands.

PLANTS		ESA Protection	Key Habitats Used By Species	Subject Lands
American Chestnut (<i>Castanea dentata</i>)	Known to Occur	Species and General Habitat Protection	Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Typical habitat not present on subject lands. Species not observed during botanical inventories.
American Ginseng (<i>Panax quinquefolius</i>)	Known to Occur	Species and General Habitat Protection	Grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Typical habitat not present on subject lands. Species not observed during botanical inventories.
American Water-willow (<i>Justicia americana</i>)	Known to Occur	Species and General Habitat Protection	Generally grows along shorelines and sometimes in nearby wetlands, as well as along streams where the bottom is composed of gravel, sand or organic matter	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Black Ash (<i>Fraxinus nigra</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open moist to wet woodlands and wetlands, often growing on poorly drained soils.	Typical habitat not present on subject lands. Species not observed during botanical inventories.

Butternut (<i>Juglans cinerea</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Common Hoptree (<i>Ptelea trifoliata</i>)	Known to Occur	N/A	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 subject lands. Species not observed during botanical inventories.
Deerberry (<i>Vaccinium stamineum</i>)	Known to Occur	Species and General Habitat Protection	Generally occurs on sandy and well-drained soil, often in dry open woodlands (Niagara Gorge)	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Drooping Trillium (<i>Trillium flexipes</i>)	Historically Known to Occur	Species and General Habitat Protection	Generally grows in dry, sandy loam, nonacidic soils of mature, deciduous woodlands that are usually associated with watercourses.	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Eastern Flowering Dogwood (<i>Cornus florida</i>)	Known to Occur	Species Protection and Habitat Regulation	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Red Mulberry (<i>Morus rubra</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; Can grow in open areas such as hydro corridors	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Round-leaved Greenbrier (<i>Smilax rotundifolia</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open moist to wet woodlands, often growing on sandy soils. Habitat is variable.	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Shumard Oak (<i>Quercus shumardii</i>)	Known to Occur	N/A	Generally grows in deciduous forests, where the soils are poorly drained clay and clay loam. Requires full sunlight.	Typical habitat not present on subject lands. Species not observed during botanical inventories.
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.	Typical habitat not present on subject lands. Species not observed during botanical inventories.
Swamp Rose-mallow (<i>Hibiscus moscheutos</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open, coastal marshes, but it is also sometimes found in open wet woods, thickets and drainage ditches	Typical habitat not present on subject lands. Species not observed during botanical inventories.
White Wood Aster (<i>Eurybia divaricata</i>)	Known to Occur	Species and General Habitat Protection	Generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Typical habitat not present on subject lands. Species not observed during botanical inventories.

REPTILES		ESA Protection	Key Habitats Used By Species	Subject Lands
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.	Typical habitat not present on subject lands. Species not observed during visits.
Eastern Musk Turtle (<i>Sternotherus odoratus</i>)	Known to Occur	Species and General Habitat Protection	Generally prefers shallow, slowmoving water where it typically walks along the bottom rather than swimming	Typical habitat not present on subject lands. Species not observed during visits.
Eastern Ribbonsnake (<i>Thamnophis sauritus</i>)	Known to Occur	N/A	Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Typical habitat not present on subject lands. Species not observed during visits.
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.	Typical habitat not present on subject lands. Species not observed during visits.

Appendix G

Significant Wildlife Habitat Table

Assessment of potential Significant Wildlife Habitat – Chippawa Properties

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 overwintering habitat not present on Subject Lands.
Bat Maternity Colonies	Absent	Significant Potential roost habitat not present on the Subject Lands. Potential bat maternal roost colonies present in woodland to the east. No impact to potential habitat will occur during this project.
Turtle Wintering Areas	Absent	Suitable overwintering habitat not present on Subject Lands
Reptile Hibernaculum	Absent	Based on inventories/studies, no obvious hibernacula present on or adjacent to properties.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Potential habitat not present on Subject Lands
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	No colonial nesting species present on Subject Lands.
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	No colonial nesting species present on Subject Lands.
Migratory Butterfly Stopover Areas	Absent	Suitable habitat not present on Subject Lands
Landbird Migratory Stopover Areas	Absent	Significant potential habitat no 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 Lands
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	Suitable habitat not present on Subject Lands
Terrestrial Crayfish	Absent	Suitable habitat not present on Subject Lands
Special Concern and Rare Wildlife Species	Absent	Subject Lands providing incidental foraging opportunities for Barn Swallows. Use not considered a significant wildlife habitat function.
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.