

SCOPED ENVIRONMENTAL IMPACT STUDY
UPPER'S LANE DEVELOPMENT
CITY OF THOROLD

PREPARED FOR:

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Parkridge Lifestyle Communities Inc. to prepare an Environmental Impact Statement (EIS) to assess potential ecological impacts associated with establishing residential development on the property referred to as Upper's Lane Development. The property, hereafter called the Subject Property, is located north of the unopened Uppers Lane road allowance, approximately 260m west of Townline Road, in the City of Thorold (see Figure 1).

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

1.1 Description of the Subject Property

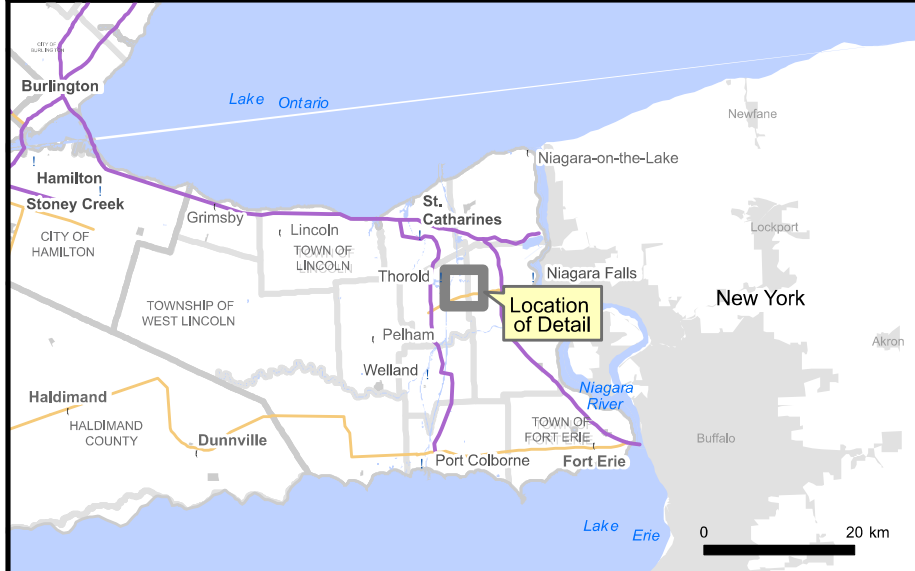
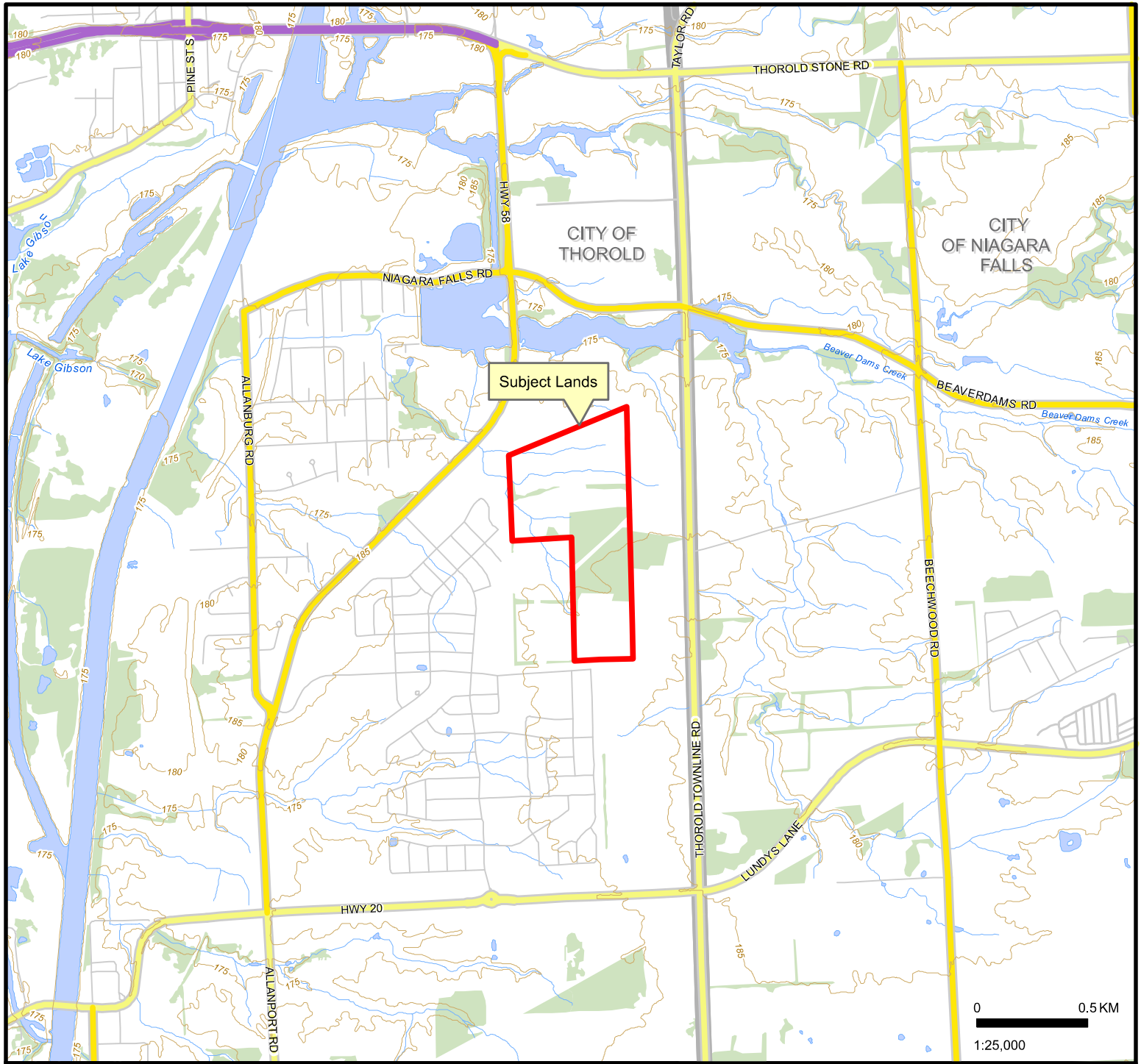
The Subject Property is located north of the unopened Uppers Lane road allowance, approximately 260m west of Townline Road, in the City of Thorold (see Figure 1). The property is located within the Neighbourhoods of Rolling Meadows Secondary Plan included in Schedule A-3 of the City of Thorold Official Plan. The property has not been assigned a municipal address, however the property is described as Part Lots 43, 44, 66 and 67 in the former Thorold Township. The Subject Property measures approximately 39.87 hectares (98.52 acres) in size.

A review of background air photos ranging from 1934 to present indicates that the northern and southern portions of the Subject Property have been historically used for agricultural purposes, with this agricultural use ongoing. The central portion of the property contains a mature deciduous forest, which is bisected by a TransCanada pipeline easement and associated infrastructure.

Further background mapping review and previous observations of the property suggest that natural heritage features on the Subject Property consist primarily of a Significant Woodland, as well as several small tributaries to Beaver Dams Pond, which is located approximately 260m north of the property. The woodland has been designated as significant due to its size, potential presence of species at risk and proximity to a watercourse. This woodland is designated as Environmental Conservation Area (ECA) in the Region of Niagara Official Plan, as well as Environmental Protection 2 in the City of Thorold Official Plan. The extent of mapped natural heritage features on the Subject Property are illustrated in Figure 2.

1.2 Description of Proposed Development

Proposed development on this property will eventually consist of a residential subdivision, containing a mix of single detached, on-street townhouses, associated infrastructure and a park block. For the purposes of this assessment, various future development blocks have been established to form a general land use pattern, with details of development in each block to be refined as part of future applications. The proposed concept plan is provided in Appendix A.



**Figure 1
Location of Subject Property**

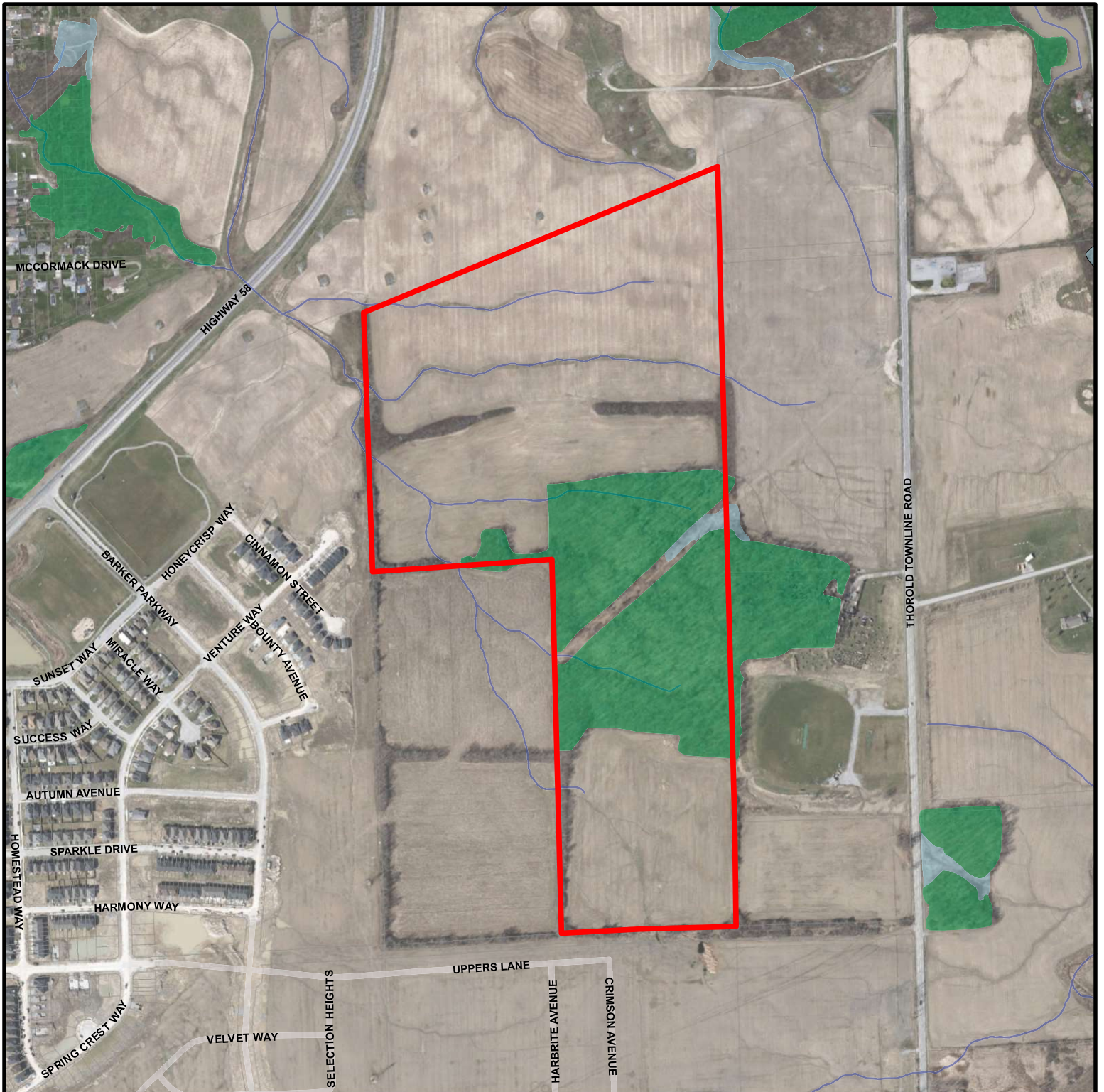
**Environmental Impact Study
Upper's Lane Development
City of Thorold, ON**

Prepared for: Parkbridge Lifestyle Community

Prepared by: **COLVILLE**
CONSULTING INC.

DATE: January 2024

FILE: C22094



Legend

- Property Boundaries
- Mapped Extent of Significant Woodlands/Wooded Areas
- Mapped Extent of Other Wetlands
- Watercourses

Figure 2
Regionally Mapped Natural Heritage
Features on the Subject Property

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2.0 ENVIRONMENTAL POLICY

2.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) was issued under Section 3 of the Planning Act and came into effect on May 22, 1996. The PPS was updated in 1997, 2005, 2014, and most recently in 2020. It applies to all applications submitted after May 1, 2020, and states that decisions affecting planning matters “shall be consistent with” policy statements issued under the Act. This EIS has been prepared in compliance with Part V, Policy 2.1 of the PPS, which deals specifically with the long-term protection and management of natural heritage features and areas.

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

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

Development and site alteration is not permitted in:

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

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

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

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

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

2.2 Niagara Region Official Plan

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

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

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

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

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

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

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

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

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

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

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

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

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

Policies related to buffers in settlement areas are 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 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 Thorold Official Plan

The City of Thorold's Official Plan contains policies that are to be used to guide the development of areas within the Neighbourhoods of Rolling Meadows Secondary Plan. Accordingly, Schedule A-3, the Rolling Meadows Secondary Plan, designates the property as a mix of Residential, Environmental Protection Two and Greenfield Overlay.

Policies related to the Neighbourhoods of Rolling Meadows Secondary Plan are found in Section B1.8 of the City of Thorold Official Plan. Policies specific to the Natural environment are located in Section B1.8.9 and state that these natural areas are designated Environmental Protection Two and are subject to the policies of Section B3.3.

Section B3 of the Official Plan refers to the Natural Heritage designations within the city. The designations within the plan are intended to address the natural heritage policies of the PPS, Niagara Escarpment Plan, Greenbelt Plan and the Regional Official Plan.

Policies within the official plan related to Environmental Protection Two can be found in Section B3.3.

Section B3.3.2 states that the following list of natural heritage features comprise the Environmental Protection Two designation:

- a) Locally significant wetlands located outside of the Greenbelt Plan;
- b) Significant habitat of special concern species;
- c) Significant woodlands;
- d) Significant valley lands;
- e) Regionally significant Life Science Areas of Natural and Scientific Interest (ANSI);
- f) Savannahs and tall grass prairies;
- g) Alvars;
- h) Significant wildlife habitat; and,
- i) Publicly owned conservation lands.

Section B3.3.4.1 outlines the conditions for new development within lands designated at Environmental Protection Two. This section states that new development and site alteration may be permitted in the Environmental Protection Two designation provided it has been demonstrated through an Environmental Impact Study (EIS) that there will be no negative impact to the natural heritage feature or its ecological functions.

Section B3.3.4.1 also states that where a proposal addresses the requirement of no negative impact, the adjacent official plan designation will apply and a Zoning By-law Amendment will be required to identify those lands where site alteration and development will be permitted. Where development or site alteration is proposed in proximity to lands in the Environmental Protection Two designation, efforts should be made, to maintain and where possible enhance linkages amongst lands designated Environmental Protection One, Environmental Protection Two, or Environmental Protection Three. In addition, where development or site alteration is proposed, a Tree Preservation Plan shall be required to provide recommendations with respect to the protection or enhancement of existing trees. The Plan shall be prepared in accordance with the Niagara Region Tree and Forest Conservation By-law and implementation of the plan should be authorized and monitored by a member of the Ontario Professional Forestry Association.

Section B3.3.4.4 includes policies related to lands adjacent to natural heritage features and states that adjacent lands are the lands adjacent to a natural heritage feature within which impacts must be considered and within which the compatibility of the development proposal must be addressed. For the purposes of this Official Plan, adjacent lands are defined as all lands within 50 metres of land designated Environmental Protection Two.

Section B3.3.4.4 goes on to state that development and site alteration may be permitted without an Official Plan Amendment on adjacent lands, subject to the completion of an Environmental Impact Study (EIS). The EIS will be required to demonstrate that there will be no negative impact on the natural heritage feature or its ecological function. The EIS will be subject to the review and approval of the appropriate approval authority, in accordance with policy C6.3 of this Plan. The requirements for an Environmental Impact Study are contained in Section C6 of this Plan.

2.4 Niagara Peninsula Conservation Authority

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

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

Regulated features in the vicinity of the proposed development include several small tributaries to Beaver Dams Pond. NPCA policies related to the management of watercourses are contained in Section 9 of the policy document. This section states that in general interference with a watercourse is not permitted, except in accordance with the policies included in the policy NPCA document.

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

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

3.0 STUDY APPROACH

3.1 Background Review

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

- ◆ Niagara Region Official Plan (Consolidated 2014);
- ◆ City of Thorold Official Plan (2016);
- ◆ Data available from the Natural Heritage Information Center (NHIC);
- ◆ Background data available from the NPCA and Ministry of Natural Resources and Forestry (MNRF);

- ◆ Niagara Natural Areas Inventory (NPCA 2010); and
- ◆ Recent and historical aerial photographic imagery.

3.2 Field Inventories

The following inventories and assessments were used to assess potential impacts associated with this project:

- 1) Spring, summer and fall inventories of the woodland, hedgerows and meadow/agricultural areas;
- 2) Ecological Land Classification description and mapping of vegetation communities on and adjacent to the property;
- 3) Assessment of watercourses using methods described in the Evaluation, Classification and Management of Headwater Drainage Features guidelines;
- 4) Breeding bird surveys of the woodland and agricultural/meadow portions of the property;
- 5) Active hand searches for reptiles and amphibians using methods outlined by the Ministry of Natural Resources and Forestry (MNRF);
- 6) An assessment of potential bat habitat on the property using methods outlined by MNRF; and
- 7) Document any wildlife species observed on the property during assessments, including winter assessments for wildlife use of the property.

4.0 STUDY FINDINGS

4.1 Botanical Inventories and Vegetation Mapping

A previous botanical inventory of the Subject Property was conducted on July 19, 2018, with subsequent botanical assessments completed on October 11, 2022 and April 21, 2023. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described, and a list of botanical species was compiled. Species status was assessed for Ontario (Oldham and Brinker 2009) and Niagara Region (Oldham 2010).

The extent of vegetation communities are described below and illustrated in Figure 3.

4.1.1 Botanical Inventories

One Hundred and ten (110) plant species were documented on the property during our inventories. No species considered at risk in Ontario were documented on the Subject Property. One locally uncommon species, Bur Oak, was documented on the Subject Property occurring sporadically within the woodland area and hedgerows. A vascular plant checklist is provided in Appendix B.

4.1.2 Vegetation Communities

The Subject Property consists of two irregularly shaped agricultural fields located north and south of a deciduous forest community. A series of narrow deciduous hedgerows are also located on the peripheries of these former fields. Further description of vegetation communities on the property are provided below and illustrated in Figure 3. Photos illustrating the vegetation conditions on the property are provided in Appendix C.

Dry-Moist Old Field Meadow Type/Open Agriculture (CUM1-1/OAG)

The largest vegetation community on the property consists of two agricultural fields, which are currently planted to soybeans. Vegetation in these areas consisted of a mix of old field and ruderal species in the fall of 2022, prior to being ploughed in the late-fall of 2022 to allow for archeological assessment.

Dry-Fresh Oak-Maple-Hickory Deciduous Forest Ecosite (FOD2)

Located on the central portion of the property is a deciduous forest that was described as Dry-Fresh Oak-Maple-Hickory Deciduous Forest Ecosite (FOD2). The canopy in this community consists of Shagbark Hickory, American Beech, Red Oak, Ironwood and associated species, forming a canopy cover averaging approximately 80%. The variable sub-canopy of this community consists of similar species represented in the canopy. The sparse shrub layer contained sapling of canopy species, as well as Wild Red Raspberry, Honeysuckle and Grey Dogwood.

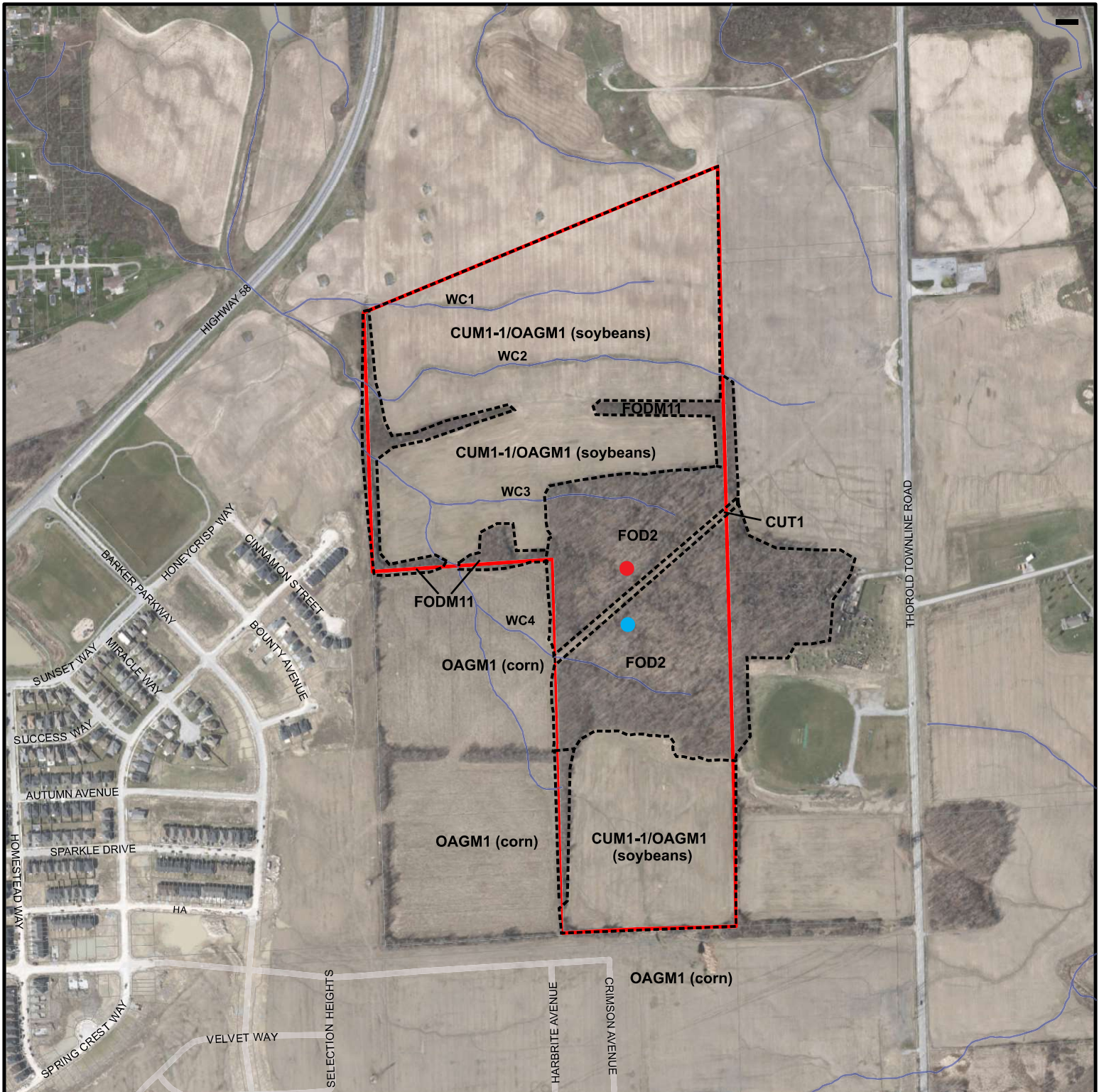
The portion of the woodland community east of the property forms part of a paintball facility. The understory in this portion of the woodland appears to be maintained as part of that operation.

Mineral Cultural Thicket Ecosite (CUT1)

The FOD2 woodland community is bisected by a narrow right of way associated with an underground pipeline, which runs northeast to the southwest across the property. Tree cover in this right of way was historically removed to facilitate excavation and burial of the pipeline. Vegetation in this area currently consists of primarily of Mineral Cultural Thicket Ecosite (CUT1), containing species such as Common Buckthorn, Grey Dogwood, Green Ash and White Elm, with a dense cover of old field herbaceous species. Portions of this CUT1 community also contain pockets of Common Reed and Reed Canary-grass, which were too small to map as individual vegetation communities. These communities have likely formed in areas where backfill of the pipeline trench has settled below the normal land elevation.

Naturalized Deciduous Hedge-row Ecosite (FODM11)

The deciduous hedgerows on this property support a variable mix of trees and shrubs. The majority of hedgerows contain scattered Shagbark Hickory, Red Oak, Sugar Maple, Basswood and White Oak, with tall shrubs of Common Buckthorn, Hawthorns and Grey Dogwood prevalent. A wider portion of the hedgerow on the lands contains a mix of Shagbark Hickory, American Beech, Red Oak and White Oak, with a sparse shrub layer.



Legend

- Property Boundaries
- Watercourses
- CUM1-1** Dry-Moist Old Field Meadow Type
- CUT1** Mineral Cultural Thicket Ecosite
- FOD2** Dry-Fresh Oak-Maple-Hickory Deciduous Forest Type
- FODM11** Naturalized Deciduous Hedge-row Ecosite
- OAGM1** Annual Row Crops
- Approximate Location of Eastern Wood-pewee
- Approximate Location of Wood Thrush

Figure 3
Extent of Vegetation Communities
on the Subject Property

Environmental Impact Study
Upper's Lane Development
City of Thorold, ON

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Prepared by:



January 2024

FILE: C22094

4.2 Wildlife and Wildlife Habitat

4.2.1 Breeding Bird Survey

Breeding bird surveys were conducted on May 28 and June 22, 2018, to inventory breeding birds on and adjacent to the Subject Property. Surveys were completed at least 15 days apart, under suitable weather conditions with little to no wind or precipitation. A thorough search of the subject property was completed during both surveys between dawn and no later than 10:00 am. All birds seen or heard calling were recorded and the highest breeding evidence per species was determined in accordance with the criteria of the Atlas of the Breeding Birds of Ontario (Cadman et al. 2007).

A total of 29 species of birds were observed or heard on or above the Subject Property and 8 additional species on adjacent lands. According to Ontario conservation status ranks (S-rank) designations, except for 1 non-native species, all other recorded species are considered to be “secure” (S5 - common, widespread and abundant) or “apparently secure” (S4 - uncommon but not rare) in the province of Ontario. The recorded species are also considered to be very common to common permanent or summer residents in the Niagara Region except for the uncommon summer resident Brown Thrasher, Red-tailed Hawk, Turkey Vulture, White-breasted Nuthatch, Wood Thrush, uncommon permanent resident Red-bellied Woodpecker, Wild Turkey and extremely rare summer straggler Black-and-white Warbler (Niagara Natural Areas Inventory, 2010).

The Barn Swallows observed flying and calling to the west of the Subject Property on both site visits are listed as Special Concern in Ontario and Canada.

The Eastern Wood-pewee heard calling on the second site visit within the woodland in the center of the Subject Property is designated as Special Concern provincially and federally.

The Wood Thrush heard calling, on the first site visit within the woodland in the center of the Subject Property is designated as Special Concern in Ontario and has been designated as Threatened in Canada.

4.2.2 Assessment of Potential Bat Roosting Habitat

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

An assessment of potential bat roosting habitat was conducted on April 5, 2023 using methods described in MNRF (2017). From our observations, several potential roost trees were identified in the FOD2 community. Since these trees are to be retained, no acoustic monitoring or further assessments were conducted on these trees.

Table 1. Results of the Breeding Bird Surveys.

Species	S Rank	Niagara Status*	Woodland	Crop Lands /Meadow	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
American Goldfinch	S5B	C R	X		X	PO	S
American Robin	S5B	VC R	X	X	X	PR	A
Baltimore Oriole	S4B	C R	X			PO	S
Barn Swallow	S4B	VC R		X	X	OBS	X
Black-and-white Warbler	S5B	ER S			X	PO	S
Black-capped Chickadee	S5	C P	X		X	CO	FY
Blue Jay	S5	VC P	X	X	X	PR	A
Brown Thrasher	S4B	U R	X			PO	H
Brown-headed Cowbird	S4B	VC R	X		X	CO	FY
Canada Goose	S5	VC P		X	X	OBS	X
Cedar Waxwing	S5B	C R	X			PO	H
Chipping Sparrow	S5B	C R	X			PO	S
Common Grackle	S5B	VC R	X			PO	H
Downy Woodpecker	S5	C P			X	PO	S
Eastern Kingbird	S4B	C R	X			PR	P
Eastern Wood-pewee	S4B	C R	X			PO	S
Gray Catbird	S4B	C R	X		X	PR	A
Great Crested Flycatcher	S4B	C R	X			PO	S
Horned Lark	S5B	C R			X	PO	S
House Sparrow	SNA	VC P	X	X		PO	H
Indigo Bunting	S4B	C R			X	PO	S
Killdeer	S5B,S5N	C R	X	X	X	PO	S
Northern Cardinal	S5	C P	X		X	PR	P
Northern Flicker	S4B	C R	X			PO	H
Red-bellied Woodpecker	S4	U P	X		X	CO	AE
Red-eyed Vireo	S5B	C R	X		X	PO	S
Red-tailed Hawk	S5	U R		X	X	PR	A
Red-winged Blackbird	S4	VC R	X	X		PO	S
Ring-billed Gull	S5B,S4N	VC R	X	X		OBS	X
Savannah Sparrow	S4B	VC R	X	X	X	PR	A
Song Sparrow	S5B	VC R	X	X	X	CO	FY
Tree Swallow	S4B	VC R	X			PO	H
Turkey Vulture	S5B	U R	X	X		PO	H
Warbling Vireo	S5B	C R	X			PO	S
White-breasted Nuthatch	S5	U R			X	PO	S
Wild Turkey	S5	U P	X	X		PO	H
Wood Thrush	S4B	U R	X			PO	S

* VC – very common; C – common; U – uncommon; UR – Uncommon to rare; ER - Extremely Rare; O – Occasional; P – permanent resident; R – summer resident; S - Straggler (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

FY – recently fledged young

CF – adult carrying food for young

NY – nest with young

‡ – Area Sensitive Species

4.2.3 Incidental Wildlife Observations

Incidental wildlife observations including signs were recorded during each visit to the property. Observations included eastern cottontail, coyote, grey squirrel, racoon and signs of White-tailed Deer.

Incidental insect observations including signs were recorded during both breeding bird survey visits. Observations includes Admiral Butterfly (*Limenitis arthemis*), Ants (Formicidae), Bumble Bee (Bombini), Cabbage White Butterfly (*Pieris rapae*), Cricket (Gryllidae), Deer Fly (Chrysops), Dragonfly (Odonata), Flesh Fly (Sarcophagidae), Mosquito (Culicidae), and Moth (Lepidoptera).

4.3 Aquatic Habitat Assessment

As illustrated on Figure 2, four watercourses are located on the Subject Property. All of these watercourses converge on or downstream of the property and are tributaries of Beaver Dams Pond. Beaver Dams Pond is known to support a warmwater fish community. For ease of description, these watercourses have been assigned numerical identifiers, which are illustrated in Figure 3.

Watercourse 1

Watercourse 1 (WC1) is located on the northern portion of the Subject Lands and drains water from the northern portion of the property west to the outlet upstream of Highway 58. The channel of this watercourse is poorly defined and consists of a shallow draw within the soybean field (see photos 11 and 12 in Appendix C). Lands within and adjacent to this watercourse have been incorporated into the agricultural use on the property and no naturally occurring vegetation was present during the assessment on June 16, 2023. Flow in this watercourse is ephemeral and associated with snow melts and major precipitation events. The watercourse does not appear to be providing any direct fish habitat function.

Watercourse 2

Watercourse 2 (WC2) is also located on the northern portion of the Subject Lands and drains water from a portion of the north end of the property and adjacent lands west towards Highway 58. The channel of this watercourse appears to have been modified to maintain drainage and is better defined than Watercourse 1, although it also consists of a shallow draw within the soybean field (see photos 13 -15 in Appendix C). Lands adjacent to Watercourse 2 have been planted in Soybeans and no naturally occurring vegetation was present during the assessment on June 16, 2023. Flow in this watercourse is ephemeral and it does not appear to be providing any direct fish habitat function.

Watercourse 3

Watercourse 3 (WC3) originates from drainage within the woodland on the property. The channel in the woodland is generally poorly defined, however flow has eroded a distinctive channel within the western portion of the woodland. Downstream of the woodland, the channel of Watercourse 3 is poorly defined and occurs as drainage within a shallow draw in the Soybean field (see photo 16 in Appendix C). Lands within and adjacent to Watercourse 3 have been planted in Soybeans and no naturally occurring vegetation was present during the assessment on June 16, 2023. Flow in this watercourse is also ephemeral and no direct fish habitat function is present.

Watercourse 4

Watercourse 4 (WC4) also originates from drainage within the woodland on the property and conveys water to lands west of the property. The channel in the woodland is generally poorly defined and becomes more evident west of the property within the corn field (see photo 17 in Appendix C). Lands within and adjacent to Watercourse 4 on the property are naturally vegetated in the woodland, however naturally occurring vegetation was not present west of the property during the assessment on June 16, 2023. As with the other watercourses, flow in this watercourse is ephemeral and no direct fish habitat function is present.

From our assessment, none of these watercourses appears to be providing any significant fish habitat function on site and are not likely contributing significantly to fish habitat downstream.

5.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1 Species at Risk

5.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered or Threatened species were documented on or adjacent to the property during our observations.

As part of our assessment of this property we completed a search of background information available from the Natural Heritage Information Center (NHIC) (see Appendix D), as well as complete a species at risk screening based on species known to occur in the City of Thorold (see Appendix E) and reviewed correspondence previously provided by the Ministry of Natural Resources and Forestry (MNR) (Appendix F). Based on our observations, suitable habitats for Red-headed Woodpecker, Butternut, Eastern Flowering Dogwood, Little Brown Bat, Northern Myotis and Round-leaved Greenbrier are present on the property, primarily within the woodland area. Red-headed Woodpecker were not detected during breeding bird surveys and no Butternut, Eastern Flowering Dogwood or Round-leaved Greenbrier were observed during botanical inventories.

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

Additionally, data available from the Natural Heritage Information Center (NHIC) indicates that Endangered and Threatened species known to occur historically in the vicinity of the Subject Property include Northern Bobwhite (Appendix D). This species does not currently occur in the Region and was not detected during breeding bird surveys. Its therefore our conclusion that the Subject Property is not proving significant habitat for Northern Bobwhite.

5.1.2 Other Potential Species of Conservation Concern

Three species of Special Concern, Barn Swallow, Eastern Wood-pewee and Wood Thrush were documented on the property during our survey work. Eastern Wood-pewee and Wood Thrush were documented within the woodland in the center of the Subject Property, while Barn Swallows were documented flying over the agricultural portion of the lands.

An Eastern Wood-pewee was heard calling from within the woodland on the Subject Property. This species breeds in virtually every type of wooded habitat, from urban shade trees, roadsides, woodlots, and orchards to mature forests (McCarty 1996). Breeding territories of Eastern Wood-pewee in Southern Ontario are reported to range from 1.52ha to 2.0ha in size (COSEWIC 2012), and it is suspected that the individual heard calling from the woodland represents one breeding pair on the property.

Wood Thrush will typically nest in the interior of deciduous and mixed forests, and particularly woodlands containing attributes that include trees >16 m in height, a variety of deciduous tree species, moderate sub-canopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter (Evans et al. 2011). During the breeding season, this species has been documented to establish and defend territories ranging between 0.08-4.0 ha in size, depending on quality of habitat (Evans et al. 2011). Although Wood Thrush were only documented during the first breeding bird survey, for the purposes of this assessment, it is assumed that this species is nesting within the woodland on the property.

Several Barn Swallows were documented foraging over the Subject Property during breeding bird surveys. Since no potential nest structures are located on or adjacent to the property, it is assumed that this property is providing incidental foraging habitat for Barn Swallows, however this use is not considered to be significant.

5.2 Significant Wildlife Habitat

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

5.2.1 Seasonal Concentration Areas

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

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

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

No wildlife use consistent with seasonal concentrations were documented during our observations of the property. Although no detailed surveys were completed, it is possible that isolated trees within the woodland are providing potential maternal roost habitat for bats. Since no trees from the woodland will be impacted by development on the property, no impact to potential maternal roost habitat will occur as a result of this project.

5.2.2 Rare Vegetation Communities

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

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

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

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

5.2.3 Specialized Habitats of Wildlife considered SWH

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

Specialized habitats for wildlife include:

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

No specialized habitats for wildlife are present on the Subject Property.

5.2.4 Habitats of Species of Conservation Concern considered SWH

Habitat of Species of Conservation Concern includes wildlife species that are listed as Special Concern or rare, that are declining or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act. The following habitats are considered candidate SWH:

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

Three Species of Conservation Concern (Wood Thrush, Eastern Wood-pewee and Barn Swallow) were observed on and adjacent to the Subject Property. The woodland is assumed to be providing potential breeding habitat for Wood Thrush and Eastern Wood-pewee, while the agricultural portions of the property are providing foraging opportunities for Barn Swallows. For the purposes of this assessment, the woodland on the property is assumed to be functioning as significant wildlife habitat, providing potential breeding habitat for Wood Thrush and Eastern Wood-pewee.

5.2.5 Animal Movement Corridors

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

Our review of the background mapping and air photos indicates that the woodland and hedgerows on the Subject Property are physically isolated from other natural areas in the vicinity of the property. The nearest natural areas consist of a small woodland east of Townline Road, approximately 290m east of the property, as well as natural areas associated with Beaver Dams Pond approximately 450m north of the most northerly hedgerow and a Tributary to Beaver Dams Creek approximately 500m east of the woodland. Lands between these natural areas consist primarily of active agricultural lands.

As part of our assessment of these lands, site visits were conducted to determine potential wildlife movement between the woodland and hedgerows on the property and other natural areas. Our observations indicated that very little terrestrial wildlife movement is occurring between the woodland on these lands and adjacent natural areas. It is possible that deer, coyotes and other larger bodied animals are moving between these areas, however any movement appears to be random, as no trails or evidence of continued use were evident on site.

Based on our observations, the woodland on this property appears to be functioning primarily as an isolated woodland and does not form part of a wildlife movement corridor.

5.3 Significant Areas of Natural and Scientific Interest

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

5.4 Significant and Other Wetlands

No Significant Wetlands are located on or adjacent to the property.

Background mapping available from the Niagara Region indicates that an other wetland has been identified within the pipeline easement, between the two woodland pockets. Our assessment indicates that portions of the thicket community over the pipeline also contain pockets of Common Reed and Reed Canary-grass, which were too small to map as individual vegetation communities. Because of the size of these wet pockets, no portion of the property is considered to be other wetland.

5.5 Significant Woodlands

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

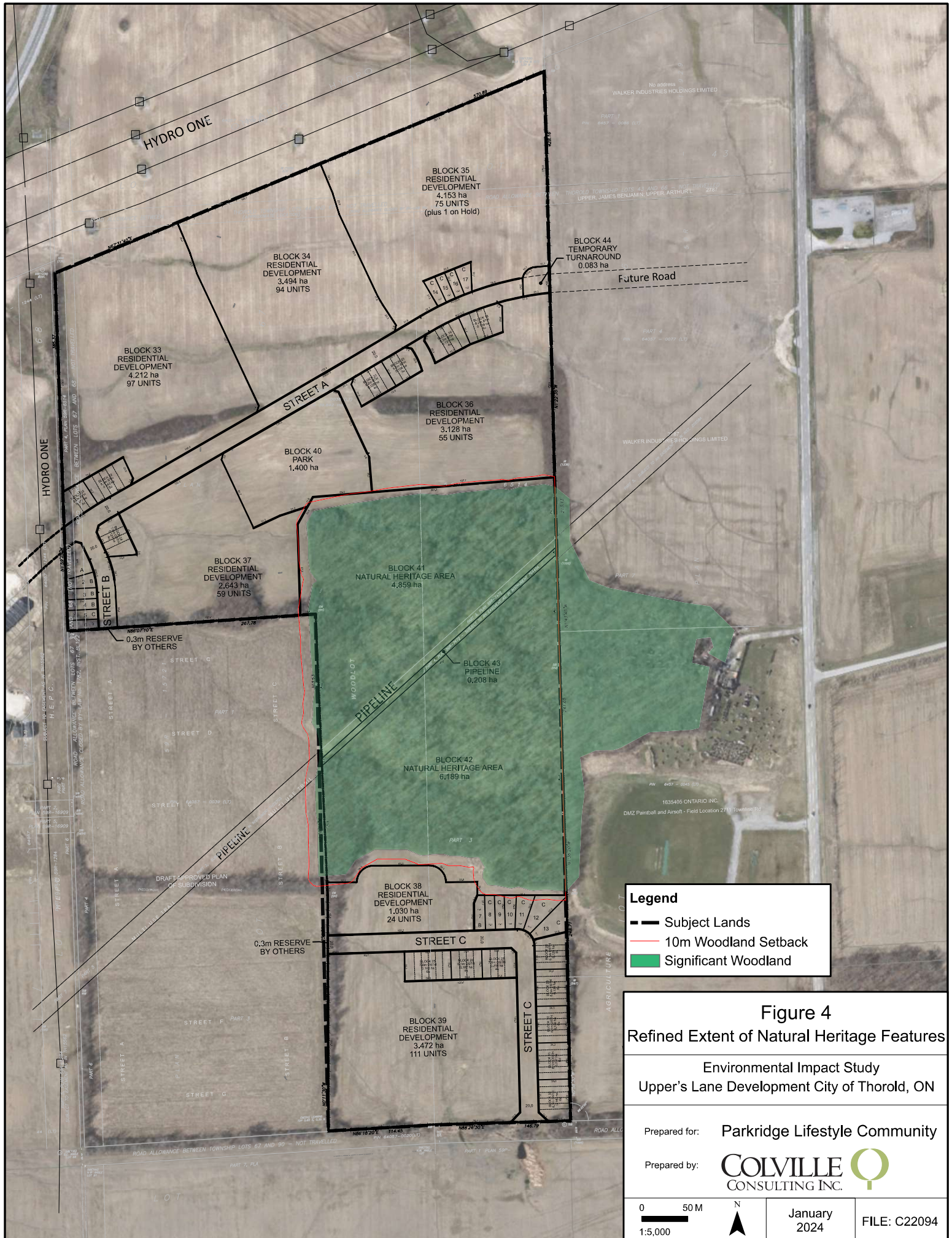
- a) Two hectares or greater in size;
- b) One hectare or greater in size meeting at least one of the following criteria:
 - i. Naturally occurring (i.e, not planted) trees
 - ii. Treed areas planted with the intention of restoring woodland;
 - iii. 10 or more trees per hectare greater than 100 years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

From our surveys and assessments, the FOD2 communities on and adjacent to the property (see Figure 3) satisfies the canopy cover criteria, as well as size, naturally occurring trees, older growth, proximity to water and proximity to significant wildlife habitat criteria listed above (See Table 4 below).

Table 2: Assessment of Significant Woodland criteria.

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

Our assessment also indicates that several hedgerows are located on the Subject Property, with these hedgerows described as Naturalized Deciduous Hedgerow Ecosites (FODM11). Because these hedgerows are generally less than 40m in width and isolated from the FOD2 community on the property, these hedgerows are not considered to be significant or other woodland as part of this assessment. The refined extent of woodlands delineated with Niagara Region staff and illustrated in Figure 4.



Legend

- Subject Lands
- 10m Woodland Setback
- Significant Woodland

Figure 4
Refined Extent of Natural Heritage Features

Environmental Impact Study
 Upper's Lane Development City of Thorold, ON

Prepared for: **Parkridge Lifestyle Community**

Prepared by: **COLVILLE CONSULTING INC.**

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January 2024

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5.6 Watercourses

As illustrated in Figure 3, four watercourses have been identified on this property. For the purposes of this assessment, each of the watercourses has been assigned an individual identifier. As part of our survey of this property, we completed an assessment of the watercourses using the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (TRCA 2014). Using the data and observations from the evaluation of these watercourses, Hydrology, Riparian Habitat, Fish and Fish Habitat and Terrestrial Habitat conditions were classified. The classification of each condition is provided below.

Please note that the watercourses on and adjacent to the property were not of sufficient size or drainage area to apply OSAP S4.M10.

Watercourse 1 (WC1)

Hydrology Classification

Watercourse 1 (WC1) is located on the northern portion of the Subject Lands and conveys flow ephemeral to the outlet upstream of Highway 58. No standing water was present during our observations, and the small drainage area (approximately 12ha) and lack of channel definition suggests a limited flow volume and duration.

Because this watercourse channel is poorly defined, has no groundwater seepage or wetland functions, is cultivated and has a substrate that consists of the native silty-clay soil, this watercourse is classified as providing limited hydrology functions.

Riparian Habitat

As described above and illustrated in photos 11 and 12 in Appendix C, Watercourse 1 is currently cultivated and no naturally occurring vegetation was present during the assessment on June 16, 2023. Therefore Watercourse 1 is classified as having limited riparian habitat functions.

Fish and Fish Habitat

Watercourse 1 ultimately conveys flow and allochthonous materials to Beaver Dams Pond approximately 560m downstream of the property. Because of the ephemeral nature of this watercourse, Watercourse 1 was determined to be providing a contributing function to fish habitat in the watershed.

Terrestrial Habitat

Due to the nature of the watercourse and the lack of natural vegetation in the riparian area, this watercourse was determined to have no terrestrial habitat present, and therefore is considered to have limited function.

Management Recommendations

Based on our assessment, Watercourse 1 is providing limited functions, and therefore no management is required per TRCA (2014).

Watercourse 2 (WC2)

Hydrology Classification

Watercourse 2 (WC2) is located within the agricultural area on the northern portion of the property. No standing water was present during any of our observations, and the small drainage area (approximately 15ha) and lack of channel definition suggests a limited flow volume and duration.

Similar to Watercourse 1, this watercourse channel is poorly defined, has no groundwater seepage or wetland functions and is cultivated, and therefore it is our assessment that this watercourse is providing limited hydrology functions.

Riparian Habitat

As described above and illustrated in photos 13 to 15 in Appendix C, Watercourse 2 is currently cultivated and no naturally occurring vegetation was present during the assessment on June 16, 2023. Therefore Watercourse 2 is classified as having limited riparian habitat functions.

Fish and Fish Habitat

Watercourse 2 conveys flow to Beaver Dams Pond approximately 620m downstream of the property. Because of the ephemeral nature of this watercourse, Watercourse 2 was determined to be providing a contributing function to fish habitat in the watershed.

Terrestrial Habitat

Due to the nature of the watercourse and the lack of natural vegetation in the riparian area, this watercourse was determined to have no terrestrial habitat present, and therefore is considered to have limited function.

Management Recommendations

Based on our assessment, Watercourse 2 is providing limited functions, and therefore no management is required per TRCA (2014).

Watercourse 3 (WC3)

Hydrology Classification

Watercourse 3 (WC3) is located on the central portion of the property and originates from drainage within the woodland. No standing water was present during our observations, and the small drainage area (approximately 10ha) and lack of channel definition suggests a limited flow volume and duration.

Because this watercourse has ephemeral flow and has no groundwater seepage, this watercourse is classified as providing limited hydrology functions.

Riparian Habitat

As described above and illustrated in photo 16 in Appendix C, Watercourse 3 is currently cultivated downstream of the woodland and no naturally occurring vegetation was present during the assessment on June 16, 2023. Therefore Watercourse 3 is classified as having limited riparian habitat functions.

Fish and Fish Habitat

Watercourse 3 ultimately conveys flow and allochthonous materials to Beaver Dams Pond approximately 690m downstream of the property. Because of the ephemeral nature of this watercourse, Watercourse 3 was determined to be providing a contributing function to fish habitat in the watershed.

Terrestrial Habitat

Due to the general lack of natural vegetation in much of the riparian area, this watercourse was determined to have no terrestrial habitat present, and therefore is considered to have limited function.

Management Recommendations

Based on our assessment, Watercourse 3 is providing limited functions, and therefore no management is required per TRCA (2014).

Watercourse 4 (WC4)

Hydrology Classification

Watercourse 4 (WC4) originates from drainage within the woodland on the property and conveys water to lands west of the property. No standing water was present during our observations, and the small drainage area (approximately 11ha) and lack of channel definition suggests a limited flow volume and duration.

Because this watercourse has ephemeral flow and has no groundwater seepage, this watercourse is classified as providing limited hydrology functions.

Riparian Habitat

As described above and illustrated in photo 17 in Appendix C, Watercourse 4 is natural vegetated on the property and is cultivated west of the property. Because of the condition of the riparian area downstream of the property, Watercourse 4 is classified as having limited riparian habitat functions.

Fish and Fish Habitat

Watercourse 4 ultimately conveys flow and allochthonous materials to Beaver Dams Pond approximately 1150m downstream of the property. Because of the ephemeral nature of this watercourse, Watercourse 4 was determined to be providing a contributing function to fish habitat in the watershed.

Terrestrial Habitat

Due to the general lack of natural vegetation in much of the riparian area, this watercourse was determined to have no terrestrial habitat present, and therefore is considered to have limited function.

Management Recommendations

Based on our assessment, Watercourse 4 is providing limited functions, and therefore no management is required per TRCA (2014).

6.0 POTENTIAL ECOLOGICAL IMPACTS

Proposed future development on this property will consist of a residential subdivision, containing a mix of single detached and on-street townhouses. For the purposes of this application, various future

development blocks have been established to form a general land use pattern, with details of development in each block to be refined as part of future applications. The proposed development plan is provided in Appendix A and illustrated in Figure 4.

6.1 Significant Habitat of Endangered and Threatened Species

No Endangered or Threatened Species were documented on the property during our assessments. Although not verified, it is possible that the woodland on this property is providing roosting habitat for Myotis species, however as potential roost trees in the woodland will be retained any use of the woodland by bats will be maintained post development.

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

6.2 Species of Special Concern

Three Species of Special Concern (Wood Thrush, Eastern Wood-Pewee and Barn Swallow) were documented on and adjacent to the property during our survey work (See Figure 3).

Wood Thrush will typically nest in the interior of deciduous and mixed forests, particularly woodlands containing attributes that include trees >16 m in height, a variety of deciduous tree species, moderate sub-canopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter (Evans et al. 2011). During the breeding season, this species has been documented to establish and defend territories ranging between 0.08-4.0 ha in size, depending on the quality of habitat (Evans et al. 2011).

As illustrated in Figure 4, no portion of the woodland will be impacted by this project and a buffer from the woodland has been established. Development on this property will not impact Wood Thrush use of the woodland.

Eastern Wood-pewee are assumed to be breeding in the woodland on the Subject Property. This species is often associated with forest clearings and edges, and will breed in virtually every type of wooded community (Watt et al. 2020). No portion of the proposed project will impact or affect habitat being used by this species and Eastern Wood-pewee will continue to use the woodland post development.

As discussed above, Barn Swallows were documented foraging over the property. Since foraging is incidental and will continue after construction, the proposed development will not impact Barn Swallow use of the property.

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

6.3 Locally Rare and Uncommon Species

Locally uncommon plant species documented on the property were limited to Bur Oak, which is located sporadically in hedgerows. It is recommended that any large Bur Oaks be retained where possible, however to maintain this species in the area, it is recommended that Bur Oak be incorporated into buffer enhancement plants adjacent to the woodland area.

Several locally uncommon bird species (Brown Thrasher, Red-tailed Hawk, Turkey Vulture, White-breasted Nuthatch, Wood Thrush, Red-bellied Woodpecker and Wild Turkey) were documented on the property during inventories. Most of these species were documented in the woodland on the property, with Red-tailed Hawk, Turkey Vulture and Wild Turkey also documented on or over the agricultural portions of the property. As no impact to the forest will occur as a result of this project, the proposed development will not impact woodland habitat of these species. Similarly, although the proposed development will impact much of the agricultural portions of this property, Red-tailed Hawk, Turkey Vulture and Wild Turkey will continue to use available habitats on and adjacent to the property.

In addition to the above, the extremely rare summer straggler Black-and-white Warbler was documented in the woodland during breeding bird surveys. This species does not typically breed in Niagara, and therefore it is assumed that the woodland was providing stopover habitat. The woodland will continue to provide this function post development.

6.4 Significant Wildlife Habitat

Our assessment indicates that the woodland on the property is providing habitat for Wood Thrush and Eastern Wood-pewee, and is therefore considered to be providing habitat for species of conservation concern. As described above, no portion of the woodland will be impacted by this project and sufficient habitat will be maintained in the woodland to allow continued use by these species.

As part of our assessment, we conducted observations for wildlife sign within and adjacent to the woodland and hedgerows on the property. The intention of these observations was to determine potential movement of terrestrial species between the woodland on the property and adjacent natural areas. Observations indicate that very little terrestrial wildlife movement is occurring between the woodland on the property and adjacent natural areas. Based on our observations, the woodland on this property appears to be functioning primarily as an isolated woodland and does not form part of a wildlife movement corridor.

Based on our assessments, no significant wildlife habitat functions area being provided by the agricultural portion of the property and development on this property will not impact any potential significant wildlife habitat functions being provided by the woodland.

6.5 Significant Woodlands

As discussed above in section 5.5, the woodland on and adjacent to the property satisfies the size, naturally occurring trees, older growth, proximity to water and proximity to significant wildlife habitat criteria listed in the Niagara Region Official Plan. The woodland on and adjacent to the Subject Property measures approximately 14ha in size and was documented to be providing habitat for a variety of wildlife and botanical species.

As illustrated in Figure 4, an average minimum buffer of 10m has been incorporated into the development plan to protect trees in the woodland and help prevent any potential avoidance behaviour by wildlife. Based on our assessments, development on this property will not impact the form or function of this woodland.

6.6 Watercourses

As illustrated in Figure 4, four small watercourses are located on the property. All of these watercourses are providing a flow contribution function to Beaver Dams Pond downstream of the property. To maintain this flow contribution and functions to Beaver Dams Pond, it is recommended that water from the lands be captured in the stormwater management system, treated and discharged to the main branch of this tributary downstream of the property. Provided stormwater continues to outlet to this tributary downstream of the property, the proposed project will have no affect on fish habitat in Beaver Dams Pond.

6.7 Indirect Impacts

In addition to the direct impacts discussed above, it is anticipated that future development on the property may result in several indirect impacts which may affect the woodland adjacent to the proposed development. Potential indirect impacts associated with this project include increases in ambient light and noise, visual impacts on bird species, and potential disruptions in flight patterns.

Although not yet designed, it is anticipated that streetlights and outdoor decorative lighting on residential homes will be installed, which could add to the existing ambient lighting in the area. As most of the species observed utilizing the woodland on and adjacent to the property are common in urbanized environments, it is not anticipated that an increase in ambient lighting will pose an impact on these species. To minimize any increases in ambient light to lands adjacent to the development, it is recommended that street and park lighting be directed away from the woodland. It is also recommended that shades be installed on lighting to avoid direct lighting upwards, which may adversely influence bird behaviours.

Impacts of anthropogenic noise on wildlife can include masking mating calls, increases in stress, and habitat avoidance behaviours, however, the level of impact is generally dependent on sound frequency and species sensitivity. During our observations of the property, it was noted that noise levels in and adjacent to the woodland are moderate, primarily resulting from road noise associated with traffic on as well as the adjacent commercial and industrial land uses. It is not anticipated that future development will result in significant amounts of additional noise stress or species avoidance of the woodland.

Although it is not anticipated that noise levels on the property will increase significantly as a result of everyday activities, it is anticipated that a noticeable increase in noise may result for a short period during construction activities on the property. This increase in noise has the potential to temporarily disrupt wildlife in close proximity to the development, however as the majority of wildlife species documented on the property are common in urbanized areas and can adapt to land-use changes, this increase in noise is not anticipated to have a significant impact on wildlife use of the property.

7.0 MITIGATION MEASURES

Based on our assessment, it is our expectation that the proposed development will have minimal impact on the ecological functions of the woodland on and adjacent to the property. To assist in minimizing any impacts associated with the proposed development, it is recommended that the following mitigation measures be implemented during final design and construction of the proposed development.

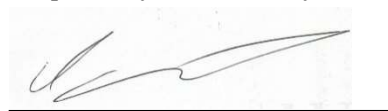
- A heavy duty silt fence should be installed at the limit of excavation and grading to delineate the work area and help minimize impacts to adjacent vegetation.
- The silt fence should be properly embedded into the ground to reduce any offsite movement of silt.
- The removal of trees and vegetation should be timed to minimize impacts on any wildlife species. It is recommended that tree removal be completed prior to April 15 or after October 1 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 during this window.
- 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 to minimize impacts on wildlife. Shades should be installed on exterior lighting to prevent light from being directed upward.
- To help avoid potential impacts associated with development adjacent to the woodland, it is recommended that the woodland buffer be planted with additional native tree and shrub material.
- Any grading or filling to be conducted on the property should be designed to maintain existing overland flow patterns to help avoid impacts to soil moisture in the adjacent woodland areas.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our assessment, creation of the proposed development blocks on this property will not result in any impacts to the Significant Woodland on the property or impact ecological or hydrological functions of the watercourses identified on-site. To assist with avoiding impacts, the mitigation measures included in this report are recommended to be implemented during detailed design in development blocks and during future site alteration and construction on the property.

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

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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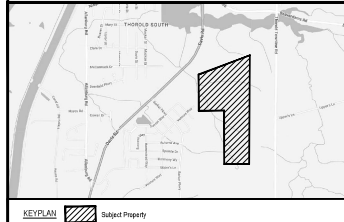
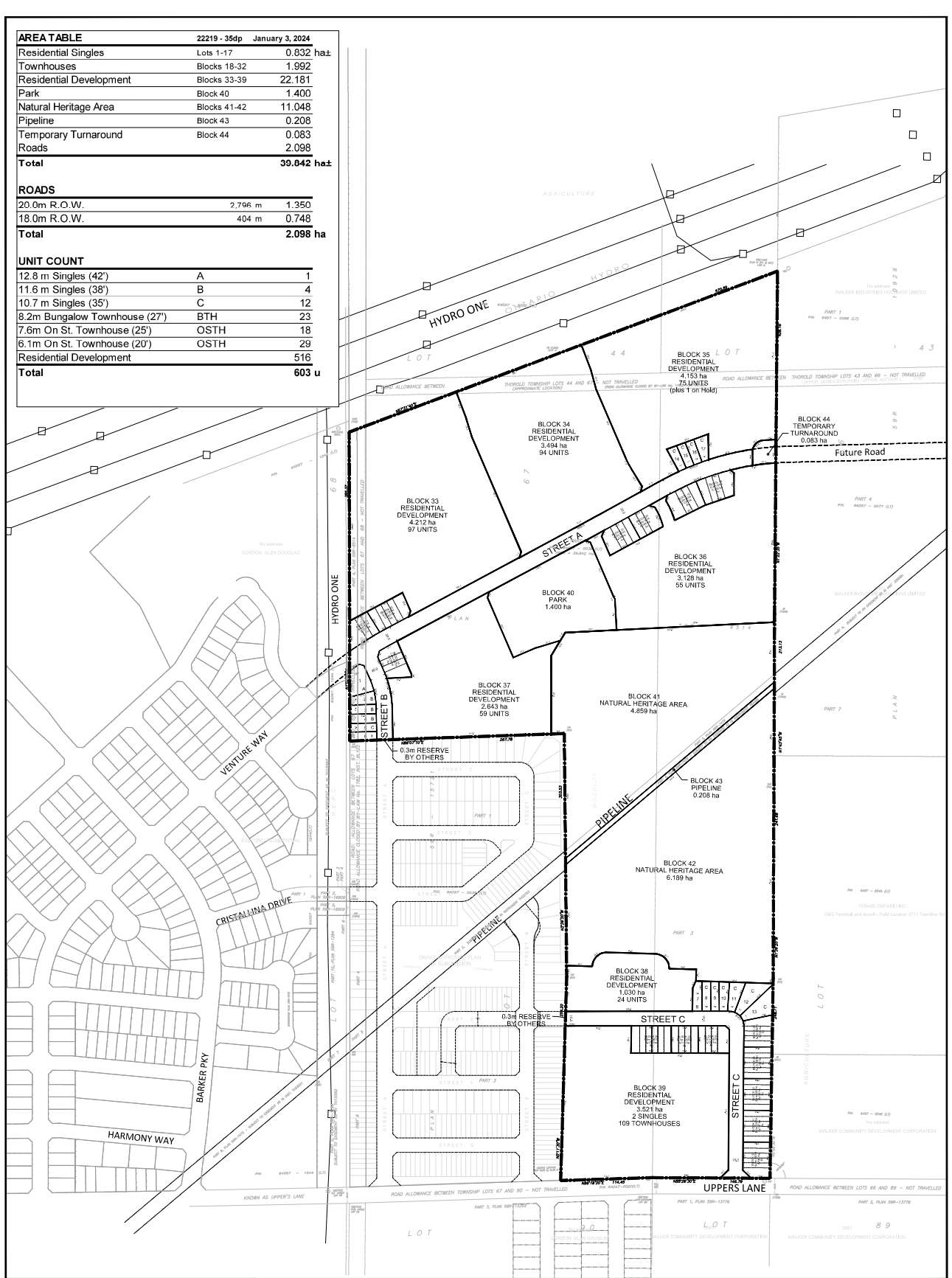
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Appendix A
Concept Site Plan

AREA TABLE		
Residential Singles	Lots 1-17	0.832 ha±
Townhouses	Blocks 18-32	1.992
Residential Development	Blocks 33-39	22.181
Park	Block 40	1.400
Natural Heritage Area	Blocks 41-42	11.048
Pipeline	Block 43	0.208
Temporary Turnaround	Block 44	0.083
Roads		2.098
Total		39.042 ha±

ROADS		
20.0m R.O.W.	2,796 m	1.350
18.0m R.O.W.	404 m	0.748
Total		2.098 ha

UNIT COUNT		
12.8 m Singles (42')	A	1
11.6 m Singles (38')	B	4
10.7 m Singles (35')	C	12
8.2m Bungalow Townhouse (27')	BTH	23
7.6m On St. Townhouse (25')	OSTH	18
6.1m On St. Townhouse (20')	OSTH	29
Residential Development		516
Total		603 u



LEGEND
 [Symbol] Subject Property

NOTES
 All dimensions are in metres.
 All area measurements are computer generated.
 All elevations refer to Geoidic Datum.

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT
 A, B, E, F, G, J, L - As Shown on Plan
 C - This represents the Applicant's entire holding of undeveloped land in the vicinity.
 D - Residential Singles, Bungalow Townhouses, On-Street Townhouses, Residential Development Blocks, Park, Natural Heritage Area, Pipeline Block, Future Road Block and Roads.
 H - Pipet water to be provided.
 I - Clay from soil.
 K - Sanitary & storm sewers to be provided.

SURVEYOR'S CERTIFICATE
 I certify that the boundaries of the lands to be subdivided and their relationship to the adjacent lands are correctly shown.

OWNER'S AUTHORIZATION
 I, the XXXXXXXXXXXXXXXXXXXXXXX being the registered owner(s) of the subject lands hereby authorize BOUSFIELD'S INC. to prepare and submit a draft plan of subdivision for approval.

DRAFT PLAN OF PROPOSED SUBDIVISION PART OF LOT 47 AND PART OF ROAD ALLOWANCE BETWEEN 47 AND 68
 (C/OCCUPYER'S CORNER OF THOROLD)
CITY OF THOROLD
 REGIONAL MUNICIPALITY OF NAGARA

BOUSFIELD'S INC.
 3 Church Street, Suite 202
 Toronto, Ontario, M5E 1A2
 P (416) 947-0744
 F (416) 947-0791

1:2000 January 3, 2024 22219-35dp

Appendix B

Vascular Plant Checklist

Plant list for the Upper's Lane Development, Thorold, ON. Conducted on July 19, 2018, October 11, 2022 and April 21, 2023.

ScientificName	CommonNames	Coeff. Cons.	Coeff. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	FODM11/C UT (Including Hedgerows)	Agricultural/ Meadow	Notes
<i>Acer rubrum</i>	Red Maple	4	0	G5			S5		x		
<i>Acer saccharum ssp. saccharum</i>	Sugar Maple	4	3	G5			S5		x		
<i>Agrimonia gryposepala</i>	Tall Agrimony	2	2	G5			S5			x	
<i>Agrostis gigantea</i>	Redtop Grass	0	0	G4G5			SE5			x	
<i>Alliaria petiolata</i>	Garlic Mustard	0	0	G?			SE5		x		
<i>Ambrosia artemisiifolia</i>	Common Ragweed	0	3	G5			S5		x		
<i>Anemone quinquefolia</i>	Wood Anemone	0	7	G5			S5		x		
<i>Anthemis cotula</i>	Stinking Chamomile	0	3	G5			SE5	IR	x		
<i>Arctium minus ssp. minus</i>	Common Burdock	0	5	G?			SE5		x		
<i>Arisaema triphyllum ssp. triphyllum</i>	Jack-in-the-pulpit	-2	5	G5			S5			x	
<i>Asclepias syriaca</i>	Common Milkweed	0	5	G5			S5		x		
<i>Aster lanceolatus ssp. lanceolatus</i>	Panicked Aster	3	-3	G5			S5		x		
<i>Aster macrophyllum</i>	Large-leaved Aster	5	5	G5			S5			x	
<i>Aster novae-angliae</i>	New England Aster	-3	2	G5			S5			x	
<i>Aster pilosus var. pilosus</i>	Hairy Aster	4	2	G5			S5		x		
<i>Athyrium filix-femina var. angustum</i>	Northern Lady Fern	0	4	G5			S5		x		
<i>Bidens sp</i>	Beggar-ticks Species								x		
<i>Bromus sp</i>	Brome Species								x		A type of non-native Chess grass
<i>Carex granularis</i>	Meadow Sedge	-4	3	G5			S5			x	
<i>Carex pensylvanica</i>	Pennsylvania Sedge	5	5	G5			S5			x	
<i>Carex spp</i>	Sedge Species									x	
<i>Carex vulpinoidea</i>	Fox Sedge	-5	3	G5			S5			x	
<i>Carpinus caroliniana</i>	Blue Beech	0	6	G5			S5		x		
<i>Carya ovata</i>	Shagbark Hickory	6	3	G5			S5		x		
<i>Centaurea jacea</i>	Brown Knapweed	0	5	G?			SE5		x		
<i>Chrysanthemum leucanthemum</i>	Ox-eye Daisy	0	5	G?			SE5		x		
<i>Cichorium intybus</i>	Chicory	5	0	G?			SE5			x	
<i>Cinna arundinacea</i>	Stout Woodreed	-3	7	G5			S4		x		
<i>Circaea lutetiana ssp. canadensis</i>	Canada Enchanter's Nightshade	3	3	G5			S5		x		
<i>Cirsium arvense</i>	Canada Thistle	0	3	G?			SE5		x		
<i>Cirsium vulgare</i>	Bull Thistle	0	4	G5			SE5		x		
<i>Cornus amomum ssp. obliqua</i>	Silky Dogwood	-4	5	G5			S5		x		
<i>Cornus foemina ssp. racemosa</i>	Grey Dogwood	2	-2	G5			S5		x		
<i>Crataegus crus-galli</i>	Cockspur Hawthorn	0	4	G5			S5		x		
<i>Crataegus mollis</i>	Downy Hawthorn	4	-2	G5			S5		x		
<i>Crataegus punctata</i>	Dotted Hawthorn	5	4	G5			S5		x	x	
<i>Dactylis glomerata</i>	Orchard Grass	3	0	G?			SE5			x	
<i>Danthonia spicata</i>	Poverty Oat Grass	5	5	G5			S5			x	
<i>Daucus carota</i>	Wild Carrot	0	5	G?			SE5		x		
<i>Dipsacus fullonum ssp. sylvestris</i>	Common Teasel	0	5	G?			SE5		x		
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	-2	5	G5			S5		x		
<i>Elymus repens</i>	Quack Grass	0	3	G5			SE5		x		
<i>Epilobium sp</i>	Willow-herb Species								x		
<i>Erigeron annuus</i>	Daisy Fleabane	0	1	G5			S5		x		
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	G5			S5		x		
<i>Festuca rubra</i>	Red Fescue		1	G5			S5		x		
<i>Fragaria virginiana ssp. virginiana</i>	Common Strawberry	2	1	G5			S5		x		
<i>Fraxinus americana</i>	White Ash	4	3	G5			S5		x		
<i>Fraxinus pennsylvanica</i>	Red Ash	3	-3	G5			S5		x		
<i>Galium sp</i>	Bedstraw Species								x		
<i>Geum laciniatum</i>	Rough Avens	4	-3	G5			S4		x		
<i>Hamamelis virginiana</i>	Witch-hazel	3	6	G5			S5		x		
<i>Hypericum perforatum</i>	Common St. John's-wort	5	0	G?			SE5		x		
<i>Impatiens capensis</i>	Spotted Touch-me-not	-3	4	G5			S5		x		
<i>Juncus tenuis</i>	Path Rush	0	0	G5			S5		x		

ScientificName	CommonNames	Coeff. Cons.	Coeff. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	FODM11/C UT (Including Hedgerows)	Agricultural/ Meadow	Notes
<i>Lactuca saligna</i>	Willow-leaved Lettuce	0	3	G?			SE1	IR	x		
<i>Lactuca sp</i>	Lettuce Species								x		
<i>Ligustrum vulgare</i>	Common Privet	1	0	G?			SE5		x		
<i>Lonicera X bella</i>	Showy Fly Honeysuckle	5	0	G?			SE2		x		
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	1	0	G?					x		
<i>Lythrum salicaria</i>	Purple Loosestrife	0	-5	G5			SE5			x	
<i>Malus pumila</i>	Common Apple	0	5	G5			SE5		x		
<i>Medicago lupulina</i>	Black Medick	0	1	G?			SE5		x		
<i>Melilotus alba</i>	White Sweet-clover	3	0	G5			SE5			x	
<i>Boehmeria cylindrica</i>	False Nettle	-5	4	G5			S5		x		
<i>Oenothera biennis complex</i>	Common Evening-primrose	0	3	G5			S5		x		
<i>Onoclea sensibilis</i>	Sensitive Fern	-3	4	G5			S5		x		
<i>Ostrya virginiana</i>	Hop Hornbeam	4	4	G5			S5		x		
<i>Parthenocissus inserta</i>	Thicket Creeper	3	3	G5			S5		x		
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	G5			S5		x		
<i>Phleum pratense</i>	Timothy	0	3	G?			SE5		x		
<i>Phragmites australis</i>	Common Reed	-4	0	G5			S5		x		
<i>Plantago major</i>	Common Plantain	0	-1	G5			SE5		x		
<i>Poa pratensis ssp. pratensis</i>	Kentucky Blue Grass	0	1	G?			S5		x		
<i>Podophyllum peltatum</i>	Mayapple	3	5	G5			S5		x		
<i>Polygonum pennsylvanicum</i>	Pink Knotweed	3	-4	G5			S5		x		
<i>Polygonum virginianum</i>	Jumpseed	0	6	G5			S4		x		
<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	4	-1	G5			S5		x		
<i>Populus grandidentata</i>	Largetooth Aspen	5	3	G5			S5		x		
<i>Potentilla recta</i>	Rough-fruited Cinquefoil	0	5	G?			SE5		x		
<i>Prunella vulgaris ssp. lanceolata</i>	Heal-all	5	5	G5			S5		x		
<i>Prunus avium</i>	Sweet Cherry	0	5	G?			SE4		x		
<i>Prunus serotina</i>	Black Cherry	3	3	G5			S5		x		
<i>Prunus virginiana ssp. virginiana</i>	Choke Cherry	1	2	G5			S5		x		
<i>Pyrus communis</i>	Common Pear	0	5	G5			SE4		x		
<i>Quercus alba</i>	White Oak	6	3	G5			S5		x		
<i>Quercus macrocarpa</i>	Bur Oak	5	1	G5			S5	U	x		
<i>Quercus palustris</i>	Pin Oak	9	-3	G5			S4		x		
<i>Rhamnus cathartica</i>	Common Buckthorn	0	3	G?			SE5		x		
<i>Rhus typhina</i>	Staghorn Sumac	5	1	G5			S5		x		
<i>Rosa multiflora</i>	Multiflora Rose	0	3	G?			SE4		x		
<i>Rubus allegheniensis</i>	Common Blackberry	2	2	G5			S5		x		
<i>Rubus idaeus ssp. melanolasius</i>	Wild Red Raspberry	0	-2	G5			S5		x		
<i>Rumex crispus</i>	Curly Dock	0	-1	G?			SE5		x		
<i>Salix cinerea</i>	Ashy Willow	0	5	G5			SE2		x		
<i>Sambucus canadensis</i>	Common Elderberry	-2	5	G5			S5		x		
<i>Solidago altissima var. altissima</i>	Tall Goldenrod	1	3	G?			S5		x		
<i>Solidago juncea</i>	Early Goldenrod	3	5	G5			S5		x		
<i>Solidago nemoralis ssp. nemoralis</i>	Gray Goldenrod	5	2	G5			S5			x	
<i>Solidago rugosa ssp. rugosa</i>	Rough Goldenrod	-1	4	G5			S5			x	
<i>Sonchus sp</i>	Sow-thistle Species									x	
<i>Taraxacum officinale</i>	Common Dandelion	3	0	G5			SE5			x	
<i>Tilia americana</i>	Basswood	4	3	G5			S5		x		
<i>Trifolium pratense</i>	Red Clover	2	0	G?			SE5			x	
<i>Typha sp</i>	Cattail Species								x		
<i>Ulmus americana</i>	White Elm	3	-2	G5?			S5		x		
<i>Veronica officinalis</i>	Common Speedwell	5	0	G5			SE5		x		
<i>Viburnum acerifolium</i>	Maple-leaved Viburnum	5	6	G5			S5		x		
<i>Vicia cracca</i>	Cow Vetch	0	5	G?			SE5		x		
<i>Vitis riparia</i>	Riverbank Grape	0	-2	G5			S5		x		

Legend

Coeff 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.

Coeff 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

I - Introduced

Appendix C
Site Photographs



Photo 1. Example of vegetation conditions in the CUM1-1/OAGM1 community on the south end of the property. Photo date October 11, 2022.



Photo 2. Example of vegetation conditions in the CUM1-1/OAGM1 community on the south end of the property. Photo date June 16, 2023.



Photo 3. Example of vegetation conditions in the FOD2 community on the property.
Photo date June 16, 2023.



Photo 4. Example of vegetation conditions in the FOD2 community on the property.
Photo date June 16, 2023.



Photo 5. Example of vegetation conditions in the FOD2 community on the property.
Photo date June 16, 2023.



Photo 6. Example of vegetation conditions in the FOD2 community on the property.
Photo date October 11, 2023.



Photo 7. Example of vegetation conditions in the CUT1 community on the property.
Photo date June 16, 2023.



Photo 8. Example of vegetation conditions in the CUT1 community on the property.
Photo date June 16, 2023.



Photo 9. Example of vegetation conditions in the CUT1 community on the property.
Photo date October 11, 2022.



Photo 10. Example of vegetation conditions in one of the FODM11 hedgerows on est side of the property. Photo date October 11, 2022.



Photo 11. Example of conditions in Watercourse 1 (WC1) on Subject Property. Photo from approximate west-center of property facing west. Photo date February 6, 2023.



Photo 12. Example of conditions in Watercourse 1 (WC1) on Subject Property. Photo from approximate center of property facing west. Photo date June 16, 2023.



Photo 13. Example of conditions in Watercourse 2 (WC2) on Subject Property. Photo from approximate center of property facing east. Photo date October 11, 2022.



Photo 14. Example of conditions in Watercourse 2 (WC2) on Subject Property. Photo from near west property boundary facing east. Photo date February 6, 2023.



Photo 15. Example of conditions in Watercourse 2 (WC2) on Subject Property. Photo from approximate center of property facing west. Photo date June 16, 2023.



Photo 16. Example of conditions in Watercourse 3 (WC3) on Subject Property. Photo from approximate center of property facing west. Photo date June 16, 2023.



Photo 17. Example of conditions in Watercourse 4 (WC4) west of Subject Property. Photo from June 16, 2023.



Photo 18. Example of conditions in the watercourse channel upstream of Highway 58. Photo from April 5, 2023.

Appendix D

NHIC Data

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1033007	NATURAL AREA	Welland Canal South Turn Basin Wetland Complex					17PH4773	
1033007	SPECIES	Timber Rattlesnake	Crotalus horridus		EXP	EXP	17PH4773	
1033007	SPECIES	Northern Bobwhite	Colinus virginianus		END	END	17PH4773	
1033007	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17PH4773	
1033006	SPECIES	Timber Rattlesnake	Crotalus horridus		EXP	EXP	17PH4772	
1033006	SPECIES	Northern Bobwhite	Colinus virginianus		END	END	17PH4772	
1033017	NATURAL AREA	Beaverdams Creek Wetland Complex					17PH4873	
1033017	SPECIES	Timber Rattlesnake	Crotalus horridus		EXP	EXP	17PH4873	
1033017	SPECIES	Northern Bobwhite	Colinus virginianus		END	END	17PH4873	
1033017	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17PH4873	
1033016	NATURAL AREA	Beaverdams Creek Wetland Complex					17PH4872	
1033016	SPECIES	Timber Rattlesnake	Crotalus horridus		EXP	EXP	17PH4872	
1033016	SPECIES	Northern Bobwhite	Colinus virginianus		END	END	17PH4872	

Appendix E

Species at Risk Screening

THOROLD

Species At Risk Designations

ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

BIRDS		ESA Protection	Key Habitats Used By Species	Subject Property
Acadian Flycatcher (<i>Empidonax vireescens</i>)	Known to Occur	Species and General Habitat Protection	generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines	Potential habitat present in woodland on Property. Not detected during breeding bird surveys.
Bank Swallow (<i>Riparia riparia</i>)	Suspected 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.	Typical habitat not present on Property. Not detected during breeding bird surveys.
Barn Owl (<i>Tyto alba</i>)	Suspected to Occur	Species Protection and Habitat Regulation	generally prefer low-elevation, open country; often associated with agricultural lands, especially pasture. Nests are located in buildings, hollow trees and cavities in cliffs.	Suitable habitat not present on property. Not detected during breeding bird surveys.
Barn Swallow (<i>Hirundo rustica</i>)	known to Occur	Species and General Habitat Protection	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Potential nesting habitat not present on property. Observed foraging over property during breeding bird surveys.
Bobolink (<i>Dolichonyx oryzivorus</i>)	Suspected to Occur	Species and General Habitat Protection	generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Suitable habitat not present on property. Not detected during breeding bird surveys.
Chimney Swift (<i>Chaetura pelagica</i>)	Suspected 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	Typical habitat not present on Property. Not detected during breeding bird surveys.
Common Nighthawk (<i>Chordeiles minor</i>)	Suspected to Occur	N/A	generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops)	Suitable habitat not present on property.
Eastern Meadowlark (<i>Sturnella Magna</i>)	Known to Occur	Species and General Habitat Protection	generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Suitable habitat not present on property. Not detected during breeding bird surveys.
Eastern Whip-poor-will (<i>Caprimulgus vociferus</i>)	Known to Occur	Species Protection 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.	Potential breeding habitat not present on property.
Eastern Wood-Pewee (<i>Contopus virens</i>)	Known to Occur	N/A	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges	Typical breeding habitat present on property. Detected in woodland on property 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.	Typical breeding habitat not present on property. Not detected during breeding bird surveys.
Least Bittern (<i>Ixobrychus exilis</i>)	Known to Occur	Species and General Habitat Protection	generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Potential breeding habitat not present on property. Not detected during breeding bird surveys.
Peregrine Falcon (<i>Falco peregrinus</i>)	Known to Occur	N/A	generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas.	Typical breeding habitat not present on property. Not detected during breeding bird surveys.
Red-Headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Known to Occur	N/A	generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Potential breeding habitat present on property. Not detected during breeding bird surveys.
Wood Thrush (<i>Hylocichla mustelina</i>)	Known to Occur	N/A	Nests mainly in second growth and mature deciduous and mixed forests, with saplings and well developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments	Typical breeding habitat present on property. Detected in woodland on property 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	Potential breeding habitat not present on property. Not detected during breeding bird surveys.
FISH		ESA Protection	Key Habitats Used By Species	Subject Property
INSECTS		ESA Protection	Key Habitats Used By Species	Subject Property

Monarch Butterfly (<i>Danaus plexippus</i>)	Known to Occur	N/A	exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces	Isolated stems of Milkweed observed in hedgerows on property during botanical inventories. No use by Monarch observed.
Rusty-patched Bumble Bee (<i>Bombus affinis</i>)	Formerly Occurred and May Still Occur	Species and General Habitat Protection	generally inhabits a range of diverse habitats including mixed farmland, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows	Suitable habitat not present on property.
West Virginia White (<i>Pieris virginienis</i>)	Known to Occur	N/A	generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (<i>Cardamine diphylla</i>), which is a small, spring-blooming plant of the forest floor.	Suitable habitat not present on property.

MAMMALS		ESA Protection	Key Habitats Used By Species	Subject Property
Eastern Small-footed Myotis	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: caves and mines that remain above 0 degrees Celcius. Maternal Roosts: primarily under loose rocks on exposed rock and outcrops, crevices and cliffs, and occasionally buildings, under bridges and highway overpasses and under tree bark	Potential roosting or maternal habitat not present on property.
Little Brown Myotis (<i>Myotis lucifugus</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	Potential roosting and maternal habitat present in woodland on property. No impact to potential habitat will occur as a result of the proposed development.
Northern Myotis (<i>Myotis septentrionalis</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	Potential roosting and maternal habitat present in woodland on property. No impact to potential habitat will occur as a result of the proposed development.
Tri-colored Bat (<i>Perimyotis subflavus</i>)	Suspected to Occur	Species and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures	Potential roosting and maternal habitat present in woodland on property. No impact to potential habitat will occur as a result of the proposed development.

MOLLUSCS		ESA Protection	Key Habitats Used By Species	Subject Property
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MOSESSES		ESA Protection	Key Habitats Used By Species	Subject Property
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PLANTS		ESA Protection	Key Habitats Used By Species	Subject Property
American Chestnut (<i>Castanea dentata</i>)	Known to Occur	Species and General Habitat Protection	found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Typical habitat not present on property. Species not found during botanical inventories.
Broad Beech Fern (<i>Phegopteris hexagonoptera</i>)	Known to Occur	N/A	generally inhabits shady areas of beech and maple forests where the soil is moist or wet	Suitable habitat not present on property. Species not found 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	Suitable habitat present on property. Species not found during botanical inventories.
Cucumber Tree (<i>Magnolia acuminata</i>)	Suspected to Occur	Species and General Habitat Protection	generally grows in rich, well-drained soils in deciduous forest habitats	Suitable habitat not present on property. Species not found 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	Suitable habitat present on property. Species not found 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	Suitable habitat present on property. Species not found 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	Suitable habitat not present on property. Species not found 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.	Suitable habitat present on property. Species not found during botanical inventories.

REPTILES		ESA Protection	Key Habitats Used By Species	Subject Property
Common Five-lined Skink (<i>Plestiodon fasciatus</i>)	Known to Occur	Species Protection and Habitat Regulation	generally occur near dunes, fields, and deciduous forests. This species is generally associated with relatively open environments.	Typical habitat not present on property.
Eastern Hog-nosed Snake (<i>Heterodon platirhinos</i>)	Historically Known to Occur	Species and General Habitat Protection	generally prefer habitats with sandy, well-drained soil and open vegetative cover, such as open woods, brushland, fields, forest edges and disturbed sites. The species is often found near water.	Typical habitat not present on property.

<p>Eastern Ribbonsnake (<i>Thamnophis sauritus</i>)</p>	<p>Suspected to Occur</p>	<p>N/A</p>	<p>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.</p>	<p>Typical habitat not present on property.</p>
<p>Snapping Turtle (<i>Chelydra serpentina</i>)</p>	<p>Known to Occur</p>	<p>N/A</p>	<p>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.</p>	<p>Potential habitat not present on property.</p>

Appendix F

MNRF Correspondence

July 31, 2018

Ian Barrett
Colville Consulting Inc.
404 Queenston Street
St Catharines, ON L2P 2Y2
ian@colvilleconsultinginc.ca

**RE: Uppers Lane Estates
Thorold**

Dear Mr. Ian Barrett,

The Ministry of Natural Resources and Forestry (MNRF), Guelph District – Vineland Field Office, has reviewed the natural heritage information available for the above-noted property and surrounding area (the “study area”), and offers the following comments:

FISHERIES

Restricted activity timing windows are applied to protect fish from impacts of undertakings in and around water during critical life cycle stages. The recommended timing restrictions for the unnamed tributary of the Welland Canal are March 1st to July 1st (Note: dates represent when work should be avoided).

The MNRF does not have any detailed fisheries information for this section of unnamed tributary of the Welland Canal.

SPECIES AT RISK

There are records in the area for the following species at risk (SAR) and rare species:

- Barn Swallow (*Hirundo rustica*) (Threatened)
- Bank Swallow (*Riparia riparia*) (Threatened)
- Round-leaved Greenbrier (*Smilax rotundifolia*) (Threatened)
- Snapping Turtle (*Chelydra serpentina*) (Special Concern)
- Wood Thrush (*Hylocichla mustelina*) (Special Concern)
- Black Gum (*Nyssa sylvatica*) (S3)

Threatened and Endangered Species receive both individual species and habitat protection under the *Endangered Species Act, 2007* (ESA). SAR habitat prescribed under regulation is listed in Ont. Reg. 242/08 (<https://www.ontario.ca/laws/regulation/080242>).

Please be advised that because the province has not been surveyed comprehensively for the presence of listed species, the absence of a record does not necessarily indicate the absence of SAR from an area. To determine the presence of SAR for a given study area, the District's recommended approach is as follows:

I. Habitat Inventory

The Ministry recommends undertaking a comprehensive botanical inventory of the entire area that may be subject to direct and indirect impacts from the proposed activity. The vegetation communities should be classified as per the "Ecological Land Classification (ELC) for Southern Ontario" system, to either the "Ecosite" or "Vegetation Type" level. For aquatic habitats in the study area, we recommend that you collect data on the physical characteristics of the waterbodies and inventory the riparian zone vegetation, so that these habitats can be classified as per the Aquatic Ecosites described in the ELC manual.

II. Potential SAR within the Study Area

A list of SAR that have the potential to occur in the area can be produced by cross-referencing the ecosites described during the habitat inventory with the habitat descriptions of SAR known to occur within the planning area. The list of SAR known to occur in the City of Thorold is attached for your reference. The species-specific COSEWIC status reports (<https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html>) are a good source of information on habitat needs and will be helpful in determining the suitability of the study areas ecosites for a given species.

Please note that the Species at Risk in Ontario (SARO) List is a living document that is periodically amended as a result of species assessment and re-assessments conducted by the Committee on the Status of Species at Risk in Ontario (COSSARO). The SARO List can be accessed on the following webpage: <https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>.

COSSARO also maintains a list of species to be assessed in the future. It is recommended that you take COSSARO's list of anticipated assessments into consideration, especially when the proposed start date of an activity is more than 6 months away, or the project will be undertaken over a period greater than 6 months. This list can be viewed at: <https://www.ontario.ca/page/how-comment-protecting-species-risk>.

III. SAR Surveys

The Ministry recommends that each potential SAR identified under Step II is surveyed for, regardless of whether or not the species has been previously recorded in the area. The survey report should describe how each SAR was surveyed for, and provide a rationale for why certain species were not afforded a survey (e.g., habitat within the study area is not suitable for a specific SAR). Please note that some targeted surveys may require provincial authorizations (e.g., ESA permit or Wildlife Scientific Collector's Permit).

ADDITIONAL INFORMATION

Natural heritage features (e.g. wetlands, ANSIs) can be viewed for a given study area through the MNR's "Make a Map" web application: <https://www.ontario.ca/page/make-natural-heritage-area-map>. Digital data layers can be obtained through the Land Information Ontario (LIO) geowarehouse <https://www.ontario.ca/page/land-information-ontario>.

Additionally, the MNR recommends contacting the municipality and the conservation authority to determine if they have any additional information or records of interest for the study area.

Please be advised that it is your responsibility to comply with all other relevant provincial or federal legislation, municipal by-laws, other MNRF approvals or required approvals from other agencies. If your investigations reveal the presence of Threatened or Endangered species, please contact the MNRF at esa.guelph@ontario.ca for further direction.

I trust that the above information is of assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Reimer". The signature is fluid and cursive, with a long horizontal stroke at the end.

Elizabeth Reimer
A/Management Biologist

Appendix G

Significant Wildlife Habitat Table

Assessment of potential Significant Wildlife Habitat on the Subject Property.

Significant Wildlife Habitat (SWH) Type	Known or Candidate SWH present/absent	Rationale
SEASONAL CONCENTRATION AREAS OF ANIMALS		
Waterfowl Stopover and Staging Areas	Absent	Suitable habitat not present on Subject Property
Shorebird Migratory Stopover Area	Absent	Suitable habitat not present on Subject Property
Raptor Wintering Area	Absent	Suitable habitat not present on Subject Property
Bat Hibernacula	Absent	Suitable overwintering habitat not present on Subject Property
Bat Maternity Colonies	Likely Present	Potential habitat trees present in woodland on Subject Property. Development will not impact trees in the woodland.
Turtle Wintering Areas	Absent	Suitable overwintering habitat not present on Subject Property
Reptile Hibernaculum	Absent	Potential habitat present on Subject Property
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Potential habitat not present on Subject Property
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Colonial nesting birds not present on Subject Property
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Colonial nesting birds not present on Subject Property
Migratory Butterfly Stopover Areas	Absent	Significant potential habitat not present on Subject Property
Landbird Migratory Stopover Areas	Absent	Significant potential habitat not present on Subject Property
Deer Winter Congregation Areas	Absent	No evidence of deer congregations on the property during winter visits.
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on Subject Property
Sand Barren	Absent	Habitat type not present on Subject Property
Alvar	Absent	Habitat type not present on Subject Property

Old Growth Forest	Absent	Woodland on property has characteristics of an older woodland, however tree harvesting has occurred in the past.
Savannah	Absent	Habitat type not present on Subject Property
Tallgrass Prairie	Absent	Habitat type not present on Subject Property
Other Rare Vegetation Communities	Absent	No rare vegetation communities present on Subject Property.
SPECIALIZED HABITATS OF WILDLIFE CONSIDERED SWH		
Waterfowl Nesting Area	Absent	Suitable habitat not present on Subject Property
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Absent	Suitable habitat not present on Subject Property
Woodland Raptor Nesting Habitat	Absent	Suitable habitat not present on Subject Property
Turtle Nesting Areas	Absent	Suitable habitat not present on Subject Property
Seeps and Springs	Absent	Suitable habitat not present on Subject Property
Amphibian Breeding Habitat (Woodland)	Absent	Suitable habitat not present on Subject Property
Amphibian Breeding Habitat (Wetlands)	Absent	Suitable habitat not present on Subject Property
Woodland Area-Sensitive Bird Breeding Habitat	Absent	Interior habitat not present in woodland. No area sensitive species documented on Subject Property.
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH		
Marsh Breeding Bird Habitat	Absent	Suitable habitat not present on Subject Property
Open Country Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
Shrub/Early Successional Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
Terrestrial Crayfish	Absent	Suitable habitat not present on Subject Property
Special Concern and Rare Wildlife Species	Present	Woodland on property providing habitat for Eastern Wood-pewee and Wood Thrush. Proposed development will not impact habitat of these species.
ANIMAL MOVEMENT CORRIDORS		
Amphibian Movement Corridors	Absent	Suitable habitat not present on Subject Property
Bat Migratory Stopover Area	Absent	Suitable habitat not present on Subject Property

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