ENVIRONMENTAL IMPACT STUDY
11 MAIN STREET, MORRISTON, TOWNSHIP OF PUSLINCH

Prepared for:

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File No.: C22059
Date: August 2024

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by WDD International to prepare an Environmental Impact Study (EIS) for a development proposed on the property located at 11 Main Street, in the Village of Morriston, Wellington County, hereafter referred to as the Subject Property. This EIS has been prepared to delineate the extent of natural heritage features on the Subject Property and assess the potential impacts of future development on natural heritage features on and adjacent to the Subject Property. The conclusions and recommendations of this report are intended to assist with informing proposed zone boundaries to be established on the Subject Lands.

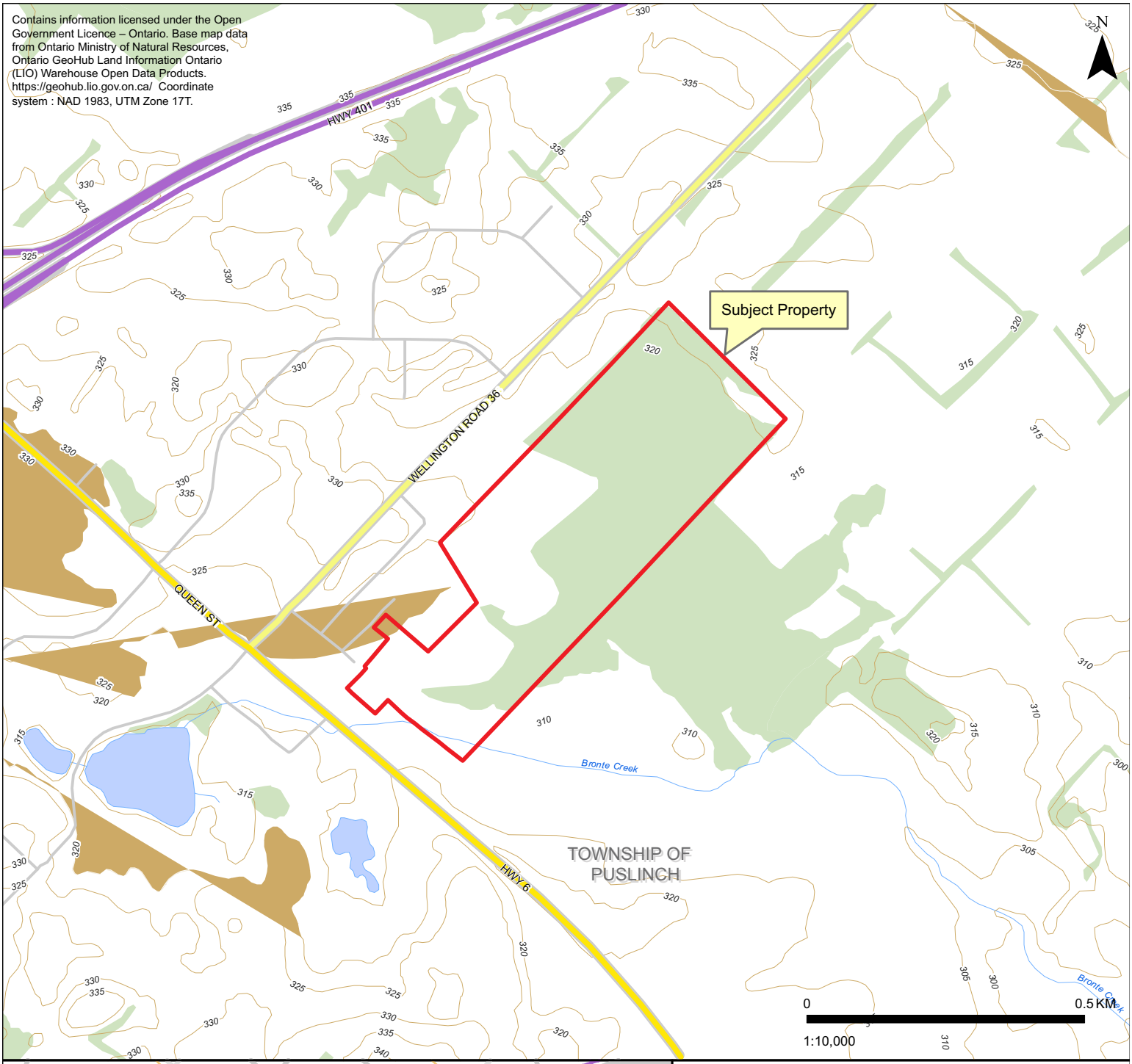
This study has been requested by the County of Wellington and the Halton Region Conservation Authority (HRCA) to assess the extent of potential natural heritage features on and adjacent to the Subject Property, as well as assess potential impacts associated with a proposed development. This EIS has been prepared to assess potential impacts the proposed development may have on natural heritage features located on and adjacent to the Subject Property and provide mitigation measures to avoid or minimize any potential impacts. A summary of our assessment is included below.

1.1 Description of Subject Property

The Subject Property measures approximately 23.1 ha (57.1 acres) in size and is generally located southeast of the intersection of Highway 6 and Badenoch Street in Morriston, Township of Puslinch (see Figure 1). There are no existing buildings or structures on the Subject Property and current land use consists of a mix of cultivated lands and natural heritage features. There is a significant amount of topographical variability throughout the Subject Property, with undulating topography resulting in upwards of 10 metres or more in elevation change across the property. Surface drainage on the west side of the property is generally directed towards a tributary of Bronte Creek, which runs along the western portion of the property. The remainder of surface drainage on the property is directed to the southeast towards minor drainages within the woodland feature.

Based on our review of background mapping, it is our understanding that mapped natural heritage features on the property consist of non-provincially significant and unevaluated wetlands, significant woodlands, and watercourses. Wetland features and hazard lands associated with the watercourse are designated "Core Greenlands" in the Wellington County Official Plan Schedule A7-2. The significant woodland on the Subject Property has been designated as "Greenlands" in the County of Wellington Official Plan due to size (over 1 hectare).

Two watercourses on the Subject Property have been identified as lands regulated by HRCA. One regulated watercourse is a tributary of Bronte Creek that bisects the southwestern corner of the Subject Property, and the other is an unnamed watercourse in the woodland feature on the central portion of the property. The extent of mapped natural heritage features on and adjacent to the Subject Property are illustrated in Figure 2.



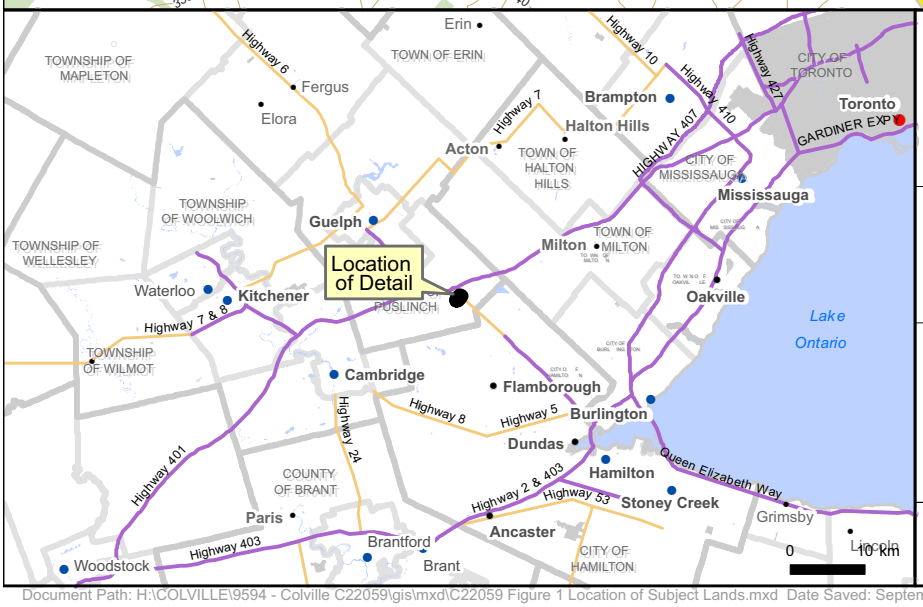


Figure 1
Location of Subject Property

Environmental Impact Study for
11 Main Street, Morriston

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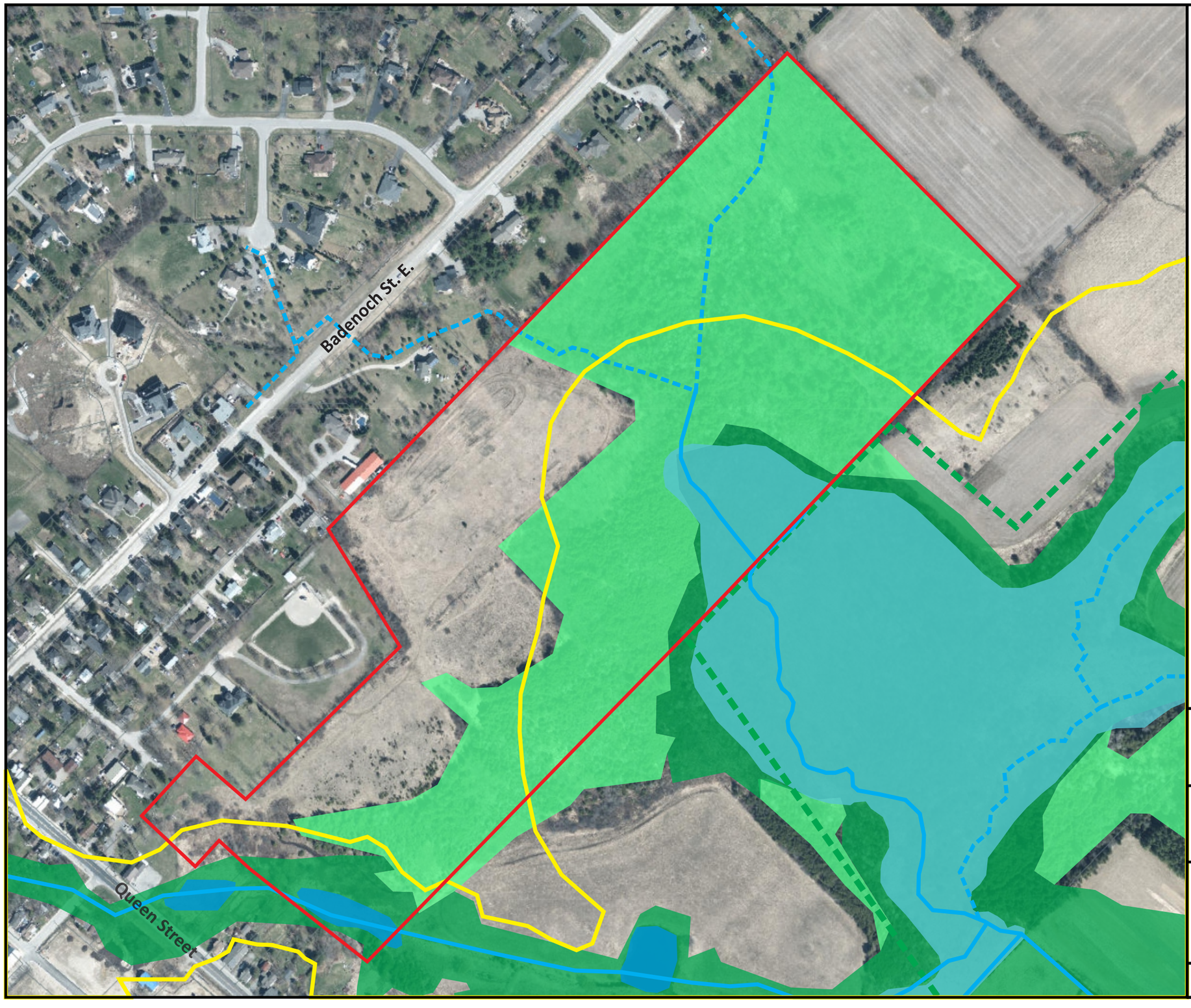

Legend

Subject Property

Greenbelt Mapping

Natural Heritage System

MNRF Mapping

Non-Provincially Significant Wetland

Unevaluated Wetland

County of Wellington Official Plan Schedule A7-2

Core Greenlands

Greenlands

Halton Region Conservation Authority Mapping

Conservation Halton Regulated Lands

Regulated Watercourses

Non-Regulated Watercourses

Figure 2
Extent of Natural Heritage Features on the Subject Property

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As mapping indicates that natural heritage features are located on and adjacent to the Subject Property, any development within or adjacent to these features will be subject to environmental policies of wellington County, as well as policies of the HRCA. These policies generally require that proposed development demonstrate no negative impacts on the natural heritage features or their ecological functions.

1.2 Description of Proposed Development

It is our understanding that the proposed development includes 21 single detached lots along the northwestern portion of the Subject Property. All proposed residential lots are approximately 0.20ha in size and will front onto new streets to be constructed as part of the development. Development adjacent to the Subject Property will also include the extension of an existing street (Ochs Street) along the northern boundary of the Subject Property to provide access to the property.

To facilitate this proposed development, we understand that a Plan of Subdivision is required by the County of Wellington, and zoning By-Law amendments are required by the Township of Puslinch. The approximate extent of the proposed development is illustrated in Appendix A.

2.0 ENVIRONMENTAL POLICY

2.1 Provincial Policy Statement

Land Use Policy and development in the province of Ontario is directed by the PPS, which was issued under the authority of Section 3 of the Planning Act and came into effect on May 1, 2020, replacing the PPS issued April 30, 2014. It 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 intent of the PPS is 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 ground water 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.

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 is not permitted in or adjacent to:

- significant woodlands and valleylands south and east of the Canadian Shield;
- significant wildlife habitat;

- significant fish habitat; and
- significant areas of natural and scientific interest.

Furthermore, development and site alteration shall not be 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 on their ecological functions.

2.2 Greenbelt Plan

The Greenbelt Plan was first introduced in 2005 to help shape the future of the Greater Golden Horseshoe. It was most recently updated in 2017 and continues to build on the PPS to establish land use planning framework for environmental and agricultural protection. The Subject Property is designated as Settlement Area within the Greenbelt Plan and mapped as "Towns/Villages" in Schedule 1: Greenbelt Area of the Greenbelt Plan.

The intent of this designation as it pertains to development is outlined in Section 3.4.1 and states the following:

> "Towns/Villages have the largest concentrations of population, employment and development within the Protected Countryside and tend to be the central settlement area(s) for their respective municipalities. Although most have full municipal water and sewer services, some only have a municipal water service and/or a combination of private and municipal water services. Towns/Villages are the focus of development and related economic and social activity."

The Greenbelt Plan also includes a Natural Heritage System. Section 3.2.1 defines the system as "…a continuous and permanent land base necessary to support human and ecological health in the Greenbelt and beyond". No portion of the Subject Property is mapped within the Natural Heritage System.

2.3 County of Wellington Official Plan

The County of Wellington Official Plan (2022) is intended to give direction to the physical development of the County, its local municipalities and to the long-term protection of County resources. To help achieve this goal and protect the natural heritage system within the County, a Greenlands System was developed. The Greenland System is illustrated in Schedule A of the Official Plan. Schedule A7-2 shows the community of Morriston and the Subject Property which are designated as a mix of Residential, Core Greenlands, and Greenlands.

The intent of the Greenland System as defined in Section 5.1 of the Official Plan is "to include those features and areas which are part of Wellington's natural heritage or areas in which natural or human-made conditions may pose a threat to public safety". These areas include, but are not limited to wetlands, environmentally sensitive areas, streams, waterbodies, woodlands, fish and wildlife habitat, and threatened and endangered species. The Greenland is divided into two broad categories, Core Greenlands and Greenlands.

Section 5.4 of the Official Plan outlines that policies surround Core Greenlands and the areas within them, which include areas that have a greater sensitivity or significance. These areas include provincially

significant wetlands, all other wetlands, habitat of endangered or threatened species and fish habitat, and hazardous lands.

Section 5.5 discusses the other component of the Greenland System, Greenlands. Lands designated as Greenlands include the following as:

> "Other significant natural heritage features including habitat, areas of natural and scientific interest, streams and valleylands, woodlands, environmentally sensitive areas, ponds, lakes and reservoirs and natural links are also intended to be afforded protection from development or site alteration which would have negative impacts
>
> These areas are often found within Core Greenlands. Where they are outside Core Greenlands they are identified as Greenlands.".

Policy related to development within and adjacent to the Greenland System is discussed in Section 5.6 Impacts associated with development and when it is permitted in the Core Greenlands and Greenlands are elaborated on further in Section 5.6.2 which states:

> "Where development is proposed in the Greenland system or on adjacent lands, the County or local municipality shall require the developer to:
>
> a) identify the nature of the features potentially impacted by the development;
>
> b) prepare, where required, an environmental impact assessment to ensure that the requirements of this Plan will be met, and consider enhancement of the natural area where appropriate and reasonable.
>
> c) address any other relevant requirements set out in Section 4.6.3 Environmental Impact Assessment.
>
> No development will be approved unless the County is satisfied that the Greenland and Environmental Impact Assessment policies are met."

As per Section 5.6.2.c above, Section 4.6.3 is defined the following:

> "Environmental impact assessments prepared by a qualified person may be required to evaluate the impacts a proposed development may have on the natural environment and the means by which negative impacts may be reduced or eliminated..."

This Environmental Impact Assessment has been prepared to satisfy the requirements of Section 4.6.3.

2.4 Halton Region Conservation Authority

The Halton Region Conservation Authority (HRCA) is responsible for the administration of Ontario Regulation 41/24, which provides the HRCA 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 works proposed within regulated areas will have no adverse impact on flooding, erosion, dynamic beaches or unstable soil or bedrock.

In order to administer Ontario Regulation 41/24, the HRCA has created a document titled *Conservation Halton Policies and Guidelines for the Administration of Pary VI of the Conservation Authorities Act and Ontario*

Regulation 41/06 and Land Use Planning Policy Document (HRCA, 2024). The purpose of the document is to provide guidance for development applications that are located within and adjacent to regulated areas.

Regulated features on the Subject Property include a tributary of Bronte Creek and the associated floodplain, an unnamed watercourse, non-provincially significant wetlands, and unevaluated wetlands as identified by the Ministry of Natural Resources and Forestry (MNRF). The non-provincially significant wetland on the property is the northwest portion of the East Morriston Swamp Wetland Complex that extends southeast of the Subject Property. The unevaluated wetland on the Subject Property is associated with the riparian area along the north side of the tributary of Bronte Creek and is located on the southern edge of the Subject Property

HRCA policies related to the management of watercourses are contained in Sections 2.14 to 2.19 and policies related to wetlands are included in Sections 2.32, 2.33 and 3.4. These policies are generally intended to protect and maintain the hydrological function of these features.

3.0 STUDY APPROACH

3.1 Background Review

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

- County of Wellington Official Plan (2022);
- Background data and mapping available from the Ministry of Natural Resources and Forestry (MNRF) and Conservation Halton;
- Conservation Halton Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document (HRCA, 2020);
- A search for information on rare, Threatened and Endangered species available through the Natural Heritage Information Centre (NHIC) (Square(s) - 17TNJ7111, 17NJ7211, 17NJ7110, 17NJ7210);
- Available Atlas Data including
    - Ontario Reptile and Amphibian Atlas, 2009-2019 (Ontario Nature 2023);
    - Ontario Breeding Bird Atlas (OBBN) (Square - 17TNJ71);
    - Ontario Butterfly Atlas (MacNaughton et al, 2023) (Square – 17NJ71),
    - Ontario Mammal Atlas (Dobbyn 1994)
- Aquatic Species at Risk Maps (Fisheries and Oceans Canada); and
- Natural Heritage Evaluation, 97 Queen Street, Morriston, Wellington County (Beacon Environmental Limited (2023).

3.2 Field Inventories

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

- Three season botanical inventory of the property, with the inventories conducted in summer and fall of 2022 and spring of 2023;
- Ecological Land Classification description of vegetation communities on the Subject Property;
- Breeding bird surveys on and adjacent to the Subject Property;
- An assessment of the watercourse feature on the southwest side of the property;
- An assessment of potential bat maternal roost trees and installation of acoustic monitors;
- Hand searches for reptiles that may be using the property;
- Amphibian call surveys; and
- Document incidental wildlife observations during site visits, including any species of insects that may be considered locally rare or species at risk.

For the purposes of field assessments, the study area for this assessment includes the entirely to the Subject lands and adjacent lands are considered the detectable area or surveyable lands adjacent to the Subject Property.

4.0 STUDY FINDINGS

4.1 Botanical Inventories and Vegetation Mapping

Botanical inventories of the Subject Property were conducted on August 10, September 24 and 26, 2022 and June 10, 2023. Vegetation communities (ELC Units – Lee et al. 1998) were mapped and described (Figure 3). A vascular plant checklist is provided in Appendix B and ELC data cards are provided in Appendix C. Species status was assessed for Ontario (Oldham and Brinker, 2009) and Wellington County (Frank and Anderson 2009. Site photos illustrating the vegetation conditions on the Subject Property are included in Appendix D.

4.1.1 Botanical Inventory

Two hundred (200) plant species were documented during our inventories (Appendix B). Of the 200 species observed, one species is listed as Endangered (Butternut), one is listed as provincially rare (Honey Locust), and three are ranked as locally rare (Butterfly Weed, Heart-leaved Aster, and Rough-leaved Goldenrod).

One triple stemmed Butternut tree was documented adjacent to the western edge of the property during inventories. An assessment of this tree was conducted twice during the 2023 leaf-on season and it was determined that this tree exhibited external characteristics typical of Butternut hybrids. Because of the location of this tree off-property and visible hybrid characteristics, no further genetic assessment was conducted to determine purity.

One provincially rare plant, Honey Locust (S2?), was documented on the Subject Property. A single Honey Locust sapling is located within the hedgerow, along the edge of the baseball diamond. Based on site characteristics, it is highly probable that this specimen was either planted or escaped and represents an introduced individual.

Three locally rare species (Butterfly Weed, Heart-leaved Aster, and Rough-leaved Goldenrod) were observed. The Butterfly Weed was observed near the treed hedge-row at the foot of Ochs Road and was

likely introduced or escaped from a residential garden. Heart-leaved Aster was found in low numbers in the successional woodland adjacent to the eastern edge of the old field meadow. The Rough-leaved Goldenrod was observed in rare instances around open seepage areas within the White Cedar coniferous swamp. The locations of these species are illustrated in Figure 3.

4.1.2 Vegetation Communities

A total of 14 vegetation communities were identified on and adjacent to the Subject Property. These vegetation communities were classified and mapped according to the Ecological Land Classification System for Southern Ontario (Lee et al. 1998). The Subject Property generally occurs on rolling uplands (likely drumlins), composed of silt or silty very fine sand. In places, the soils are stoney and limestone boulders or cobbles are mixed with the tills. In the intervening lowlands, large wetland areas support seepage swamps with organic deposits that often exceed 40cm in depth.

Descriptions of the vegetation communities identified on and adjacent the Subject Property as provided below.

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

A large portion of the Subject Property supports an old field meadow. This former agricultural field has been left fallow for some time and now supports an abundance (60-100% vegetation cover) of Smooth Brome, Orchard Grass, Timothy Grass, Kentucky Bluegrass, Quack Grass, Tall Goldenrod, New England Aster, Heath Aster, Spotted Knapweed, Wild Carrot, Canada Thistle, and White Sweet Clover. To facilitate archaeological work on the site, the entirety of the CUM1-1 community was tilled in October 2022, after botanical inventories were conducted.

On the driest knolls, Canada Bluegrass, Gray Goldenrod, Spotted Knapweed, Wild Basil, Common Strawberry, Hawkweed and Sedge species dominate the lower ground layer (0.5 to less than 0.2m in height) forming a sparse (between 25 to 60%) cover. A slightly taller (0.5 to 1m in height) layer of Smooth Brome, Heath Aster, New England Aster, Tall Goldenrod, Wild Carrot and Orchard Grass forms greater than 60% cover.

White Sweet Clover dominates the sparse 1 to 2m height layer, along with some vines of Riverbank Grape and low shrubs of Common Lilac or saplings of Manitoba Maple, White Cedar and Staghorn Sumac.

Sumac Cultural Thicket Type (CUT1-1)

The southwestern edge of the old field meadow supports a cultural thicket which slopes down to a thicket swamp below. Orchard Grass, Tall Goldenrod, Reed Canarygrass and Panicled Aster cover 60 to 100% of the ground layer. Staghorn Sumac forms a 25 to 60% cover of tall shrubs, 1 to 2m + in height. An abundance of Riverbank Grape, Black Walnut saplings and Chokecherry shrubs also occur in this layer.

An abundance of young to mature Black Walnut trees occurs in the sparse 2 to 10m+ height layer, almost forming a Black Walnut Savanna, along with some Red\Green Ash, Common Apple and Staghorn Sumac trees, providing between 10 to 25% cover.

Legend

Subject Property

Watercourse

ELC Community

CUM1-1	Dry-Moist Old Field Meadow Type
CUT1-1	Sumac Cultural Thicket Type
THDM3	Dry-Fresh Deciduous Hedge-row Ecosite
FODM11	Naturalize Deciduous Hedge-row Ecosite
FOCM5	Naturalized Coniferous Hedge-row Ecosite
WODM5	Fresh-Moist Deciduous Woodland Ecosite
FOMM2-3	Dry-Fresh White Pine - Hardwood Mixed Forest Type
FOC4-1	Fresh-Moist White Cedar Coniferous Forest Type
MAM3-9	Forb Organic Meadow Marsh Type
FOC2-2	Dry-Fresh White Cedar Coniferous Forest Type
SWC3-1	White Cedar Organic Coniferous Swamp Type
SWT2-5	Red-osier Mineral Thicket Swamp Type
MAM2-2	Reed-canary Grass Mineral Meadow Marsh Type
MAMM1-12	Common Reed Graminoid Mineral Meadow Marsh Type

Botanical

- Location of putative Butternut
- Location of Butterfly Weed
- Location of Heart-leaved Aster
- Location of Rough-leaved Goldenrod

Wildlife

- Location of calling Eastern Wood-pewee (First Visit)
- Location of calling Eastern Wood-pewee (Second Visit)
- Location of calling Eastern Wood-pewee (Both Visits)
- Location of calling Eastern Meadowlark (First Visit)
- Location of calling Grasshopper Sparrow (Second Visit)
- A — Location of Acoustic Bat Monitors
- 1 — Location of Amphibian Monitoring Station

Figure 3
Extent of Vegetation Communities on the Subject Property

Environmental Impact Study for 11 Main Street, Morriston

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Dry - Fresh Deciduous Hedgerow Thicket Ecosite (THDM3)

Separating the old field meadow from the adjacent residential properties of mowed lawns and a parkland, is a very dense thicket of tall Common Buckthorn shrubs, along with a few trees (often Manitoba Maple or Basswood) and Hawthorns forming a shrub hedge-row.

Naturalized Deciduous Hedge-row Ecosite (FODM11)

Hedge-rows of mature (greater than 10m tall) Basswood and Manitoba Maple or Sugar Maple and rarely Black Cherry trees are located adjacent to the old field meadow. The dense sub-canopy (2 to 10m in height) and understory layers (1 to 2m in height) are often dominated by Common Buckthorn, Hawthorn species, Riverbank Grape and young Manitoba maple or Cherry species. Thicket Creeper, Asters, Goldenrods, Grasses and Riverbank Grape are abundant in the ground layer.

Some of these hedge-row support mature and large diameter Sugar Maple trees. Located southeast of the meadow is a former hedge-row or fence line which has now been surrounded and infilled by Fresh - Moist Deciduous Woodland. A number of large Sugar Maple and Red Oak trees grow in a line above the successional woodland species.

Fresh - Moist Deciduous Woodland Ecosite (WODM5)

In places, the old field meadow is bordered by a Fresh - Moist Deciduous Woodland. The open canopy layer (greater than 10 to 25m + in height) is formed by a 10 to 25% cover of mature Basswood, Black Cherry, White Pine, Bitternut Hickory, Sugar Maple or Trembling Aspen trees. In places the canopy of this community it is more dense and ranges from 25 to 60% cover.

Common Buckthorn, Hawthorn species, vines of Riverbank Grape, Alternate-leaved Dogwood, White Cedar and White Elm form a denser cover (25 to 60% cover or occasional less) in the 2 to 10m height layer. Many large (10-25cm or 25cm + dbh) and open-grown Hawthorns are still standing, forming part of the original woodland cover, however many are now declining as they are being shaded out or over-topped by Common Buckthorn.

In the 1 to 2m + height layer, Common Buckthorn, Chokecherry, vines of Riverbank Grape and Red\Green Ash saplings form a cover greater than 60% (or occasionally less in places). The ground layer (0.5 to 1m in height or less) supports an abundance of seedlings and young saplings of Common Buckthorn and Red\Green Ash along with vines of Wild Red Raspberry, Riverbank Grape and Poison Ivy.

On the east end of the property, this successional woodland community also occurs under towering White Pine and very mature Basswood and Black Cherry trees associated with the FOMM2-3 ELC community.

Dry - Fresh White Pine - Hardwood Mixed Forest Type (FOMM2-3)

Tall White Pine (greater than 25m or less) and very mature Basswood and Black Cherry trees form a super canopy of less than 25% cover. Below the super canopy layer is a 25 to 60% cover of very mature Hawthorn (often dead or over-topped and shaded out by Buckthorn), Common Buckthorn and occasionally Hop Hornbeam trees in the 2 to 10m height range. This mature stand often occurs on upper slopes adjacent to lowland or seepage areas.

In the understory layer (1 to 2m in height), Common Buckthorn, Chokecherry, Black Cherry and Alternate-leaved Dogwood form greater than 60% cover. The ground layer, where it is mostly shaded, is

often dominated by seedlings of Common Buckthorn and Red\Green Ash or Wild Red Raspberry, however in the full sun, a number of meadow openings occur throughout and support typical old field meadow species.

Fresh - Moist White Cedar Coniferous Forest Type (FOC4-1) with Forb Organic Meadow Marsh Type (MAM3-9) complex

Fresh - Moist White Cedar Coniferous Forest occurs on mid to lower slopes of the rolling uplands. This vegetation community is mostly even aged (25-50cm dbh or less) and dominated by White Cedar. Occasional openings in the dense canopy support stands of Trembling Aspen or Black Cherry, or thickets of Hawthorn - Common Buckthorn. The canopy layer is almost entirely dominated by a dense cover (60 to 100%) of White Cedar (in the 2 to 10m height layer). Forming an additional cover of up to 10% are stands or scattered super canopy trees (10 - 25m + in height) of Trembling Aspen, Black Cherry and occasionally White Pine.

A very sparse (0 to 10% cover) understory layer is composed of young White Cedar and occasionally Red\Green Ash trees or saplings with shrubs of Chokecherry and saplings of Black Cherry (in the 1 to 2m height layer). The ground layer often contains little to no vegetation where it is most shaded, but occasionally (10 to 25% cover or less) supports seedlings of White Cedar, Chokecherry and Red\Green Ash.

Forb Organic Meadow Marsh Type (MAM3-9) complex

Numerous seeps and open meadow marshes occur throughout the White Cedar forest. These areas have been complexed as Forb Organic Meadow Marsh Type. Seepage areas support openings of meadow marsh with pockets of organic soils (greater than 40cm in depth). Swamp Aster, Panicled Aster and Boneset form a greater than 60% cover of tall forbs in the 1 to 2m height layer. Below this layer is a ground cover (approx. 100% cover) of Creeping Bent Grass, Reed Canarygrass, Rice-cut Grass and Spotted Touch-me-not (in the less than or 0.5 to 1m height layer). Occasionally, tall shrubs of Willow species or Red-osier Dogwood form less than 10% cover in the 2 to 10m height layer. In places, open seeps with flowing groundwater support patches of Watercress.

Dry - Fresh White Cedar Coniferous Forest Type (FOC2-2)

Along the rim and upper slopes, adjacent to a coniferous swamp, is a linear stand (possibly a former hedge-row bordering the old field meadow) of Dry - Fresh White Cedar Coniferous Forest. Limestone boulders, likely removed when the adjacent agricultural field was first cleared and plowed, are piled here. Along this pile of stones is an open grown, contorted, and multi trunked White Cedar tree, perhaps a marker tree. This tree is now surrounded by an even aged stand (25-50cm dbh) of White Cedar and occasionally Trembling Aspen, forming a fringe of coniferous forest between the conifer swamp and old field meadow.

White Cedar Organic Coniferous Swamp Type (SWC3-1)

This White Cedar Swamp has pockets of deep organics and seepage areas throughout. This community grades uphill and then meets the fringe of Dry - Fresh White Cedar Coniferous Forest and the Fresh - Moist White Cedar Coniferous Forest. In places, this coniferous swamp has a closed canopy and trees 5 to 10m tall (mostly on the mineral soil edges), but mostly supports an open cover of stunted White Cedar trees 1 to 3m tall on organic deposits.

A sparse super-canopy (with less than 10% cover) occasionally supports Trembling Aspen or White Cedar trees 10 to 25m tall. White Cedar is dominant (25 to 60% cover or less) in the 2 to 10m height layer

with the occasional Trembling Aspen trees and rarely some tall Glossy Buckthorn shrubs. White Cedar is also dominant (10 to 25% or more cover) in the 1 to 2m height layer with some shrubs of Glossy Buckthorn and Red-osier Dogwood.

The ground layer (60 to 100% cover) is dominated by mosses and Field Horsetail and supports an abundance of Sensitive Fern, Dwarf Raspberry, Coltsfoot, Rough Goldenrod, Swamp Aster, Rice-cut Grass and Marsh Fern.

Located at the south end of this community are two small areas Common Reed Graminoid Mineral Meadow Marsh Type (MAM1-12). A monoculture of phragmites occurs in these areas.

Red-osier Mineral Thicket Swamp Type (SWT2-5)

Bordering a stream corridor to the southwest and grading northeast into the White Cedar Coniferous Swamp is a Red-osier Thicket Swamp. Red-osier Dogwood is abundant in the 1 to 2m height layer, along with Swamp Aster, Panicled Aster, Grass-leaved Goldenrod and Tall Goldenrod, together forming greater than 60% vegetation cover.

Slender Willow, Bebb's Willow and occasionally Red-osier Dogwood form a tall shrub layer 2 to 10m in height with only 10 to 25% cover or less. The ground layer supports between 25 to 60% vegetation cover of Field Horsetail, Reed Canarygrass, Rush and Sedge species and occasionally Black Bulrush or patches of Creeping Bent Grass. There are occasional pockets of deeper organics but overall the substrates are mineral.

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

A culvert crossing Hwy 6 conveys a tributary to Bronte Creek onto lands adjacent to the property. Vegetation in this lowland area and stream corridor was described as a Reed-canary Grass Mineral Meadow Marsh. This depauperate area is almost entirely dominated by Reed Canarygrass and grades into the adjacent Red-osier Dogwood Thicket Swamp.

Naturalized Coniferous Hedge-row Ecosite (FOCM5)

A stand of mature White Cedar occurs as a hedgerow in the southwest corner of the property. This community occurs primarily on the adjacent lands and separates a large agricultural field from residential lands to the west.

4.2 Wildlife and Wildlife Habitat

4.2.1 Breeding Birds

Breeding bird surveys were conducted on June 11 and July 6, 2022 to inventory breeding birds on 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 35 species of birds were observed or heard on or above the Subject Property. According to Ontario conservation status ranks (S-rank) designations, with the exception of one 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.

Table 1: List of Bird Species Documented on and Adjacent to the Subject Property.

Species	S Rank	Thicket/Meadow	Woodland	Adjacent Lands	Highest Breeding Evidence*	Breeding Code**
American Crow	S5		X		CO	FY
American Goldfinch	S5	X	X		PO	S
American Redstart	S5B		X		PO	S
American Robin	S5	X		X	CO	FY
Baltimore Oriole	S4B		X		CO	FY
Black-capped Chickadee	S5	X	X		PO	S
Blue Jay	S5	X	X		PO	H
Brown-headed Cowbird	S5	X			PO	S
Carolina Wren	S4		X		PO	S
Cedar Waxwing	S5	X	X		PO	H
Chipping Sparrow	S5B	X	X		PO	S
Common Grackle	S5	X		X	PO	H
Common Yellowthroat	S5B		X		PO	S
Cuckoo species (heard)	S4B/S5B	X			PO	S
Downy Woodpecker	S5	X	X		PO	S
Eastern Meadowlark	S4B	X			PO	S
Eastern Towhee	S4B	X	X		PO	S
Eastern Wood-pewee	S4B		X		PO	S
European Starling	SNA	X		X	CO	FY
Field Sparrow	S4B	X	X		PR	A
Grasshopper Sparrow	S4B	X			PO	S
Gray Catbird	S5B	X			PR	A
Great Crested Flycatcher	S5B		X		PO	S
House Wren	S5B	X			PO	S
Killdeer	S4B	X		X	PO	H
Indigo Bunting	S5B	X		X	PO	S
Mourning Dove	S5	X		X	PO	S
Northern Cardinal	S5	X	X		CO	FY
Northern Flicker	S5	X	X		PO	S
Pine Warbler	S5B		X		PO	S
Red-eyed Vireo	S5B		X		CO	NY
Red-winged Blackbird	S5	X			PO	S
Rose-breasted Grosbeak	S5B	X			PR	A
Song Sparrow	S5	X	X		PO	S
Yellow Warbler	S5B	X	X		PO	S

* 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

The Eastern Meadowlark heard calling on the first site visit in the meadow are designated as Threatened in both Ontario and Canada.

The Eastern Wood-pewee heard calling on both site visits in the woodland are designated as Special Concern in Ontario and in Canada.

The Grasshopper Sparrow heard calling on the second site visit in the meadow is designated as Special Concern provincially and federally.

4.2.2 Assessment of Potential Bat Roosting Habitat

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

Assessments of potential bat roosting habitat were conducted on November 23, 2022 and May 31, 2023 using methods described in MNRF (2017). Several snag and cavity trees were identified during the assessment throughout the property. Snag trees along the northern portion of the Subject Property were limited to larger some diameter Silver Maples located primarily on private property adjacent the Main Street road allowance and clustered on the northeastern extent of the FODM11 community adjacent to the WODM5 community. The vast majority of snag and cavity trees on the Subject Property were observed throughout the WODM5 and FOC4-1 ELC communities which are proposed to be retained as part of future development on the property.

Based on the results of this assessment, acoustic bat monitoring was conducted at the property to determine if maternity roost colonies were present and determine the presence of any SAR bats. Two passive acoustic monitors were deployed on May 31, 2023 and recovered on June 11, 2023 for a total of 12 monitoring days. Deployment locations were selected to assess potential use of the candidate roosting habitat in identified trees. The locations of the bat monitors are illustrated in Figure 3.

Two passive acoustic monitoring devices were used at two separate locations during the monitoring period. Both sites were monitored using identical equipment consisting of the SM4Bat Full spectrum monitor and SMM-U1 Omni-directional ultrasonic microphones developed by Wildlife Acoustics Inc. All bat calls that were recorded by the equipment were analyzed using the Kaleidoscope Pro auto-identification program and confirmed for accuracy through manual review. Table 2 below illustrates the total number of bat passes identified to species detected at both monitors during the deployment and a more detailed summary is provided in Appendix E.

Table 2. Summary of Bat Acoustic Monitoring Results.

	Big Brown Bat (EPFU)	Eastern Red Bat (LABO)	Hoary Bat (LACI)	Silver-haired Bat (LANO)	Eastern Small Footed Bat (MYLE)	Little Brown Bat (MYLU)	Northern Long Eared Bat (MYSE)	Tri-colored Bat (PESU)	Monitor Totals
Unit A	-	2	5	1	-	-	-	-	7
Unit B	4	3	87	42	-	21	-	2	159
Total Passes	4	5	92	43	0	21	0	2	166

*Bat passes do not equal the actual number of bats. Individual bats can make multiple passes significantly skewing the results.

A total of 166 identifiable to species bat passes were recorded over the duration of the monitoring period. The majority of passes were detected at Monitor B, with most recordings identified as Silver-haired Bats and Hoary Bats. Little Brown Bat and Tri-colored Bat were also detected during the monitoring period. Further discussion is provided in Sections 5.1 and 5.5.1 below.

As discussed above, the Kaleidoscope Pro auto-identification program was used as part of the initial analysis to identify bats to species. Audio files that appear to be Chiroptera but that are not clear enough or lack sufficient call volume are classified as "No ID". Where specific species identification was not possible, these audio files were manually reviewed and classified as either low frequency or high frequency to determine if calls were within the range of Ontario's Species at Risk bats.

Unit A had seven No ID files after auto identification all of which were determined to fall within the low frequency range. Unit B had a total of 136 No ID files post auto identification with 42 of those falling in the high frequency range.

Recordings collected during the monitoring period also included audio files that were identified as non Chiroptera and categorized as noise (i.e. anthropogenic, atmospheric, other wildlife, etc.). These recordings were selected at random for review to ensure auto identification software was functioning correctly.

4.2.3 Amphibian Call Surveys

Our assessment indicates that the potential amphibian breeding habitat on the property is limited to the watercourse on the west side of the property. Amphibian use of the watercourse was assessed using amphibian call surveys, which were conducted in the spring of 2023.

An assessment of wetland communities (SWC3-1, MAM3-9, MAMM1-12, MAM2-2 and SWT2-5) was conducted prior to the onset of the first monitoring period. These areas were assessed for suitable breeding habitat. Prior to identifying potential monitoring stations, visual assessments of these wetland communities were conducted. A preliminary auditory assessment was also conducted by walking along the extent of the tree line on the property to identify amphibian calling on and adjacent to the property.

Suitable breeding habitat was not identified within the SWC3-1, MAM3-9, and MAMM1-12 communities and no calling was observed during the preliminary site walk. The wetland features at MAM2-2 and SWT2-5 were identified as potential amphibian breeding habitat, and this area was therefore selected for a monitoring station. The location of the amphibian survey station is illustrated in Figure 3.

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

The first amphibian survey was conducted on April 3, 2023 and commenced at 20:43, while the air temperature was 9°C, winds were estimated to be 1 on the Beaufort Scale and sky was partly cloudy. The May 8, 2023 visit commenced at 21:40. Conditions were mostly cloudy, with an air temperature of 14°C and slight breeze. The final amphibian survey was completed on June 19, 2023 beginning at 21:34. Conditions were partly cloudy, with an air temperature of 19°C and a gentle breeze.

No amphibians were heard calling during the surveys. Intermittent road noise from Highway 6 west of the monitoring station was significant throughout each of the survey periods. This road noise, along with the marginal potential breeding habitat in the area, limits the overall quality of breeding habitat available in the wetland.

Although no calling amphibians were heard during surveys, a single Northern Leopard Frog was noted in a watercourse pool on May 3, 2023. Our observations indicate that it is not likely that the hydroperiod of this pool is sufficient to provide suitable breeding habitat for this species. Amphibian species heard calling off-site included Spring Peepers and Gray Treefrogs.

During an assessment completed previously on the property southeast of the Subject Lands, Beacon Environmental (2023) reported detecting Spring Peepers, Gray Treefrogs, Wood Frog, Green Frog and American Toad at various monitoring stations. A total of seven amphibian monitoring stations were established as part of the project. Two of these stations were located within 50 metres of the Subject Property boundary. Monitoring stations 4 and 5 were located in Willow Mineral Thicket Swamp (SWT2-2) and Cattail Mineral Shallow Marsh (MAS2-1) ELC communities respectively. A full chorus of Spring Peepers was identified outside of the outside survey station 4 on the first site visit. Spring Peepers were also identified during the second survey outside the survey station; however, no call code is provided. American Toad was also identified calling outside the property boundary and presumed to have been calling from the southern edge of the Subject Property based on the location of the survey station. A Gray Treefrog was also observed calling outside of the station area but located within the property boundary. No calling was detected at station 5 at any of the survey periods.

The amphibian breeding survey results of the Beacon Environmental (2023) report are comparable to those observed on the Subject Property and appears to confirm limited use of the Subject Property and adjacent lands to the south for amphibian breeding habitat.

4.2.4 Reptile Surveys

Active hand searches for reptiles and amphibians were conducted on June 23, July 14, August 10 and September 27, 2022, and May 3, June 10 and August 18, 2023, generally following methods described in OMNRF (2016). These searches resulted in the observation of one Eastern Gartersnake in the southeast corner of the meadow and into the woodland area.

4.2.5 Incidental Wildlife Observations

Incidental wildlife observations including signs were recorded during each visit to the Subject Property and included Eastern Chipmunk, Grey Squirrel, Red Squirrel, and White-tailed Deer.

Incidental insect observations include Cabbage White Butterfly *(Pieris rapae),* Calico Pennant *(Celithemis elisa),* Common Wood-Nymph *(Cercyonis pegala)* Cricket (*Gryllidae*), Dragonfly (*Odonata*), Emerald Ash Borer *(Agrilus planipennis),* Mosquito (*Culicidae*), Moth (*Lepidoptera*), Spittlebug (*Cercopidae*) and Skipper Butterfly (*Hesperiidae*).

4.3 Aquatic Habitat Assessment

A review of background mapping indicates that two tributaries to Bronte Creek are located on the property. The largest of the two tributaries is located on and adjacent to the west end of the property. This watercourse (identified as Reach TBC-1 in the 2023 GEO Morphix Fluvial Geomorphological Assessment) originates at the culvert under Highway 6 and conveys water across the southwest corner of the Subject Property. The channel of this watercourse is poorly defined within a Reed Canarygrass marsh and consists primarily of small, braided drainages that are often not discernible among the Reed Canarygrass. Where more defined sections of channel are present south of the property, bankfull width ranged from 1.0-2.0m in width and 0.2-0.3m in depth. The silty clay substates of this watercourse and adjacent areas support Reed Canarygrass and mixed emergent species.

No flow or standing water was present in the watercourse during assessments on August 10, 2022, September 27, 2022 and August 18, 2023, however a small pool of water within the Reed Canarygrass was present during assessments on April 3 and May 3, 2023. This pool was approximately 1m in length, 0.6m in width and approximately 0.15m in depth and was observed to be providing refuge for a single Northern Leopard Frog. No fish were observed in the pool, however shallow pools and the pond downstream are likely providing refuge for resident fish species. Fish community sampling was not completed in this watercourse as part of this assessment.

Background mapping also identifies a small watercourse on the eastern portion of the property. An assessment of this area indicates that a small ephemeral drainage is located within the woodland area, however this drainage is poorly defined and not considered to be a watercourse.

5.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1 Species at Risk

Three Endangered species (Butternut, Little Brown Myotis and Tri-colored Bat) were observed or detected on the Subject Property and Threatened species observed on the property were limited to Eastern Meadowlark.

Butternut

Butternut is a medium-sized tree in the walnut family that can reach up to 30 m in height. This species is generally intolerant of shade and is often found growing in sunny openings within forests or in open areas. Butternut are known to hybridize with other members of the genus *Juglans*, including Japanese Walnut, Black Walnut and English Walnut.

The Butternut observed west of the property is a suspected hybrid based on physical characteristics and is not considered to represent a pure Butternut. The location of this tree is illustrated in Figure 3. Although this individual is suspected to be a hybrid, no portion of the proposed development is anticipated to impact this tree and adequate setbacks to prevent damage will be adhered to.

Myotis and Perimyotis Species

Two Endangered bat species (Little Brown Myotis and Tri-colored Bat) were detected during acoustic monitoring. Tri-colored Bats are known to roost within forested habitats and may roost in clumps of dead foliage and lichens (ECCC 2018). In more anthropogenically-modified landscapes, maternity roosts may also include barns or similar human-made structures (ECCC 2018). Females roost alone or in small colonies.

Single passes by Tri-colored Bats were detected on June 2 and June 10, 2023. Based on the occurrences, these passes are considered to be incidental movement past the monitor and do not likely represent roosting associated with trees in the vicinity of Unit B.

Little Brown Myotis often use buildings and other anthropogenic structures (e.g., bat boxes, bridges, and barns) for maternal roosting, but will also use cavities of canopy trees, foliage, tree bark, crevices on cliffs, and other structures (ECCC 2018). Maternity colonies range from several to hundreds of females with young (ECCC 2018).

Twenty-one passes by Little Brown Myotis were detected over eight nights at Unit B. Nightly passes ranged from 0 to 5. Passes were primarily recorded between 00:00 and 4:30 which are times typically associated with peak foraging activity. Little Brown bats typically emerge from their roost during dusk which is generally ends around 21:30 in early June. The passes recorded are not reflective of emergence times characteristic of Little Brown Myotis and do not indicate the use of maternal roost trees in the vicinity of the acoustic monitor. Since Little Brown Myotis typically roost in maternal colonies with several individuals, the number of passes detected at Unit B suggest that these passes are related to incidental daily movements and none of the trees near Unit B are being used as maternal roosting habitat. It is possible that a maternal roost is present in the vicinity of the property, however no potential roost trees will be impacted by the proposed project.

In addition to the bat passes identified to species, 42 additional audio recordings were manually reviewed and assessed to be within the high frequency range consistent with Ontario's SAR bat calls. These passes occurred most nights in similar frequency to the Little Brown Myotis throughout the 12-day monitoring period with the exception of June 8, where approximately 10 passes were recorded. The relatively low number of additional Myotis/Perimyotis passes identified through manual identification does not change the conclusions reached above that these passes are related to incidental daily movements.

Eastern Meadowlark

During the second breeding bird survey, one Eastern Meadowlark was heard calling in the meadow area adjacent to a deciduous hedgerow on the central portion of the property. The approximate call location of the Eastern Meadowlark is illustrated in Figure 3.

Eastern Meadowlark is an obligate grassland species that will breed in a variety of grassland habitat types, as well as pastures and hayfields, however Eastern Meadowlarks now nest most commonly in a variety of anthropogenic grassland habitats (pastures and hayfields) that effectively mimic the structural attributes (vegetation height and vegetation density) of native prairies (McCracken et al. 2013). Optimal nesting habitat for Eastern Meadowlark generally contains moderately tall (25 to 50 cm) grasses with abundant litter cover, a high proportion of grass cover and low proportions of shrub/woody vegetation cover and a low percent cover of bare ground (McCracken et al. 2013).

Based on the timing of the single Eastern Meadowlark observation on June 11, 2022, it is assumed that this individual was a solitary male and not part of a breeding pair on the Subject Property. Based on our assessments, the Subject Property does not appear to be providing breeding habitat for Eastern Meadowlark, however it does appear to be providing incidental foraging habitat.

Using data available from the Natural Heritage Information Centre (NHIC), as well as various atlases and information sources, a species at risk screening was prepared as part of our assessment (see Appendix F). Information available from NHIC indicated that two Endangered species (Butternut and Redside Dace) as well as two Threatened species (Bobolink and Eastern Meadowlark) have been documented in the vicinity of the Subject Property. Data retrieved from the NHIC is provided in Appendix G.

Aquatic assessments were not completed as part of this assessment, however based on the intermittent nature of the west watercourse on the Subject Property, it was determined that Redside Dace habitat is not present on the property.

No genetically pure Butternut were observed on the property. A Butternut hybrid was documented along the west limit of the property, however this trees is not considered to represent a species at risk.

Bobolink are known to use habitats similar to Eastern Meadowlark. Although breeding bird surveys were conducted as part of this project, this species was not detected on or adjacent to the Subject Property. Therefore, it is our conclusion that the Subject Property is not providing habitat for this species.

5.1.1 Other Potential Species of Conservation Concern

In addition to the above, Special Concern species observed on the property were limited to Eastern Wood-pewee and Grasshopper Sparrow. The Eastern Wood-pewee is one of the most common and

widespread songbirds associated with North America's eastern forests (COSEWIC 2012). Often associated with forest clearings and edges, Eastern Wood-Pewee breeds in virtually every type of wooded community in eastern North America (Watt et al. 2020). Breeding territories of Eastern Wood-pewee in Southern Ontario are reported to range from 1.37ha to 2.03ha in size (COSEWIC 2012). This species is relatively common in southwestern Ontario; however, declining population of this species has prompted the federal and provincial governments to designate this species as Special Concern.

Eastern Wood-pewee were heard calling from the woodland east of the meadow area on the eastern portion of the Subject Property. Eastern Wood-pewee were heard calling during each of the breeding bird surveys and appear to be using the woodland feature for breeding.

Grasshopper Sparrows were heard calling at three locations in the meadow community on the Subject Property during the second breeding bird survey on July 6, 2022. Grasshopper Sparrows typically arrive in southern Ontario in late-May, where they initially nest for 8-9 days, followed by a second clutch in Mid-June (Vickery 2020). Based on the timing of observations, it is likely that the observation on the Subject Property were of fledged juveniles from adjacent nesting sites who were using the property as incidental foraging.

Information obtained from NHIC indicates that two additional Special Concern Species (Snapping Turtle and Eastern Ribbonsnake) have been documented in the vicinity of the Subject Property. Potential habitat for Snapping Turtles is presumed to be present in the tributary to Bronte Creek and associated wetlands and pond downstream of the property, as well as the East Morriston Swamp Wetland Complex.

No Snapping Turtles were observed on or adjacent to the Subject Property and the lack of standing water in these wetlands makes the habitat unsuitable for prolonged use by this species.

Eastern Ribbonsnake is a semi-aquatic species that is almost always found close to water, such as wetlands and the shorelines of lakes and rivers, where it hunts for frogs and small fish. Potential habitat for Eastern Ribbonsnake is not located on or adjacent to the property. The limited standing water in wetlands on the property make these wetlands unsuitable for this species. This species may occur in portions of the East Morriston Swamp Wetland Complex, with any potential habitat located off-site.

5.2 Significant Woodlands

During our review of background mapping available for the property, it was noted that portions of the Subject Property have been designated as Greenland (Significant Woodland) in the County of Wellington Official Plan (Figure 2). The county of Wellington Official Plan provides a definition of woodland but does not provide criteria for delineating woodlands. To be consistent with the definition of woodland in the PPS and mapping standards of the MNRF, the extent of woodlands on this property were refined to coincide with vegetation communities that meet the ELC definition of forest (60% or more canopy cover).

Using this criteria, our assessment indicates that the woodland on this property generally follows the White Cedar Forest (FOC2-2 and FOC4-1) on the property. Since canopy cover in the WODM5 community on the property is less than 60% and often dominated by hawthorns, this vegetation community was generally excluded from the refined extent of woodlands illustrated in Figure 4.

To be considered as significant, Section 5.5.4 of the Wellington Official Plan states that "In the Urban System, woodlands over 1 hectare are considered to be significant by the County and are included in the Greenlands System." Section 5.5.4 also states that Significant woodlands will be protected from development or site alterations which would negatively impact the woodlands or their ecological functions.

As the woodland on and adjacent to this property measures more than 1ha in size, the refined woodland is considered to be significant woodland.

5.3 Wetlands

As illustrated in Figure 2, mapping available from the Ministry of Natural Resources and Forestry (MNRF) indicates that a portion of the East Morriston Swamp Non-Provincially Significant Wetland Complex (non-PSW) is located along the eastern end of the Subject Property and extends south of the property within the woodland feature. Our assessment confirmed the presence of three primary wetland vegetation communities on and adjacent to the property. A discussion of each community is provided below.

From our assessment, the current extent of the East Morriston Swamp Wetland Complex generally follows the extent of the SWC3-1 community on the southern portion of the property. Although not included in the mapped extent of the evaluated wetland, the SWC3-1 community generally follows the lower elevation sections of the slope on the western portion of the property, extending towards the Bronte Creek tributary on the west side of the property. For the purposes of this assessment, this portion of the SWC3-1 community is considered to be contiguous with the non-PSW.

Located on the western end of the property is a Red-osier Mineral Thicket Swamp, which also follows the lower elevation portion of a slope. This vegetation community serves as a transition to the Reed Canarygrass marsh associated with the Bronte Creek tributary. For the purposes of this assessment, these vegetation communities are considered to be wetland.

Site visits were conducted with Conservation Halton staff on August 18, 2023 and May 1, 2024 to verify the extent of wetlands on this property. The refined extent of wetlands on this property are illustrated in Figure 4.

5.4 Watercourses and Fish Habitat

As illustrated in Figure 2, two tributaries to Bronte Creek have been identified on the Subject Property. The Bronte Creek tributary located on the western portion of the property was determined to be providing intermittent potential fish habitat, as this poorly defined watercourse contains isolated pools in the spring and dries completely during the summer. No obvious seeps or springs were noted in the Reed Canarygrass marsh, however it is assumed that some spring or seasonal groundwater inputs do occur. Further discussion of potential impacts to this watercourse is provided below.

The Bronte Creek tributary on the east side of the property was determined to be a minor drainage swale, which conveys water ephemerally across the property. Because this drainage is poorly defined, this drainage is not considered to be a watercourse and is not considered to be providing fish habitat. The

proposed development will not affect flow conveyance in this watercourse or affect any potential erosion on the property.

5.5 Significant Wildlife Habitat

The SWH Criteria Schedule for Ecoregion 6E (OMNRF 2015) identifies four main types of Significant Wildlife Habitat (SWH): seasonal concentrations areas, rare vegetation communities and specialized wildlife habitat, habitats of species of Conservation Concern, animal movement corridors. These are discussed below in relation to the natural features on and adjacent to the site and an assessment table is provided in Appendix H.

5.5.1 Seasonal Concentration Areas

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E identifies 16 types of seasonal concentrations of animals that may be considered significant wildlife habitat. These include, but are not limited to:

- Waterfowl Stopover and Staging Areas (Aquatic and Terrestrial);
- Shorebird Migratory Stopover Area;
- Raptor Wintering Area;
- Bat Hibernacula;
- Bat Maternity Colonies;
- Bat Migratory Stopover Area
- 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;
- Deer Yarding Areas; and
- Deer Winter Congregation Areas.

Seasonal concentration areas are typically designated as significant wildlife habitat if it supports a species at risk or if habitat destruction is expected to result in large population loss.

Silver-haired bats were detected at each monitor during acoustic monitoring. As only one pass was detected by Unit A, no potential maternal colonies are located near this monitor.

A total of 42 passes by Silver-haired bats were recorded at Unit B. Passes ranged from 1-7 per night over the monitoring period. Because passes were generally less than 5 per night, these data do not indicate that a potential Silver-haired Bat maternal colony is located near this monitor.

Our assessment of the property indicates that it is unlikely that snake hibernacula are located within the cultural meadow portion of the property. As this portion of the property is generally high and will not likely maintain suitable soil moisture conditions over the winter, this portion of the property is not likely

being used by snakes for overwintering. It is possible that hibernacula may be present in the cedar woodland near the bottom of slope, and if so, no impact to potential hibernacula will occur as a result of this project.

It is also possible that the cedar woodland and wetland areas are providing winter habitat for White-tailed Deer. For the purposes of this assessment, it is assumed that the cedar forest on the property is providing habitat as a seasonal concentration area for White-tailed Deer.

5.5.2 Rare Vegetation Communities

Rare habitat includes vegetation communities that are designated as extremely rare to uncommon in Ontario. Those that qualify as rare habitats are assigned an S-Rank of S1, S2 or S3 by the Natural Heritage Information Center.

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E identifies 7 specialized habitats that may be considered significant wildlife habitat. They are:

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

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

5.5.3 Specialized Habitats of Wildlife considered SWH

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

Specialized habitats for wildlife include:

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

Several seeps were observed in the White Cedar forest during our assessments of the property. These seeps are located near lower positions on the slope and are too small to delineate on figures. Wetlands in

the vicinity of these seeps did not contain standing surface water in the spring and no amphibian or specialized wildlife use of these areas were noted.

Although various wetland features are located on the property, no vernal pools are present that would provide suitable habitat for amphibian breeding. Amphibian call surveys completed in 2023 confirmed that no significant amphibian breeding occurs on the property.

5.5.4 Habitats of Species of Conservation Concern

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

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

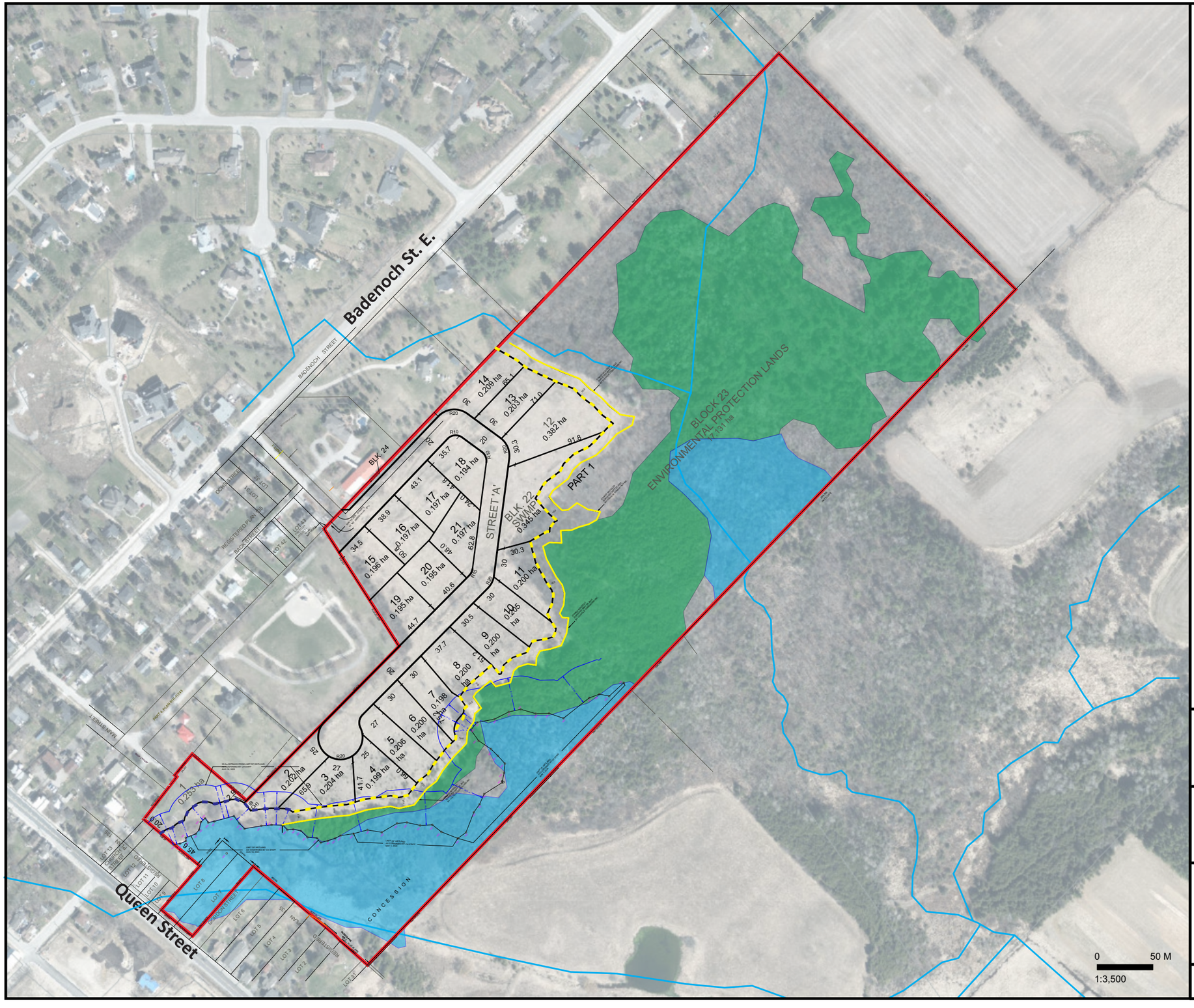
As described above, Eastern Wood-pewee was heard calling during both breeding bird surveys from the woodland on the northeast portion of the property. For the purposes of this assessment, the woodland on the eastern portion of the property is considered to be Eastern Wood-pewee habitat and therefore also considered Significant Wildlife Habitat.

The portion of the WODM5 community on the central and southern portion of the property was observed to be dominated by tall shrubs of hawthorn, which are not typical habitat for Eastern Wood-pewee. Because available habitat on this portion of the property is not typical breeding habitat for Eastern Wood-pewee and was not being used by this species, the WODM5 community on the central and southern portion of the property is not considered to be breeding habitat for Eastern Wood-pewee or significant wildlife habitat.

Grasshopper Sparrows were heard calling within the cultural meadow on the Subject Property during the second breeding bird survey. Based on the timing of when calls were detected, it is our assessment that these individuals were likely recently fledged juveniles who were using the property for incidental foraging. It is therefore our assessment that the meadow on the property is not providing habitat for species of conservation concern.

5.5.5 Migration Corridors

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



Legend

- Subject Property
- Watercourse
- Extent of Significant Wildlife Habitat
- 10m Significant Wildlife Habitat Buffer
- 15m Wetland Buffer
- Refined Significant Woodland
- Refined Wetland

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

Environmental Impact Study for 11 Main Street, Morriston

Prepared for: **WDD International**

Prepared by: COLVILLE CONSULTING INC.

DATE: August 2024

FILE: C22059

Based on our review of aerial imagery, it appears that the woodland and wetland features on and adjacent the Subject Property provide opportunities for localized wildlife movement in the area, but does not provide a corridor function.

5.6 Significant Areas of Natural and Scientific Interest (ANSI)

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

6.0 IMPACT ASSESSMENT

The proposed development on the Subject Property includes 21 estate residential lots along the northwestern portion of the property, as well as a stormwater management pond. Proposed residential lots are approximately 0.20ha in size and will front onto new streets to be constructed as part of the development (see Appendix A and Figure 4). Development adjacent to the Subject Property will also include the extension of Ochs Street along the northern boundary of the Subject Property to provide access to the property.

The vast majority of the proposed development has been designed to be located within the cultural meadow portion of the Subject Property and incorporate buffers from woodland and wetland areas. An assessment of potential impacts to the various natural heritage features on and adjacent to the property is included below.

6.1 Significant Habitat of Endangered and Threatened Species

Three Endangered species (Butternut, Little Brown Myotis and Tri-colored Bat) were documented on the property during our surveys. As described previously in this report, the Butternut is considered to be a hybrid based on physical characteristics and is not considered to be a pure Butternut for the purposes of application of the Endangered Species Act.

Despite this tree being considered a putative hybrid Butternut, the tree is located adjacent to the Subject Property and suitable setbacks to prevent damage to the tree during construction activities will be adhered to. No negative impact to the putative hybrid Butternut is anticipated.

Little Brown Myotis and Tri-colored Bat were detected during acoustic monitoring. As described above, the passes recorded by Tri-colored Bats and Little Brown Myotis are considered to be incidental daily movements and no potential maternal roosts are suspected to occur in trees near the proposed development.

Threatened species observed on the property were limited to an Eastern Meadowlark, which was observed in the meadow portion of the property during the first breeding bird survey. This individual was only observed during the first visit and not the second visit, which suggests this male is not part of a breeding pair. As Eastern Meadowlarks often have multiple clutches per year and males often stay in close proximity nesting females (Vickery 2020), there are no indications that Eastern Meadowlark are breeding on the Subject Property and the observed use is assumed to be limited to foraging.

It is our assessment that the proposed project will have no impact on significant habitat of Endangered or Threatened Species.

6.2 Species of Special Concern

Two Species of Special Concern (Eastern Wood-pewee and Grasshopper Sparrow) were documented during our survey work. The Eastern Wood-pewee was heard calling within the woodland on the east side of the Subject Property and the Grasshopper Sparrow was observed foraging within the cultural meadow on the central portion of the property. The approximate observed locations of these species are illustrated in Figure 3.

Eastern Wood-pewee is one of the most common and widespread songbirds associated with North America's eastern forests (COSEWIC 2012). 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 1.37ha to 2.03ha in size (COSEWIC 2012). Eastern Wood-pewee is still considered common in southern Ontario, however the declining population of this species has prompted the federal and provincial governments to designate this species as Special Concern.

Eastern Wood-pewee were heard calling from the woodland on the eastern portion of the Subject Property during both breeding bird surveys, suggesting that the woodland is being used as breeding habitat. Based on our observations, Eastern Wood-pewee were utilizing the interior portions of the woodland on the east side of the property, with the nearest detection approximately 120m from the woodland edge.

As illustrated in Figure 4, no portion of the refined woodland will be directly affected by the proposed development lots have been located 10m from the edge of the woodland. Based on the proximity of Eastern Wood-pewee to the proposed development and the understanding that Eastern Wood-pewee are somewhat tolerant to urban land uses, the proposed development will have no impact on habitat of Eastern Wood-pewee.

Grasshopper Sparrows were heard calling at three locations in the meadow community on the Subject Property during the second breeding bird survey on July 6, 2022. Based on the timing of observations, it is likely that the observations on the Subject Property were of fledged juveniles from adjacent nesting sites who were using the property as incidental foraging habitat. Because the Subject Property appears to only be providing incidental foraging habitat, proposed development in the meadow will not impact significant habitat of this species.

6.3 Significant Woodlands

As stated above, the woodland on this property has been refined to follow the White Cedar forest community. During our assessment it was noted that the portion of the woodland on and adjacent to the property was providing habitat for bird and wildlife species which are generally common in the vicinity of the property.

Based on the results of our observations, proposed lots were recommended to be located 10m from the extent of the woodland on this property. The recommended buffer will be sufficient to avoid directly impacting trees in the woodland, as well as avoiding any impacts to species using the woodland area.

Based on our assessment, the proposed residential lots adjacent to the woodland will have no impact on ecological functions of the Significant Woodland on and adjacent to the Subject Property. Despite the above conclusion, it is recommended that the mitigation measures included below be incorporated during future construction on the Subject Property.

As illustrated in Figure 4 and Appendix A, the stormwater management block has been located in the southeast corner of the proposed development, adjacent to the refined woodland boundary. It is understood that water from the stormwater pond will outlet into a flow dissipator and into the woodland. The pond and flow dissipator will have no impact on the functions of the woodland, however water discharged from the stormwater pond will have the potential to affect hydrology and tree health within a small portion of the woodland.

It should be noted that detailed design for the stormwater pond has not been finalized, and therefore this assessment of potential impacts is intended to be preliminary and is based on the conceptual plans prepared. Our assessment of the woodland and wetland on the portion of the property adjacent to the stormwater pond indicates that these vegetation communities are dominated Eastern White Cedar. It is anticipated that soil moisture in the woodland area downstream of the outfall will increase as a result of the water discharged from the stormwater pond, however as this species is capable of growing in moist soil conditions, additional soil moisture is not likely to affect Cedar trees in the woodland.

Since this stormwater pond is intended to hold an attenuate runoff from installed impermeable surfaces such as roadways and driveways, it is expected that runoff from these areas will occasionally contain de-icing compounds. Road salt and de-icing compounds can be absorbed by trees, resulting in scorching of leaves and an overall decline in tree health. Various species are affected by these compounds differently, with Eastern White Cedar considered to be moderately tolerant to the effects of road salt.

It is anticipated that some of the White Cedar trees immediately downstream of the outfall may be affected by water quality, however this impact is likely to be localized. It is recommended monitoring be completed downstream of the outfall for two years after completion of the proposed project to assess any impacts stormwater may have on tree health or soil stability. If tree health concerns are noted, it is recommended that salt tolerant species, such as White Spruce or Balsam Poplar be installed in place of any declining White Cedars. Both of these species are known to occur on or adjacent to the property.

In addition to water quality issues, it is possible that increased water volumes discharged to the woodland may result in localized erosion from focused water flow. Our assessment of the property and the anticipated outfall location indicates that the microtopography in this area makes it difficult to predict where stormwater pond discharge will flow. Because of this uncertainty, it is recommended that a future monitoring program also incorporate monitoring for any downstream focused flow or erosion. If any future focused flow or erosion is observed, it is recommended that the stormwater engineer be re-engaged to provide mitigative options and be involved with adaptive management activities on the site.

6.4 Wetlands

Our assessment confirmed the presence of three primary wetland vegetation communities on and adjacent to the property. For the purposes of this assessment, the extent of the East Morriston Swamp

Non-PSW Wetland Complex generally follows the extent of the SWC3-1 community on the southern portion of the property. The Red-osier Mineral Thicket Swamp and the Reed Canarygrass marsh are also considered to be wetland. The refined extent of wetlands on this property are illustrated in Figure 4.

As illustrated in Figure 4, a portion of the development is proposed to be located near the Red-osier Mineral Thicket Swamp and the Reed Canarygrass marsh on the west side of the property. Based on our assessments, the Reed Canarygrass marsh occurs primarily in association with the Bronte Creek tributary and appears to be sustained by a combination of surface water runoff from upstream of the property and seasonal groundwater seepage. This portion of the wetland does not contain any vernal pools or appear to provide any significant wildlife habitat functions. The Red-osier Mineral Thicket Swamp occurs as a relatively narrow band of vegetation on the peripheries of the Reed Canarygrass marsh, generally occurring near of at the toe of the slope.

Based on our assessment of the wetland on the west side of the property, a 15m buffer from the wetland is recommended to maintain any ecological functions of this wetland. It is our assessment that wildlife functions in this wetland are impaired by road noise and disturbance along Highway 6 and that development associated with the proposed lots will not impact wildlife habitat in the wetland.

Our observations of the wetland indicate that a majority of water conveyed to this wetland is from lands upstream of Highway 6. The proposed development will not impact the conveyance of surface water to and from this wetland. As part of the assessment of this property, a preliminary water balance was completed to assess potential impacts development of the property may have on adjacent wetlands. This assessment indicates that grading within the proposed development areas will not pose a hydrologic impact to adjacent wetland areas.

As illustrated in Figure 4 and described above, the wetland on the remainder of the property generally follows the White Cedar swamp, which occurs near and down gradient from the toe of slope. These wetland areas generally occur south of the White Cedar forest community, which occurs on the middle and upper portions of the slope. The White Cedar swamp communities on the property were observed to be providing limited specialized wildlife habitat functions, and very little, if any, surface water was observed in most wetland areas.

As illustrated in Figure 4, proposed lot boundaries have been located a minimum of 15m from the refined extent of the wetland, with varying portions of lots 3, 4, 6, 7 and 8 occurring within 30m of the mapped extent of the wetland. It is anticipated that future development on parts 3, 4, 6 and 8 will be limited to site grading, which will have no direct impact on the adjacent wetland area. Additionally, due to the nature of the soils in this area and the wetland adjacent to these lots, the anticipated lot grading will not impact water volumes entering this wetland.

Our assessment of the property indicates that the wetland adjacent to lot 7 generally occurs in a location where drainage from a portion of the property and baseball diamond is directed. Surface water and shallow groundwater appears to discharge to this area, ultimately resulting in a wetland that has development on often saturated soils. Standing water in this area is generally limited to water that accumulates in ATV ruts, with no vernal pools occurring.

Based on our observations and assessment, the proposed lot boundaries and anticipated grading associated with lot 7 will have no ecological impact to the adjacent wetland area. Vegetation currently in this area will continue to persist following development and any observed wildlife functions should be unchanged.

It is our assessment that the proposed lot boundaries and anticipated future grading required for these lots will not impact the observed ecological functions of the wetland. Additionally, it is expected that future development on these lots will have no effect on the hydrological functions of wetland on this property and the proposed development will not result in any flooding or erosion concerns downstream of the property.

Although not illustrated on Figure 4, it is recommended that the provided buffers between the proposed lot boundaries and the adjacent woodlands and wetlands be restored to enhance the ecological function of the buffer and complement the adjacent natural areas. It is expected that a detailed enhancement plan will be prepared as a condition of future approvals on the property. This plan is anticipated to outline recommended enhancements, including incorporating a combination of native trees and shrubs, as well as habitat enhancements, such as brush piles and nesting boxes. Periodic monitoring can also be incorporated into this plan as required.

6.5 Fish Habitat

The Bronte Creek tributary located on the western portion of the property was determined to be providing potential intermittent fish habitat. Proposed grading and future development on the site is planned to be located over 75m from this watercourse and the vegetation within the riparian and wetland feature will be maintained. From our assessment, the proposed development will have no impact on fish habitat in the Bronte Creek tributary.

6.6 Significant Wildlife Habitat

For the purposes of this assessment, it is assumed that the woodland and portions of the WODM5 community are providing significant wildlife habitat. Our assessment indicates that it is possible that scattered trees in the woodland are providing potential roosting habitat for bats. As no trees in the woodland areas will be removed to facilitate development on the property, potential bat roosting habitat on this property will not be impacted.

Our assessment of the White Cedar woodland and wetland areas indicate that these areas could be providing winter habitat for White-tailed Deer, due to the canopy of this community and the potential to minimize snow depths. Since no portion of these vegetation communities will be impacted by the proposed project, no impact to potential use by White-tailed deer will result from this development.

Several seeps were observed in the White Cedar forest during our assessments of the property. These seeps are located near lower positions on the slope and are too small to delineate on figures. Although no specific specialized habitat functions were noted in association with these seeps, these areas are located in the woodland and will not be directly impacted by the proposed development.

Eastern Wood-pewee was heard calling during both breeding bird surveys from the woodland on the northeast portion of the property. For the purposes of this assessment, the woodland on the eastern portion of the property is considered to be Eastern Wood-pewee habitat and also considered Significant Wildlife Habitat. Because potential habitat of Eastern Wood-pewee on the property will not be altered and development setbacks from the woodland will be sufficient to avoid impacts to this species, the proposed development will not affect potential significant wildlife habitat in the woodland.

6.7 Indirect Impacts

In addition to the direct impacts discussed above, it is anticipated that the proposed development may result in indirect impacts which may affect the ecological functions of the woodland and wetland features. Potential indirect impacts that could occur as part of this project include increases in ambient light and noise.

It is anticipated that security and decorative lighting will be installed on the proposed residences and street lighting, which could increase the existing ambient lighting in the area. As the area north and west of the Subject Property is already urbanized and most of the species observed utilizing the woodland adjacent to the development are common in association with residential land uses, it is not anticipated that the expected increase in ambient lighting will pose an impact to wildlife species using the woodland. To minimize any increases in ambient light to lands adjacent to the development, it is recommended that security lighting be directed away from the woodland and wetland areas. It is also recommended that shades be installed on lighting to avoid direct lighting upwards, which may adversely influence bird behaviors.

Although it is not anticipated that noise levels on the property will significantly increase as a result of everyday living activities, it is anticipated that an increase in noise may result for a short period of time during construction activities on the property. This increase in noise has the potential to temporarily disrupt wildlife in close proximity to the development, however based on the species observed, impacts are not anticipated to be significant.

7.0 MITIGATION MEASURES

As discussed above, it is our expectation that the proposed development will have no impact on the ecological functions of the significant woodland, wetlands, and watercourses on and adjacent to the Subject Property. To assist in avoiding any impacts associated with the proposed residential development, it is recommended that the following mitigation measures be implemented during detailed design and construction of residences on these properties.

- Any required vegetation removal should be conducted in a manner to avoid impacts to nesting birds that may be utilizing habitats on the property. The breeding bird period for this area is generally March 15 to August 31. A survey for active bird nests should be conducted prior to any vegetation removal or site alteration planned to occur during this window;
- Any grading or filling to be conducted on the Subject Property should be designed where possible to maintain existing overland flow patterns to help avoid hydrological and sedimentation impacts to the woodland and wetland.

- It is recommended that roof drains and runoff from impervious surfaces be directed towards the wetland and woodland where possible and the use of low impact development features be considered to assist with maintaining water infiltration.
- Exclusion fencing should be installed no less than 1m from the drip-line of trees to be retained in the Significant Woodland to ensure roots are not compacted or injured;
- Appropriate sediment and erosion controls should be installed prior to any grading, construction or site alteration works on the Subject Property to prevent sediment transfer to the wetland and watercourse features;
- Any silt fences should be properly embedded (as per Ontario Provincial Standard Specification 805) into the ground to reduce any offsite movement of silt;
- Native tree and shrub species should be incorporated into future landscape plans where possible; and,
- Any exterior lighting should be directed away from the Significant Woodland and wetland on and adjacent to the property where possible.
- It is recommended that continuous rear yard fencing be installed adjacent to buffer areas to help prevent encroachments into established buffers.
- It is recommended that a buffer enhancement plan be prepared following detailed design, with this plan to outline works to enhance buffers adjacent to the woodland and wetland and complement these features. Monitoring of plantings and enhancement should be incorporated into this plan.
- Due to the uncertainty regarding discharge from the stormwater management pond, it is recommended that that a detailed monitoring plan be prepared to assess potential impacts related to water quality and quantity in the woodland. The monitoring plan should incorporate observations during the spring, summer and fall of the first two years of operation and include observations related to tree health, any change in species composition in ground covers and potential signs of soil erosion. Monitoring should also include consultation with the adjacent landowner to assess downstream impacts. Any change in vegetation health, composition or signs of erosion should be discussed with the stormwater engineer to determine mitigative measures.

8.0 CONCLUSION

Colville Consulting Inc. was retained to complete an Environmental Impact Study to identify potential impacts associated with the proposed development on the Subject Property located at 11 Main Street, Village of Morriston, Wellington County. Our assessment of the property verified that natural heritage features located on or adjacent to the property include a tributary to Bronte Creek, wetland, woodland and areas likely functioning as significant wildlife habitat. The woodland and wetland features have been delineated and suitable buffers applied to prevent potential negative impacts from the proposed development.

Based on our observations of the property and adjacent areas, it is our conclusion that the proposed development will have no impact on ecological function of natural heritage features on and adjacent to the Subject Property. To assist with avoiding impacts, it is recommended that the above noted mitigation measures be implemented as required during development design, construction and post construction on the property.

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

Respectfully submitted by:

Brett Espensen, B.A. Hons, EP.
Colville Consulting Inc.

Ian Barrett, M.Sc.
Colville Consulting Inc.

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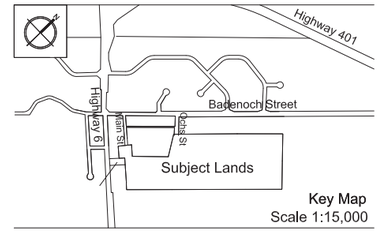
Appendix A

Development Plan

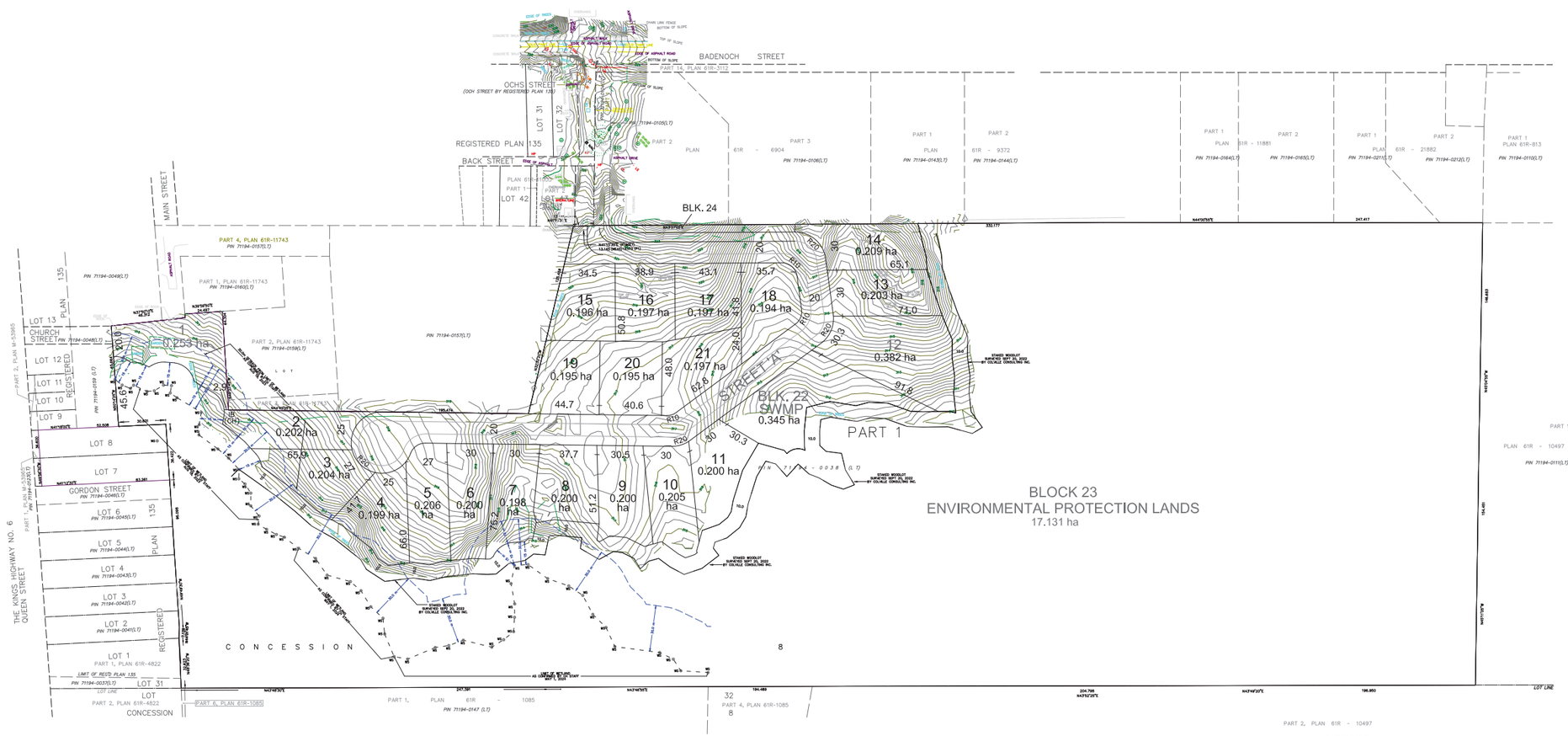
DRAFT PLAN OF SUBDIVISION

PART OF LOTS 7 & 8
NORTH OF QUEEN STREET
REGISTERED PLAN 135

AND PART OF LOT 31
CONCESSION 8
TOWNSHIP OF PUSLINCH
COUNTY OF WELLINGTON



Key Map
Scale 1:15,000



OWNER'S CERTIFICATE:

I authorize Weston Consulting Group Inc. to prepare and submit this plan for draft approval.

Date: ___ ___ ___

WDD MAIN STREET Inc. c/o FAISAL HAMADI
499 BRANT STREET
BURLINGTON, ONTARIO L7R 2G5
PHONE: 905-483-7399
Info@wddinternational.com

SURVEYOR'S CERTIFICATE:

I hereby certify that the boundaries of the lands being subdivided and their correct relationship to the adjacent lands are accurately and correctly shown on this plan.

Date: ___ ___ ___

RAYMOND J. SIBTHORP, OLS
J.D. BARNES LIMITED
257 WOODLAWN ROAD WEST, UNIT 101
GUELPH, ONTARIO N1H 8J1
PHONE: (519) 822-4031 www.jdarnes.com

ADDITIONAL INFORMATION:

[Section 51(17) of the Planning Act, R.S.O. 1990, c. P.13],
as amended to June 20, 2024.
a), b), e), f), g), j) & l) - on plan.
c) - on key plan
d) - see statistics
h) - piped water to be installed by developer
i) - silty sand, sand and silt, and clayey silt
k) - all services to be made available by developer

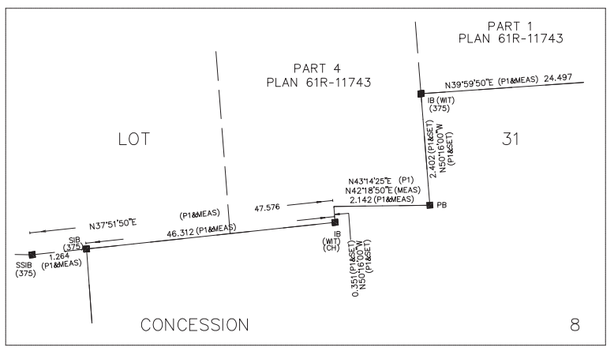
DEVELOPMENT STATISTICS:

LOTS/BLOCKS	LOTS	AREA
Single Detached Lots (20 m+) [Lots 1-21]:	21	4.436 ha
SWMP [Blk. 22]:		0.345 ha
Environmental Protection Lands [Blk 23]:		17.131 ha
Additional lands [Blk. 24]:		0.059 ha
Roads:		1.133 ha
Total:	21	23.104 ha

INTEGRATION DATA		
OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0). COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.		
POINT ID	EASTING	NORTHING
ORP (A)	571 819.11	4 810 772.76
ORP (B)	572 189.46	4 811 593.30
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.		

THE RESULTANT TIE BETWEEN ORP (A) AND ORP (B) IS 900.588 N24°17'31"E

NOT TO SCALE



SCALE
0 80m

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REVISIONS LIST

09 JUN 2024	Modify Lots 1-3,7 per 15m wetland setback. Outline/measure enhanced buffer area
14 MAY 2024	Update using new topo survey with 30m wetland setback. Modify SWM & Lots 1-14.
02 MAY 2024	Revise Lots 1-14 & SWM Block. Remove walkway and revise Lots 15-21
20 DEC 2023	Revise cul-de-sac to R=20 m & lots 3-5,
03 OCT 2023	Remove wetland limits by Colville Sept 20, 2022. Remove original edge of trees & staked limit. Insert Staked Woodlot Surveyed Sept 20, 2022 by Colville Consulting Inc.
20 SEP 2023	Remove old treeline, Regulated Limits. Update using 2023-09-11 topo file
15 SEP 2023	Revise ROW width to 20m & revert back to north-east access
23 FEB-11 APR 2023	Revise per topo plan Revise per updated survey plan & survey text
14 DEC 2022	Revise St. B per grading plan (Crozier) & revise Lots 17-23
11 NOV 2022	Revise ROW width to 18 metres & design lots (min 0.2 ha)
20 OCT 2022	Update drawing using 2022-10-12 survey

Drawing Number: D14

File Number:	10779
Drawn By:	SM
Planner:	PT
Scale:	1:1500
CAD:	10040 Draft Plan D14 2024-07-09.dgn

Appendix B

Vascular Plant Checklist

Plant List for 11 Main Street, Morriston, Puslinch Township, Wellington County conducted on August 10, September 24 & 26, 2022, and June 10, 2023

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	GRank	COSEWIC	COSSARO	SRank	LRank	CUM1-1	FOC	FODM11	SWD	WODM5	Notes
Acer negundo	Manitoba Maple	0	-2	G5			S5		X		X	X	X	
Acer platanoides	Norway Maple		5	GNR			SNA		X					
Acer saccharum ssp. saccharum	Sugar Maple	4	3	G5			S5				X		X	
Achillea millefolium ssp. lanulosa	Woolly Yarrow	0	3	G5			S5		X					
Actaea pachypoda	White Baneberry	6	5	G5			S5						X	
Agrimonia gryposepala	Tall Agrimony	2	2	G5			S5						X	
Agrostis stolonifera	Creeping Bent Grass	0	-3	G5			S5			X		X		
Alisma plantago-aquatica	Common Water-plantain	3	-5	G5			S5			X				
Alliaria petiolata	Garlic Mustard	0	0	G?			SE5		X				X	
Alnus glutinosa	Black Alder	0	-2	G?			SE4					X		
Ambrosia artemisiifolia	Common Ragweed	0	3	G5			S5		X					
Antennaria sp	Pussytoes Species								X					
Aquilegia canadensis	Wild Columbine	5	1	G5			S5		X				X	Growing on limestone boulder in FOC4-1
Arisaema triphyllum	Jack-in-the-pulpit	5	-3	G5			S5						X	
Asclepias incarnata ssp. incarnata	Swamp Milkweed	6	-5	G5			S5			X		X		
Asclepias syriaca	Common Milkweed	0	5	G5			S5		X					
Asclepias tuberosa	Butterfly Weed	8	5	G5			S4	R-A	X					Growing in corner of the CUM1-1, near treed hedge-row at the foot of Ochs Street. Likely introduced or escaped
Asparagus officinalis	Garden Asparagus		3	G5?			SNA		X					
Aster cordifolius	Heart-leaved Aster	5	5	G5			S5	R-A					X	
Aster ericoides var. ericoides	Heath Aster	4	4	G5			S5		X					
Aster lanceolatus ssp. lanceolatus	Panicled Aster	3	-3	G5			S5		X	X		X		
Aster novae-angliae	New England Aster	2	-3	G5			S5		X					
Aster pilosus var. pilosus	Hairy Aster	4	2	G5			S5		X					
Aster puniceus var. puniceus	Purple-stem Aster	6	-5	G5			S5			X		X		
Aster urophyllus	Arrow-leaved Aster	6	5	G4			S4		X					
Betula alleghaniensis	Yellow Birch	6	0	G5			S5					X		
Betula papyrifera	White Birch	2	2	G5			S5					X	X	
Bidens tripartita	Three-lobed Beggar-ticks	4	-3	G5			S5			X				
Bromus inermis ssp. inermis	Smooth Brome	0	5	G4G5			SE5		X					
Campanula rapunculoides	European Bellflower	0	5	G?			SE5		X					Growing in corner of the CUM1-1, near treed hedge-row at the foot of Ochs Street. Likely introduced or escaped
Carex gracillima	Graceful Sedge	4	3	G5			S5			X		X		
Carex granularis	Meadow Sedge	3	-4	G5			S5		X					
Carex spp	Sedge Species								X	X		X		
Carex vulpinoidea	Fox Sedge	3	-5	G5			S5						X	
Carya cordiformis	Bitternut Hickory	6	0	G5			S5						X	
Celastrus scandens	Climbing Bittersweet	3	3	G5			S5						X	
Centaurea maculosa	Spotted Knapweed	0	5	G?			SE5		X					
cf. Lespedeza sp	Bush-clover Species								X					Growing in corner of the CUM1-1, near treed hedge-row at the foot of Ochs Street. Likely introduced or escaped. L. hirta is known locally and rare but this could be a Medicago or Trifolium instead
Chelone glabra	Turtlehead	7	-5	G5			S5					X		
Chenopodium album var. album	Lamb's Quarters	0	1	G5			SE5		X					
Cichorium intybus	Chicory	0	5	G?			SE5		X					
Cicuta maculata	Spotted Water-hemlock	6	-5	G5			S5			X				
Circaea canadensis	Broad-leaved Enchanter's Night	2	3	G5			S5						X	
Cirsium arvense	Canada Thistle	0	3	G?			SE5		X					
Clinopodium vulgare	Wild Basil	4	5	G?			S5		X					
Coreopsis lanceolata	Lance-leaved Coreopsis	5	3	G5			S4?		X					Growing in corner of the CUM1-1, near treed hedge-row at the foot of Ochs Street. Likely introduced or escaped
Cornus alternifolia	Alternate-leaved Dogwood	6	5	G5			S5					X	X	
Cornus amomum ssp. obliqua	Silky Dogwood	5	-4	G5			S5		X			X		
Cornus foemina ssp. racemosa	Grey Dogwood	2	-2	G5			S5		X				X	
Cornus stolonifera	Red-osier Dogwood	2	-3	G5			S5		X	X	X	X	X	
Crataegus punctata	Dotted Hawthorn	4	5	G5			S5				X		X	
Crataegus sp	Hawthorn Species								X	X	X			
Cucurbita sp	Gourd Species								X					
Dactylis glomerata	Orchard Grass	0	3	G?			SE5		X					
Daucus carota	Wild Carrot	0	5	G?			SE5		X					
Digitaria sp	Crabgrass Species								X					
Draba verna	Spring Draba		5	GNR			SNA		X					
Dryopteris carthusiana	Spinulose Wood Fern	5	-2	G5			S5			X			X	
Echinochloa sp	Barnyard Grass Species								X					
Echium vulgare	Viper's Bugloss	0	5	G?			SE5		X					
Elaeagnus umbellata	Autumn Olive	0	3	G?			SE3		X		X			
Elymus repens	Quack Grass	0	3	G5			SE5		X					

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	GRank	COSEWIC	COSSARO	SRank	LRank	CUM1-1	FOC	FODM11	SWD	WODM5	Notes
Equisetum arvense	Field Horsetail	0	0	G5			S5			X		X	X	
Erigeron annuus	Daisy Fleabane	0	1	G5			S5		X				X	
Euonymus obovatus	Running Strawberry-bush	6	5	G5			S4						X	
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye-weed	3	-5	G5			S5			X		X	X	
Eupatorium perfoliatum	Common Boneset	2	-4	G5			S5			X				
Euthamia graminifolia	Grass-leaved Goldenrod	2	-2	G5			S5		X			X		
Fragaria vesca	Woodland Strawberry	4	3	G5			S5						X	
Fragaria virginiana ssp. virginiana	Common Strawberry	2	1	G5			S5		X				X	
Fraxinus pennsylvanica	Red Ash	3	-3	G5			S5		X	X	X		X	
Galium sp	Bedstraw Species								X					
Geranium robertianum	Herb Robert	0	5	G5			SE5						X	
Geum spp	Avens Species												X	Likely G. cana plus meadow species
Glechoma hederacea	Ground-ivy		3	GNR			SNA		X					
Gleditsia triacanthos	Honey Locust	3	0	G5			S2				X			Planted or escaped
Helianthus annuus ssp. annuus	Common Sunflower	0	1	G5			SE4		X					Growing in pile of yard debris in old field meadow along shrub hedge-row
Hesperis matronalis	Dame's Rocket		3	G4G5			SNA		X					
Hieracium sp	Hawkweed Species								X					
Impatiens capensis	Spotted Touch-me-not	4	-3	G5			S5			X				
Inula helenium	Elecampane	0	5	G?			SE5		X			X		
Juglans cinerea	Butternut	6	2	G4			S4	R-B			X			Location noted on map; 25-50cm dbh tree; healthy with little to no dieback in canopy; growing near a hedge row of 50-100cm dbh Sugar Maples
Juglans nigra	Black Walnut	5	3	G5			S4		X		X			
Juncus articulatus	Jointed Rush	5	-5	G5			S5					X		
Juncus dudleyi	Dudley's Rush	1	0	G5			S5					X		
Juncus sp	Rush Species									X				
Juniperus virginiana	Eastern Red Cedar	4	3	G5			S5		X		X			
Lactuca sp	Lettuce Species								X					
Larix sp	Larch Species											X		
Leersia oryzoides	Rice Cut Grass	3	-5	G5			S5			X		X		
Leonurus cardiaca ssp. cardiaca	Motherwort	0	5	G?			SE5		X					
Lepidium campestre	Field Peppergrass		5	GNR			SNA		X					
Leucanthemum vulgare	Oxeye Daisy		5	GNR			SNA		X					
Ligustrum vulgare	Common Privet	0	1	G?			SE5				X		X	
Linaria vulgaris	Butter-and-eggs		5	GNR			SNA		X					
Lobelia siphilitica	Great Blue Lobelia	6	-4	G5			S5			X		X		Growing in seepage areas
Lonicera morrowii	Morrow's Honeysuckle	0	5	G?			SE3		X				X	
Lonicera sp	Honeysuckle Species										X			
Lonicera tatarica	Tartarian Honeysuckle	0	3	G?			SE5		X				X	
Lotus corniculatus	Bird's-foot Trefoil	0	1	G?					X					
Lupinus polyphyllus	Many-leaved Lupine	0	5	G5			SE4		X					Growing in corner of the CUM1-1, near treed hedge-row at the foot of Ochs Street. Likely introduced or escaped
Lycopus uniflorus	Northern Water-horehound	5	-5	G5			S5			X				
Lythrum salicaria	Purple Loosestrife	0	-5	G5			SE5					X		
Maianthemum canadense	Wild Lily-of-the-valley	5	3	G5			S5						X	
Malus pumila	Common Apple	0	5	G5			SE5		X		X		X	
Malva neglecta	Cheeses	0	5	G?			SE5		X					
Matteuccia struthiopteris	Ostrich Fern	5	0	G5			S5						X	
Medicago lupulina	Black Medick		3	GNR			SNA		X					
Medicago sativa	Alfalfa		5	GNR			SNA		X					
Melilotus alba	White Sweet-clover	0	3	G5			SE5		X					
Moss spp	Moss Species											X		
Myosotis laxa	Small Forget-me-not	6	-5	G5			S5		X	X				
Nasturtium officinale	Water-cress	0	-5	G?			SE			X			X	Forming floating mats on flowing ground water seeps
Onoclea sensibilis	Sensitive Fern	4	-3	G5			S5			X		X		
Ostrya virginiana	Hop Hornbeam	4	4	G5			S5						X	
Oxalis sp	Wood-sorrel Species								X					
Panicum capillare	Witch Panic Grass	0	0	G5			S5		X					
Parthenocissus inserta	Thicket Creeper	3	3	G5			S5		X		X		X	
Phalaris arundinacea	Reed Canary Grass	0	-4	G5			S5		X	X		X		
Phleum pratense	Timothy	0	3	G?			SE5		X					
Phragmites australis	Common Reed	0	-4	G5			S5					X		
Picea glauca	White Spruce	6	3	G5			S5					X		
Pilea sp	Clearweed Species									X		X		Growing in seepage openings, SWT and SWC. Either P. pumila or P. fontana
Pinus strobus	Eastern White Pine	4	3	G5			S5			X	X		X	
Pinus sylvestris	Scots Pine	0	5	G?			SE5					X		
Plantago lanceolata	Ribgrass	0	0	G5			SE5		X					

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	GRank	COSEWIC	COSSARO	SRank	LRank	CUM1-1	FOC	FODM11	SWD	WODM5	Notes
Plantago rugelii	Pale Plantain	1	0	G5			S5		X					
Poa compressa	Canada Blue Grass	0	2	G?			S5		X					
Poa palustris	Fowl Blue Grass	5	-4	G5			S5			X				
Poa pratensis ssp. pratensis	Kentucky Blue Grass	0	1	G?			S5		X					
Podophyllum peltatum	May-apple	5	3	G5			S5		X				X	
Polygonum aviculare	Common Knotweed	0	1	G?			SE5		X					
Polygonum persicaria	Lady's Thumb	0	-3	G?			SE5			X				
Populus grandidentata	Largetooth Aspen	5	3	G5			S5		X		X	X	X	
Populus tremuloides	Trembling Aspen	2	0	G5			S5		X	X		X	X	
Potentilla recta	Sulphur Cinquefoil		5	GNR			SNA		X					
Prunella vulgaris ssp. lanceolata	Heal-all	5	5	G5			S5			X		X		
Prunus avium	Sweet Cherry	0	5	G?			SE4		X		X		X	
Prunus serotina	Black Cherry	3	3	G5			S5			X	X		X	
Prunus virginiana ssp. virginiana	Choke Cherry	2	1	G5			S5		X	X	X		X	
Pyrus communis	Common Pear	0	5	G5			SE4		X			X		
Quercus macrocarpa	Bur Oak	5	3	G5			S5		X					
Quercus macrocarpa	Bur Oak	5	3	G5			S5		X					
Quercus rubra	Red Oak	6	3	G5			S5		X		X			
Ranunculus acris	Tall Buttercup	0	-2	G5			SE5		X				X	
Rhamnus cathartica	Common Buckthorn	0	3	G?			SE5		X	X	X		X	
Rhamnus frangula	Glossy Buckthorn	0	-1	G?			SE5			X		X	X	
Rhus radicans ssp. rydbergii	Western Poison-ivy	0	0	G5			S5		X				X	
Rhus typhina	Staghorn Sumac	1	5	G5			S5		X		X			
Ribes americanum	Wild Black Currant	4	-3	G5			S5					X		
Ribes cynosbati	Prickly Gooseberry	4	5	G5			S5						X	
Ribes sp	Currant Species										X			
Robinia pseudo-acacia	Black Locust	0	4	G5			SE5				X			
Rosa sp	Rose Species								X					
Rubus idaeus ssp. melanolasius	Wild Red Raspberry	0	-2	G5			S5		X				X	
Rubus occidentalis	Black Raspberry	2	5	G5			S5				X			
Rubus pubescens	Dwarf Raspberry	4	-4	G5			S5					X		
Rumex crispus	Curly Dock	0	-1	G?			SE5		X					
Rumex sp	Dock Species									X				
Salix alba var. tristis	Weeping Willow	0	-3	G5			SE4					X		A few very large trees in SWT
Salix bebbiana	Bebb's Willow	4	-4	G5			S5			X		X		
Salix discolor	Pussy Willow	3	-3	G5			S5			X		X		
Salix petiolaris	Slender Willow	3	-4	G5			S5			X		X		
Sanguinaria canadensis	Bloodroot	5	3	G5			S5		X					
Saponaria officinalis	Bouncing Bet	0	3	G?			SE5		X					
Scirpus atrovirens	Black Bulrush	3	-5	G5?			S5			X		X		
Senecio jacobaea	Tansy Ragwort	0	5	G?			SE1		X					Growing in corner of the CUM1-1, near treed hedge-row at the foot of Ochs Street. Likely introduced or escaped
Setaria pumila	Yellow Foxtail	0	0	G?			SE5		X					
Silene latifolia	White Campion		5	GNR			SNA		X					
Silene vulgaris	Bladder Campion		5	GNR			SNA		X					
Sisyrinchium sp	Blue-eyed-grass Species								X					
Solanum dulcamara	Bittersweet Nightshade	0	0	G?			SE5		X	X		X	X	
Solidago altissima var. altissima	Tall Goldenrod	1	3	G?			S5		X			X		
Solidago flexicaulis	Zigzag Goldenrod	6	3	G5			S5						X	
Solidago nemoralis ssp. nemoralis	Gray Goldenrod	2	5	G5			S5		X					
Solidago patula	Rough-leaved Goldenrod	8	-5	G5			S5	R-A				X		In seepy openings of SWC
Solidago rugosa ssp. rugosa	Rough Goldenrod	4	-1	G5			S5					X	X	
Sorbus sp	Mountain-ash Species										X			
Syringa vulgaris	Common Lilac	0	5	G?			SE5		X		X		X	
Taraxacum officinale	Common Dandelion	0	3	G5			SE5		X					
Thelypteris palustris var. pubescens	Marsh Fern	5	-4	G5			S5			X		X	X	
Thuja occidentalis	Eastern White Cedar	4	-3	G5			S5		X	X	X	X	X	
Tilia americana	Basswood	4	3	G5			S5		X		X		X	
Tragopogon dubius	Yellow Goatsbeard		5	GNR			SNA		X					
Trifolium pratense	Red Clover	0	2	G?			SE5		X					
Triosteum aurantiacum	Wild Coffee	7	5	G5			S5		X		X		X	Location noted on map, along open hedge-row in CUM1-1; also on and around limestone boulder in FOC4-1
Tussilago farfara	Coltsfoot	0	3	G?			SE5		X	X		X	X	
Typha angustifolia	Narrow-leaved Cattail	3	-5	G5			S5			X		X		
Ulmus americana	White Elm	3	-2	G5?			S5		X	X		X	X	
Verbascum thapsus	Common Mullein	0	5	G?			SE5		X					
Verbena hastata	Blue Vervain	4	-4	G5			S5					X		
Veronica officinalis	Common Speedwell	0	5	G5			SE5		X				X	

ScientificName	CommonNames	Coeff.Cons.	Coeff.Wet.	GRank	COSEWIC	COSSARO	SRank	LRank	CUM1-1	FOC	FODM11	SWD	WODM5	Notes
Veronica persica	Bird's-eye Speedwell		5	GNR			SNA		X					
Viburnum lentago	Nannyberry	4	-1	G5			S5		X		X	X		
Viburnum opulus	European Highbush Cranberry	0	0	G5			SE4						X	
Viburnum trilobum	Highbush Cranberry	5	-3	G5T5			S5		X			X		
Vicia sp	Vetch Species								X					
Viola sp	Violet Species											X		
Vitis riparia	Riverbank Grape	0	-2	G5			S5		X	X	X		X	
Vicia cracca	Tufted Vetch		5	GNR			SNA		X					

Legend

CoeCons. - Coefficient of Conservatism. Scores for each species range from 0 (low conservatism) to 10 (high conservatism).
A conservatism value of 0 indicates species is widespread. A value of 8, 9 or 10 indicates that a species is a habitat specialist.
CoeWet. - Coefficient of Wetness
5 - Almost always occur in upland areas
4, 3, 2 - Usually occur in upland areas
1, 0, -1 - Found equally in upland and wetland areas
-2, -3, -4 Usually occur in wetlands
-5 Almost always occur in wetlands

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

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

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

Srank - Subnational Rank
S1 — Critically Imperiled - Critically imperiled in the province because of extreme rarity, (often 5 or fewer occurrences)
S2 — Imperiled - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer)
S3 — Vulnerable - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer)
S4 — Apparently Secure - Uncommon but not rare
S5 — Secure - Common, widespread, and abundant in the province
SE — Exotic

Appendix C

ELC Data Cards

ELC

COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 11 MAIN STREET, MORRISTON, PUSLINCH		POLYGON:
SURVEYOR(S): ACG	DATE: Sept 21/22	TIME: start / finish
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☑ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☑ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☑ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☑ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY	5/	1	MEL ALBA >> VIT RIPA > SYR VULG = ACE NEGU > ...
3	UNDERSTOREY	5	4	BRO INER > AST ERIC > AST NOVA > SOL ALTI > DAC CARO > DAC GLOM
4	GRD. LAYER	6/7	3	POA PRAT > SOL NEMO > CENT > SAT VULG > FRA VIRG... > CAREX > POA COMP

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION: | BA:

SIZE CLASS ANALYSIS:	O	< 10	R	10 - 24	N	25 - 50	N	> 50
STANDING SNAGS:	R	< 10	N	10 - 24	N	25 - 50	N	> 50
DEADFALL / LOGS:	R	< 10	N	10 - 24	N	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	✓	PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS: Pits Some ... sand ... & ... gravel

TEXTURE: Silt ...	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION: ELC CODE

COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	DRY - MOIST OLD FIELD MEADOW	CUM1-1
INCLUSION		
COMPLEX		

Notes:

ELC

STAND CHARACTERISTICS

SITE: SE OF BADENOCH STREET / Hwy 6
POLYGON: PUSLINCH TWP, WELLINGTON COUNTY
DATE:
SURVEYOR(S):

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL AVG
TOTAL							
BASAL AREA (BA)							100
DEAD							

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

SUMAC - WALNUT CUT1-1

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	1	JUG NIGR
2	SUB-CANOPY	3	2	JUG NIGR >> FRA PENN > MAL PUMI > RHU TYPH
3	UNDERSTOREY	4	3	RHU TYPH > VIT RIPA > JUG NIGR = POA ...
4	GRD. LAYER	5-7	4	DAC GLOM > SOL ALTI > POA ... > AST LANC

TREED & SHRUB THORN HEDGEROWS FODM11/FOCM5

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	1	TIL AMER = ACE NEGU ...
2	SUB-CANOPY	3	3	RHA CATH >> CRAT (MACR) > ACE NEGU >> ...
3	UNDERSTOREY	4	4	RHA CATH > VIT RIPA
4	GRD. LAYER	5-7	3	PHA ... > AST ... > SOL = ... > VIT RIPA

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
BRO ININ				D	
DAC GLOM				A	
SOL ALTI				A	
AST NOVA				A	
AST LANC				O	
AST ERIC				A	
POA PRAT				A	
PHL PRAT				A	
ELY REPE				A	
AST PILO				O	
DAU CARO				A	
VICCIA				O	
CIR ARVE				A	
PLA LANC				O	
SAP OFFI				O	
CHE ALBA				O	
TAR OFFI				O	
PHA ARUN				D	
SAT VULG				O	[illegible]
CENT STOEB/MACULOSA				A	*
ACH MILL				O	
ASC SYRI				O	
CIC INTY				O	
RUM CRISP				O	
VER THAP			O		
MEL ALBA			A		
PAN CAPI				O	
ERI CANA				O	
CAMP ~~RADI~~ RADICANS				R	[illegible]
SOL DULC				R	
LACTUCA			O		
PYR COMM			R		

SPECIES CODE	LAYER 1	2	3	4	COL.
MAL PUMI		R	R		
LED CACA				O	
OXALIS				O	
AMB ARTE				O	
SET PUMI				O	
LOT CORN				O	
SOL NEMO				R	
TRIF PRAT				O	
ANTENARIA				R	
ECH VULG				O	BUG LOSS
LONI TATA			R	R	
LONI MAAK			R		
PLA RUGO				O	
DIGITARIA				R	GRASS
CAREX (GRASS)				O	
HIER				O	
FRA VIVI				O	
* AST URBANUM				O	[illegible]
RUB IDAE				O	
POA COMP				A	
COR FORA			R		
EUT GRAM			R		
VINE				R	
POL (AVIC)					
HEL ANNU			R		SUN FLOWER
SYR VULG			O	O	
ACE NEGU			O	O	
ECHINOCLOA				O	SEED
MALVA NEGLECTA / MUSK MALLOW?				R	
RHA CATH			R		
JUN VIRG		O	O	O	
RHU TYPH		O	O	O	
RAN ACRI				R	

ELC PLANT SPECIES LIST

SITE:
POLYGON: OLD FIELD MEADOW & HEDGEROWS
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

TREED & SHRUB HEDGE ROWS

SPECIES CODE	LAYER 1	2	3	4	COL.
ROB PSUE			R	R	
QUE RUBR	R				
SORBUS		R			
JUG CINE	R				25-50*
* TRI AURA				R	
VIB LENT			R		
POP GRAN	R	R			
FRA PENN		R	O	O	
PIN STRO			R	R	
THU OCCI	R	R	R		
JUN VIRG		O	O		
PRU SERO	R	O	O	O	
COR STOL				R	
ACE SASA	R	R			
MAL PUMI		R			
GLED TRIC		R			ESCAPED
RUB OCCI				O	
RIBES				O	
RHU TYPH		O	O	O	
SYR VULG			O	O	
JUG NIGR		R	O	O	
LIG VULG			O	O	
CRAT MACR		O			
ELEA UMBEL			R	R	AUTUMN
PRU VIRG			O	O	
RHA CATH		A	A	A	
VIT RIPA		A	A	A	
PAR INSE			A	A	
PRU AVIU	R	O	O		
CRAT PUNC		O	O		
ACE NEGU	O	A	A	A	
TIL AMER	O	O			
LONICERA SPP			O	O	

* A triple stemmed 25-50cm dbh Butternut (Checked a little to see disease - canopy) Growing along a hedge row of 50-100cm & sugar maples

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 11 MAIN STREET, MORRISTON		POLYGON:	
SURVEYOR(S): ACG	DATE: Sept. 24/22	TIME: start / finish	
UTMZ:	UTMZ:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			COVER		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2,1	2,3	TIL AMER>PRU SER>PIN STRO>CAR [illegible]>ACE SAA>POP TREM
2	SUB-CANOPY	3	3,2	RHA CATH>CRAT MONO>CRAT SP>VIT RIPA>[illegible]>THU [illegible]
3	UNDERSTOREY	4	4,3	RHA CATH>PRU VIVI>VIT RIPA>FRA PENN
4	GRD. LAYER	3,2	5-7	RHA CATH>RUB IDME>FRA PENN>VIT RIPA>RHU RADI

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50	R	> 50
STANDING SNAGS:	R	< 10	O	10 - 24	O	25 - 50	R	> 50
DEADFALL / LOGS:		< 10	R	10 - 24	O	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	FRESH - MOIST DECIDUOUS WOODLAND ECOSITE	WODM5
INCLUSION		
COMPLEX		

Notes:

ELC
STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	LAT @ [illegible] 34 [illegible] [illegible] 9:30 - 7:30

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL AVG
TOTAL							
BASAL AREA (BA)							100
DEAD							

STAND DESCRIPTION: MATURE STAND ON SLOPE AROUND [illegible]

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1,2	2,1	PIN STRO>TIL AMER>PRU SERO
2	SUB-CANOPY	3	3	CRAT (MONO)>RHA CATH>OST VIRG
3	UNDERSTOREY	4	4	RHA CATH>PRU VIVI>PRU SERO>[illegible]
4	GRD. LAYER	5-7	4	RHA CATH>RUB IDME>FRA PENN

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

WOODS SPECIES CODE YOUNG EDGE	LAYER 1	2	3	4	COL
RHA CATH		D	A		
PRU SERO	R	O	O		
COR ALTE		O	O		
LON MORR			O		
LON TATA			O		
CAR CORD	R	R	O	O	
MAL PUMI		R			
PRU VIVI			A		
VIT RIPA		O	A	A	
RUB IDAE				A	
CRAT PUNC		O	O		
FRA PENS			O	A	
PIN STRO	R	R			
ACE SASA	R	R			
LIG VULG			O	O	
SYR VULG			O	O	
PAR INSE				O	
RHUS RADI				O	
GEUM				A	
FRA VIVI					
PRU AVIUM		R			
ACE NEGU	R	O	O	O	
POP TREM	R	R			
SOL RUGO				O	
AGR GRYP				R	
VER OFFI				O	
ULM AMER	R	O	O	O	
THU OCCI		R	O	O	
VIB OPUL					

FOCMM2-3 SPECIES CODE MATURE BACK	LAYER 1	2	3	4	COL.
PIN STRO	A				
PRU SERO	A				
OST VIRG		O			
BET PAPY	O				
ULM AMER		O	O		
THU OCCI		R	O	O	
TIL AMER	A				
GER ROBE				R	
ALL PETI				R	
* TRI AURA				R	
TUS FARFA				R	
* AQU CANA				R	
RIB CYNO				R	
AST CORD				O	
COR FORA					
POT GRAN					

} ON LIMESTONE BOULDER

Page ...... of ......

ELC PLANT SPECIES LIST

SITE:
POLYGON: WOOD LAND
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL

Many large
10-25 or 25cm + Ø
OPEN GROWN CRATEGUS
ALL STILL STANDING or
DECLINING AND BEING
FILLED IN AND OVERTOPPED
BY RHA CATH

The [illegible]
[illegible]
BUT I SPENT [illegible]
[illegible] LARGE (EAST) OF [illegible]

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 11 MAIN STREET, MORRISTON		POLYGON:	
SURVEYOR(S): ACG	DATE: SEPT 26/23	TIME: start / finish	
UTMZ:	UTMZ:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	1	POP TREM > PRU SERO >> PIN STRO
2	SUB-CANOPY	3	4	THU OCCI
3	UNDERSTOREY	4	1	THU OCCI >> FRA PENN > PRU VIRI
4	GRD. LAYER	5-7	1	THU OCCI > PRU VIRI > FRA PENN

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 50% 4 = CVR > 50%

STAND COMPOSITION:

BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50	A	> 50
STANDING SNAGS:	A	< 10	O	10 - 24	R	25 - 50	R	> 50
DEADFALL LOGS:	A	< 10	O	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE: SiCL	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	FRESH - MOIST WHITE CEDAR CONIFEROUS FOREST	FOC4-1
INCLUSION	20% FRESH WHITE CEDAR CONIFEROUS FOREST	FOC3-2
COMPLEX		MAM2-9

Notes:

ELC
STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

TREE TALLY BY SPECIES:

PRISM FACTOR: 2

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL AVG
THU OCCI	𝍸 𝍸 |	𝍸 𝍸 III	𝍸 | □				
PIN STRO	𝍸 II						
ULM AMER	𝍸 III						
POP TREM	𝍸 |						
PRU SERO			𝍸 III				
TOTAL							
BASAL AREA (BA)							100
DEAD	1	11	1				

STAND DESCRIPTION

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY	3	1	SAL SPP >> ACE SPI
3	UNDERSTOREY	4	4	AST PUNI > ALT LANC >> EUP PERF
4	GRD. LAYER	5-7	4	AGR STOL > PHA ARUN > LET ORYZ > IMP CAPE

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
THU OCCI		D	A	O	
PIN STRO	R				
VIT RIPA		O	O	O	
PRU VIRG			A	O	
DRY CART				O	
FRA PENN		R	D	O	
ULM AMER		R	O		
RHA FRAN			O	O	
SOL DULC				R	
SAL PETI			R		
PRU VULG				O	
CAR GRACILLIMA				O	
TUS FAFA				[illegible]	
RHA CATH			O	O	
PRU SERO	O	O	O	O	
POP TREM	O	R	R	R	
CRAT SP		O	O	O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.

Page ...... of ......

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
ALL PLAN				R	
LYC UNIF				O	
JUNCUS				O	
TUS FAFA				O	
EQU ARVE				O	
POA PALU				O	
* NAS OFFI				R	IN SEEP
ONO SENS				O	
PILEA				O	
* LOB (S,PH)				O	
LEE ORYZ				A	
IMP CAPE				A	
SCI ATRO				O	
THE PALU				O	
EUP MACU			O		
TYP ANGU			R		
SAL BEBB		R	O		
COR STOL			O		
PHA ARUN				O	
RUMEX				O	
BID TRIP				O	
MYO LAXA				O	
CAREX				O	
POP TREM		O	O	O	
SAL DISC			O		
CIC MACU				O	
EUP PERF			O		
POL PERS				O	
ASC INCA				O	
AGR STOL				D	
AST PUNI			A		
AST LANC			A		

* ORGANIC OPEN SEEPS AST PUNI MEADOW

FRESH–MOIST FOC ON UPPER–LOWER SLOPE OF DRUMLINS

MOSTLY A STORIED CEDAR [illegible] EVEN AGED STAND, BUT OCCASIONAL OPENINGS SUPPORT [illegible] TREM OR PRU SERO [illegible] [illegible] [illegible].

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 11 MAIN STREET MORRISTON			POLYGON:
SURVEYOR(S): HUG	DATE: Sept 21	TIME: start / finish	
UTMZ:	UTMZ:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☑ WETLAND ☐ AQUATIC	☑ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☑ LACUSTRINE ☐ RIVERINE ☑ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☑ NATURAL ☐ CULTURAL	☐ PLANKTON ☑ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☑ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☑ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☑ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☑ SURFICIAL DEP. ☐ BEDROCK			☑ OPEN ☐ SHRUB ☑ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	1	POP TREM > THU OCCI
2	SUB-CANOPY	3	3	THU OCCI >> POP TREM >> RHA FRAN
3	UNDERSTOREY	4	2	THU OCCI >> RHA FRAN = [illegible]
4	GRD. LAYER	5-7	4	EQU ARVE >> ONO SENS = RUB PUBE > TUS FARA = [illegible]

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	O	25 - 50	R	> 50
STANDING SNAGS:	O	< 10		10 - 24		25 - 50	R	> 50
DEADFALL / LOGS:	O	< 10		10 - 24		25 - 50	R	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE: Organic	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS: 30-40 cm [illegible]		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	WHITE CEDAR ORGANIC CONIFEROUS SWAMP	SWC3-1
INCLUSION		
COMPLEX		

Notes:

ELC
STAND CHARACTERISTICS

SITE:	
POLYGON: SEDGE SWAMP	
DATE:	
SURVEYOR(S):	

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL AVG
TOTAL							
BASAL AREA (BA)							100
DEAD							

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

RED-OSIER MINERAL THICKET SWAMP
SWT2-5

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY	3	2.1	SAL PETI >> SAL [illegible] = ACE [illegible]
3	UNDERSTOREY	4	4	COR STOL > AST PUNI > AST LANC > [illegible]
4	GRD. LAYER	5-7	4	EQU ARVE > PHAL. ARUN > JUNCUS > [illegible]

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
THU OCCI	D	D			
POP TREM	O				
POP GRAN					
PYR COMM		R			
PIN SYLV		R	R		
ONO SENS				A	
EQU ARVE				D	?
AST PUNI				O	
PHA ARUN				O	
SOL RUGO				O	
RUB PUBE					
THE PALU					
MOSS				D	
PICEA GLAUCA		R			
LOT CORN				O	
TUS FAFA				O	
LARIX		R			
RHA FRAN			O	O	
PRU VULG				O	
SCI ATRO			O		
COR ALTE		O	O		
PILEA				O	
CAREX GRAC					
BET ALLE	R	R	O	O	
COR AMOM			O	O	
VIB TRIL				R	
RIBES (AMER)				O	NO BERRIES
* SOL PATU				R	

SPECIES CODE	LAYER 1	2	3	4	COL.

Page ...... of ....

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
JUN ARTI				O	
BET PAPY		R			
LARIX		R			
CHE GLAB				R	
RHA FRAN			R	R	
PIN SYLV			R		
VIOLA SP				R	
CARD ([illegible])				O	
COR AMOM			R		
SAL DISC		O	O		
LOB SIPH				R	
JUNCUS (TENU / DUDL)				A	
CAREX SP				O	
SCI ATRO			O	O	
ULM AMER		R	R		
EQU ARVE				O	
SAL PETI			O		
SOL DULC				O	
EUP MACU			O		
ACE NEGU		O	O	O	
SAL BEBB		O	O		
THU OCCI		R	O	O	
SAL ALBA	R				[illegible]
VER HAST				O	
AGR STOL				A	
SOL ALTI				O	
TYP ANGU			O		
LYT SALI				O	
EUT GRAM				O	
AST LANC			A		
AST PUNI			A		
PHA ARUN				A	
COR STOL			O	A	

INU HELE R
ALN GLUT R
VIB LENT O O
SOL RUGO O
PHR AUST R

The cedar swamp has pockets of organics & seepage areas. — grades uphill and then into a fringe of Fraxinus [illegible] – portion and being meadow.

In places its closed canopy and trees 15-20 ft tall.

Mostly its open stunted cedars 4-8 ft tall

col. sol patula [illegible] and by [illegible] FOE

Appendix D

Site Photographs

Photo 1: View from CUM1-1 towards Ochs Road

Photo 2: View from northwest corner of property of manicured lawn on adjacent residential property.

Photo 3: View of FODM11 community along northern boundary of Subject Property

Photo 4: Example of CUM1-1 ELC community after cultivation. Viewing southeast.

Photo 5: View or CUM1-1 ELC Community on the Subject Property, viewing east.

Photo 6: View of WODM5 ELC community in background, CUM1-1 ELC community in foreground.

Photo 7: View of WODM5 ELC community on Subject Property.

Photo 8: View of SWT2-5 ELC community on Subject Property, viewing south.

Appendix E

Summary of Bat Acoustic Monitoring Data

KALEIDOSCOPE 4.5.4

Bats of North America		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	PERSUB		NOID	NOISE		Presence P	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	PERSUB
Unit A	Totals		2	5	1						7	592			1	0.001513	0.0000009	0.985708	1	1	1	1
	20230531				1						1	32			1	1	1	0.1435802	1	1	1	1
	20230601			1							1	50			1	1	0.0409786	1	1	1	1	1
	20230602			1							1	18			1	1	0.0409786	1	1	1	1	1
	20230603			1							1	61			1	1	0.0409786	1	1	1	1	1
	20230604										0	9			1	1	1	1	1	1	1	1
	20230605										1	4			1	1	1	1	1	1	1	1
	20230606										0	1			1	1	1	1	1	1	1	1
	20230607										0	4			1	1	1	1	1	1	1	1
	20230608			2							0	0			1	1	0.0016792	1	1	1	1	1
	20230609		1								2	0			1	0.039036	1	1	1	1	1	1
	20230610		1								0	3			1	0.039036	1	1	1	1	1	1
	20230611										0	410			1	1	1	1	1	1	1	1

KALEIDOSCOPE 4.5.4

Bats of North America		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	PERSUB		NOID	NOISE		Presence P	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	PERSUB
Unit B	Totals	4	3	87	42		21		2		136	214			1	0.13256	0	0.0000002	1	0	1	0.098868
	20230531	1		13	6		2				16	6			1	1	0	0.1133279	1	0.033687	1	1
	20230601			14	4		2				19	10			1	1	0	0.6597848	1	0.033211	1	1
	20230602			10	4				1		11	6			1	1	0	0.3822535	1	1	1	0.036832
	20230603			4	6		4				9	8			1	1	0.0010079	0.003735	1	0.001103	1	1
	20230604			11	1						10	3			1	1	0	1	1	1	1	1
	20230605	3	1	7	7		3				20	14			0.612312	0.276324	0.0000038	0.009549	1	0.04412	1	1
	20230606			6	1		1				3	10			1	1	0	0.9999839	1	0.18224	1	1
	20230607			3	1		5				12	3			1	1	0.0003903	0.8507304	1	0.000201	1	1
	20230608		1	4	4						6	1			1	0.038895	0.0003477	0.0564665	1	1	1	1
	20230609		1	6	3		3				11	7			1	0.27546	0.0000005	0.3515393	1	0.042865	1	1
	20230610			9	5		1		1		17	12			1	1	0	0.1338887	1	0.229786	1	0.049013
	20230611										2	134			1	1	1	1	1	1	1	1

	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	PERSUB	NO ID	
Unit A	0	2	5	1	0	0	0	0	7	15
Unit B	4	3	87	42	0	21	0	2	136	295
Totals	4	5	92	43	0	21	0	2	143	310

Appendix F

Species at Risk Screening

Puslinch Area

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

AMPHIBIANS		ESA Protection	Key Habitats Used By Species	Subject Property

BIRDS		ESA Protection	Key Habitats Used By Species	Subject Property
Bank Swallow (*Riparia riparia*)	**Known to Occur**	*Species and General Habitat Protection June 27, 2014*	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 breeding habitat not present on Subject Property. Not observed during breeding bird surveys.
Barn Swallow (*Hirundo rustica*)	**Known to Occur**	*Species and General Habitat Protection*	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Barn Swallows observed foraging over property during breeding bird surveys. No potential nest structures located on Subject Property.
Bobolink (*Dolichonyx oryzivorus*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Typical breeding habitat not present on Subject Property. Not observed during breeding bird surveys.
Canada Warbler (*Cardellina canadensis*; formerly *Wilsonia canadensis*)	**Known to Occur**	*N/A*	Generally prefers wet coniferous, decediuous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest.	Potential breeding habitat present on Subject Property. Not observed during breeding bird surveys.
Cerulean Warbler (*Setophaga cerulea;* formerly *Dendoica cerulea*)	**Known to Occur**	*Species and General Habitat Protection*	generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	Typical breeding habitat not present on Subject Property. Not observed during breeding bird surveys.
Chimney Swift (*Chaetura pelagica*)	**Known to Occur**	*Species and General Habitat Protection*	historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Typical breeding habitat not present on Subject Property. Not observed during breeding bird surveys.
Common Nighthawk (*Chordeiles minor*)	**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)	Typical breeding habitat not present on Subject Property.
Eastern Meadowlark (*Sturnella Magna*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Typical breeding habitat not present on Subject Property. Not observed during breeding bird surveys.
Eastern Wood-Pewee (*Contopus virens*)	**Known to Occur**	*N/A*	asscoiated with deciduous and mixed forests. Witin mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Typical breeding habitat present on Subject Property. Species detected on east side of property during breeding bird surveys.
Golden-winged Warbler (Vermivora chrysoptera)	**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 Subject Property. Not observed during breeding bird surveys.
Wood Thrush *(Hylocichla mustelina*)	**Known to Occur**	*N/A*	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Typical breeding habitat not present on Subject Property. Not observed during breeding bird surveys.

FISH			Key Habitats Used By Species	Subject Property
Redside Dace *(Clinostomus elongatus)*	**Known to Occur**	*Species Protection and **Habitat Regulation***	generally found in pools and slow-moving areas of small headwater streams with a moderate to high gradien	Potential habitat not present on Subject Property.

INSECTS		ESA Protection	Key Habitats Used By Species	Subject Property
Monarch Butterfly *(Danaus plexippus)*	**Known to Occur**	*N/A*	exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces	Isolated stems of Common and Swamp Milkweed noted on Subject Property. Monarch use of stems not documented.
West Virginia White (Pieris virginiensis)	**Known to Occur Historically**	*N/A*	generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (Cardamine diphylla), which is a small, spring-blooming plant of the forest floor.	Typical habitat not present on Subject Property.

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

MOLLUSCS	ESA Protection	Key Habitats Used By Species	Subject Property

MOSSES	ESA Protection	Key Habitats Used By Species	Subject Property

PLANTS		ESA Protection	Key Habitats Used By Species	Subject Property
Butternut *(Juglans cinerea)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Hybrid individual observed during botanical inventories.

REPTILES		ESA Protection	Key Habitats Used By Species	Subject Property
Blanding's Turtle *(Emydonidea blandingii)*	**Known to Occur**	*Species and General Habitat Protection*	generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.	Typical habitat not present on Subject Property. Not observed on property.
Eastern Ribbonsnake *(Thamnophis sauritus)*	**Known to Occur**	*N/A*	generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Typical habitat not present on Subject Property. Not observed on property.
Northern Map Turtle *(Graptemys geographica)*	**Known to Occur**	*N/A*	generally inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day.	Typical habitat not present on Subject Property. Not observed on property.
Snapping Turtle *(Chelydra serpentina)*	**Known to Occur**	*N/A*	generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	Typical habitat not present on Subject Property. Not observed on property.

Appendix G

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
977245	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17NJ7111	
977245	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17NJ7111	
977245	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17NJ7111	
977255	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17NJ7211	
977255	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17NJ7211	
977255	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17NJ7211	
977255	SPECIES	Butternut	Juglans cinerea		END	END	17NJ7211	
977244	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17NJ7110	
977244	SPECIES	Redside Dace	Clinostomus elongatus		END	END	17NJ7110	
977244	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17NJ7110	
977244	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17NJ7110	
977244	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	17NJ7110	
977254	SPECIES	Eastern Ribbonsnake	Thamnophis sauritus		SC	SC	17NJ7210	
977254	SPECIES	Redside Dace	Clinostomus elongatus		END	END	17NJ7210	
977254	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17NJ7210	
977254	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17NJ7210	

Appendix H

Significant Wildlife Habitat Table

Assessment of potential Significant Wildlife Habitat for 11 Main Street, Morriston

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 is not present on Subject Property.
Shorebird Migratory Stopover Area	Absent	Significant potential habitat is not present on Subject Property.
Raptor Wintering Area	Absent	Suitable habitat is not present on Subject Property.
Bat Hibernacula	Absent	Suitable overwintering habitat is not present on Subject Properties
Bat Maternity Colonies	Absent within development area	Potential roost trees present within portions of WODM5 and FOC4-1 vegetation communities on Subject Property. No development proposed within these communities.
Bat Migratory Stopover Area	Absent within development area	No evidence that development area is providing migratory stopover habitat for bats.
Turtle Wintering Areas	Absent	Potential overwintering habitat not present on Subject Property.
Reptile Hibernaculum	Absent within development area	Suitable overwintering habitat not observed in proposed development area on property. Overwintering habitat may be present in woodland areas near the toe of slopes, but no potential hibernacula identified.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Not known to occur on Subject Property.
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Not known to occur on Subject Property.
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Not known to occur on Subject Property.
Migratory Butterfly Stopover Areas	Absent	Significant potential habitat is not present on Subject Property.

Landbird Migratory Stopover Areas	Absent	Significant potential habitat is not present on Subject Property.
Deer Yarding Areas	Absent	Not known to occur on Subject Property
Deer Winter Congregation Areas	Absent within development area	Not known to occur on Subject Property, but potential habitat is present in White Cedar forest and wetland. The proposed development will not impact these areas or potential function.
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on Subject Property
Sand Barren	Absent	Habitat type not present on Subject Property
Alvar	Absent	Habitat type not present on Subject Property
Old Growth Forest	Absent	Habitat type not present on Subject Property
Savannah	Absent	Habitat type not present on Subject Property
Tallgrass Prairie	Absent	Habitat type not present on Subject Property
Other Rare Vegetation Communities	Absent	Habitat type not 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	No evidence of turtle nesting observed on Subject Property
Seeps and Springs	Absent within development area	Small and isolated seeps occur along bottom of slope edge in cedar forest. No significant habitat functions noted in association with seeps. No development proposed near these areas.
Amphibian Breeding Habitat (Woodland)	Absent	No Amphibians heard calling from property. No vernal pools or suitable potential breeding habitat observed on Subject Property.

Amphibian Breeding Habitat (Wetlands)	Absent	No Amphibians heard calling from property. No vernal pools or suitable potential breeding habitat observed on Subject Property.
Woodland Area-Sensitive Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH		
Marsh Breeding Bird Habitat	Absent	Suitable habitat not present on Subject Property.
Open Country Bird Breeding Habitat	Absent	Indicator species not present on Subject Property
Shrub/Early Successional Bird Breeding Habitat	Absent	Indicator species not present on Subject Property
Terrestrial Crayfish	Absent	Suitable habitat not present on Subject Property
Special Concern and Rare Wildlife Species	Present	Eastern Wood-pewee assumed to be breeding in woodland on east side of property. No development proposed within or near potential habitat for this species.
ANIMAL MOVEMENT CORRIDORS		
Amphibian Movement Corridors	Absent	Amphibian use of the property is limited. This property does not serve as a link between suitable upland and wetland habitats.

Please note the above SWH criteria are based on guidance provided by the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E and modified to be specific for the Subject Property.